Catalog Home

Undergraduate Academic Catalog
2014-2015

Southern Polytechnic State University in the University System of Georgia

1100 South Marietta Parkway
Marietta, Georgia 30060-2896

Southern Polytechnic State University is a comprehensive university in the University System of Georgia. Our academic, professional, outreach, and service programs embrace all aspects of technology, including the practical applied skills **(techne)** needed to solve today's real-world problems and the theoretical knowledge **(logos)** necessary to meet tomorrow's challenges. SPSU graduates are well prepared to lead the scientific and economic development of an increasingly complex state, nation, and world.

Our mission is to serve both traditional and non-traditional students at the undergraduate, graduate, and continuing education levels, in engineering and engineering technology, the sciences, applied liberal arts, business and professional programs. We work to develop the broader community's intellectual, cultural, economic, and human resources. Facilitated by our innovative faculty, dedicated staff, and supportive campus environment, our learning community empowers SPSU students with the ability and vision to transform the future.

About This Catalog

The statements set forth in this catalog are for informational purposes only and should not be construed as the basis of a contract between a student and this institution.

While the provisions of this catalog will ordinarily be applied as stated, Southern Polytechnic State University reserves the right to change any provision listed in this catalog, including but not limited to academic requirements for graduation and various fees and charges without actual notice to individual students.

Every effort will be made to keep students advised of such changes. It is especially important to note that it is the responsibility of the student to keep apprised of current graduation requirements for a particular degree program and current academic procedures.

Southern Polytechnic State University is an equal educational and employment opportunity institution and does not discriminate on the basis of race, color, sex, religion, creed, national origin, sexual orientation, age, or disability.

President's Message

Welcome to Southern Polytechnic

Southern Polytechnic is a place where students are educated for life and for leadership in an increasingly technological world. We prepare our students for their very first job after graduation, with the skills that make them highly

marketable and successful. We feel it is just as important that a Southern Polytechnic education also prepares students for the last job in their careers. Thus, our courses and programs are structured to enable men and women to adapt, grow, and continue to learn over the years, developing the leadership skills needed to implement the vision of a technological future.

Our vision statement describes us well:

"Southern Polytechnic State University is a comprehensive university with a unique purpose. Through a fusion of technology with the liberal arts and sciences, we create a learning community that encourages thoughtful inquiry, diverse perspectives, and strong preparation of our graduates to be leaders in an increasingly technological world."

"The university - faculty, staff, students, and graduates - aspires to be the best in the world at finding creative, practical, and sustainable solutions to real-world problems and improving the quality of life for people around the globe."

Students at SPSU learn skills beyond the essential technological and scientific knowledge that qualifies our graduates to contribute to some of the fastest growing fields in the nation. They also learn traditional liberal arts skills that enable them to think critically, communicate clearly and persuasively, solve problems collaboratively, and develop an international perspective in an increasingly global marketplace.

At Southern Polytechnic, we are proud of our faculty and staff. We are motivated and challenged by our students. We are excited for our graduates. We appreciate the positive, participatory relationships we enjoy with our community and with prominent leaders in business and industry who help shape the nature of our educational vision. We also appreciate your interest in our university.

Again, welcome to Southern Polytechnic. We invite you to make your next visit a personal one to our campus.

Dr. Lisa A. Rossbacher
President

General Information

Calendar

Fall 2014

13 August	Classes Begin
1 September	Labor Day Holiday
26-28 November	Thanksgiving Holiday (Faculty, Students)
1 December	Last Day of Classes
3-9 December	Final Exams
13 December	Commencement

Spring 2014

5 January	First Day of Classes
19 January	Martin Luther King, Jr. Holiday
2-6 March	Spring Break
27 April	Last Day of Classes for Spring
29 April - 5 May	Final Exams
11 May	Commencement

Summer 2014

12 May	First Day of Classes
25 May	Memorial day Holiday
3 July	Holiday

For a more detailed calendar, point your web browser to http://www.spsu.edu/registrar/calendarpointer.html

For Your Information

Admissions	678/915-7281
Dean of Students	678/915-4102
Financial Aid	678/915-7290
President	678/915-7230
Registrar	678/915-4200
University Relations	678/915-7351
Vice President for Academic Affairs	678/915-7206
Vice President for Business and Finance	678/915-7232
Vice President for Student and Enrollment Services	678/915-3720
Continuing Education	678/915-7240

For additional phone numbers and contacts, see the online Campus Directory

From outside the Atlanta Metro area (For Admissions Information Only) 800-635-3204
Southern Polytechnic State University
1100 South Marietta Parkway
Marietta, Georgia 30060-2896

Campus Directory

Southern Polytechnic State University has an online Campus Directory available to contact offices on campus. This directory is available online at directory.spsu.edu.

Student Rules and Regulations

The rules and regulations for Southern Polytechnic State University students are contained in catalog sections on Academic Regulations and Student Life Regulations. Rules and regulations governing student conduct may also be found in the Student Handbook. Each student is expected to be familiar with these rules and regulations. The student is also expected to be a law-abiding citizen and to obey the laws of the City of Marietta, Cobb County, the State of Georgia, and the United States.

Responsibility for Notices

Students are expected to be aware of the contents of all general notices. Students are also expected to keep the university apprised of their current mailing address and to check their SPSU e-mail frequently. All official notifications to the student body, groups of students, or individual students are issued by way of e-mail.

University Police and Crime Statistics

Southern Polytechnic is committed to a safe, healthy environment in which our students, faculty and staff can grow professionally and personally. The University promotes strong safety policies and prompt reporting and investigation of any actions or events that would harm the well being of any student, employee, or faculty member.

The University Police employs police officers who comply with certification, training, and all other requirements of the Peace Officers Standards and Training Council of Georgia. Our officers have arrest powers on Southern Polytechnic property and on any public or private property within five hundred yards of property under the control of the Board of Regents. Our officers conduct preventive patrols on campus including the residence halls, secure University-owned property, investigate reported crimes at the university, conduct educational programs and workshops to promote personal safety, and actively work to prevent and detect crime throughout the Southern Polytechnic community. Our disclosure report can be found at police.spsu.edu.

Accreditation

Southern Polytechnic State University is an accredited, coeducational, residential university offering associate, baccalaureate and master's degrees.

Southern Polytechnic State University is regionally accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC). Southern Polytechnic State University is accredited to award associate, baccalaureate and master's degrees. Contact the Commission on Colleges at www.sacscoc.org.

The Civil, Computer, Electrical, Industrial, Mechanical, and Telecommunications Engineering Technology programs are accredited by the Engineering Technology Accreditation Commission of ABET at www.abet.org.

The Civil, Construction, Electrical, Mechatronics, Mechanical, Software and Systems Engineering programs are accredited by the Engineering Accreditation Commission of ABET (www.abet.org).

The Bachelor of Science with major in Surveying and Mapping is accredited by the Applied Science Accreditation Commission of ABET (www.abet.org).

The Bachelor of Science with major in Computer Science, Bachelor of Science with a major in Information Technology, and the Bachelor of Science with a major in Computer Game Design and Development are accredited by the Computing Accreditation Commission of ABET (www.abet.org).

The Bachelor of Architecture program is accredited by The National Architectural Accrediting Board, Inc. (NAAB) at www.naab.org.

The Bachelor of Science program in Construction Management and the Master of Science in Construction Management are accredited by The American Council for Construction Education (ACCE) at www.acce-hq.org.

The Bachelor of Science program in Construction Management Facility Management Concentration is accredited by the International Facility Management Association (IFMA) www.ifma.org

The Master of Business Administration, B.S. in Management, B.A.S. in Management, and B.A. in Management are accredited by The Association of Collegiate Business Schools and Programs (ACBSP) at www.acbsp.org

Degrees and Certificates Offered

Southern Polytechnic State University offers a broad range of programs of study. In addition to the degree programs, SPSU also offers certificates in the following areas. Admissions requirements vary, depending on the certificate.

Bachelor of Arts

- • Computer Science, BA
- • English and Professional Communication, BA
- • Mathematics, Education Track, BA
- • New Media Arts, BA

Bachelor of Architecture

- • Architecture, BARCH

Bachelor of Apparel and Textiles Technology

- • Apparel and Textiles, BAT

Bachelor of Applied Science

- • Information Technology, BAS
- • Manufacturing Operations, BAS
- • Supply Chain Logisitics, BAS

Bachelor of Science

- • Biology, B.S.
- • Biology, Education Track, BS
- • Chemistry, BS
- • Chemistry, Education Track, BS
- • Civil Engineering Technology, BS
- • Civil Engineering, BS
- • Computer Engineering Technology, BS
- • Computer Game Design and Development, BS
- • Computer Science, BS
- • Construction Engineering, BS
- • Construction Management, BS

- • Electrical Engineering Technology, BS
- • Electrical Engineering, BS
- • Environmental Engineering Technology, BS
- • Environmental Science, B.S.
- • Industrial Engineering Technology, BS
- • Information Technology, BS
- • Information Technology, BS (Online) WebBSIT
- • International Studies, BS
- • Mathematics, BS
- • Mechanical Engineering Technology, BS
- • Mechanical Engineering, BS
- • Mechatronics Engineering, BS
- • Physics, BS
- • Physics, Electrical Engineering Concentration, BS
- • Physics, Mechanical Engineering Concentration, BS
- • Physics, Teacher Education Concentration, BS
- • Political Science, BS
- • Psychology, BS
- • Software Engineering, BS
- • Surveying and Mapping, BS
- • Systems Engineering, BS
- • Technical Communication, BS
- • Telecommunications Engineering Technology, BS

Associate of Science Transfer Degree

- • General Studies, A.S.

Non-Degree

- • Aerospace Engineering Minor
- • Apparel and Textiles Minor
- • Architecture Minor
- • Biology Minor
- • Chemistry Minor
- • Computer Game Design and Development Minor
- • Computer Science Minor
- • Construction Management Minor
- • Engineering Design Graphics Minor
- • Environmental Science Minor
- • Geographical Information Systems Minor
- • History Minor
- • Industrial Engineering Technology Minor
- • Information Technology Minor
- • International Studies Minor
- • Latin American Studies Minor
- • Logistics Minor
- • Manufacturing Engineering Technology Minor
- • Mathematics Minor
- • Nuclear Engineering Minor

- • Physics Minor
- • Political Science Minor
- • Pre-Law Minor
- • Professional Writing Minor
- • Psychology Minor
- • Public Policy Minor
- • Quality Principles Minor
- • Renewable Energy Engineering Technology Minor
- • Software Engineering Minor
- • Spanish Minor
- • Technical Communication Minor

Certificate

- • Apparel Product Development Certificate
- • Geographical Information Systems Certificate
- • Land Development Certificate
- • Land Surveying Certificate
- • Logistics Certificate
- • Production Design Certificate
- • Project Management Construction Certificate
- • Quality Principles Certificate
- • Spanish Professional Certificate (Undergraduate)

Other certificates may be available. Check our web site for additional information.

Admissions Information

General Information

Admission to Southern Polytechnic State University (SPSU) is made without regard to race, color, national origin, sex, sexual orientation, disability or age. Admission is based on a number of factors depending upon your admissions type of entry and previous educational experience. The admission requirements for the University have been developed in accordance with the rules and regulations of the Board of Regents for the University System of Georgia.

Falsification

Approval for admission is valid only for the term specified at the time of acceptance and does not imply that approval will be granted for a term not specified. The University reserves the right to withdraw admission prior to or following enrollment if the student becomes ineligible as determined by the standards of the University of the Board of Regents or if the student has falsified application materials.

Other Admission Requirements

SPSU reserves the right to require any applicant for admission to take appropriate standardized tests in order that the institution may have information bearing on the applicant's ability to pursue successfully the program of study for which the applicant wishes to enroll.

Special Students

Special students and all other students of classifications not covered in these policies shall be expected to meet all admission requirements prescribed by Southern Polytechnic State University.

Appeals

Appeals of the University's formal admission decision may be filed with SPSU's Director of Admission. Contact the Office of Admission for additional instructions on the appeal process.

Admission Procedures and Deadlines

General Information

All applications for admission to Southern Polytechnic State University must have all required credentials on file in the Admission Office by the application deadline date for the semester in which the applicant plans to enroll. The application deadline dates for each semester are as follows:

Semester	Priority Deadline Date
Summer	April 1
Fall	June 1
Spring	October 1

All international applicants are required to submit all admissions documents to the Office of Admission at least **three months before** the registration date of the semester in which the student plans to enroll.

Required Documents

Unless otherwise noted for a specific admission type/category, the application file is complete and ready for review when the Office of Admission (Southern Polytechnic State University, 1100 South Marietta Parkway, Marietta, Georgia 30060-2896) has received the following:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A $40.00 non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- Official scores on required college entrance tests (typically SAT or ACT. Some applicants may also be required to present TOEFL scores, or COMPASS scores)
- Official high school and college transcripts (mailed directly from those institutions)

Applicants with international credentials may be required to send their educational credentials to an approved SPSU professional evaluation service before being considered for admission.

Note: All new accepted applicants must submit a valid Certificate of Immunization to the SPSU Office of Admission.

Verification of Lawful Presence

In accordance with Board of Regents Policy 4.3.4 any student applying for in-state tuition will be required to provide validation of their lawful presence in the United States and proof of Georgia residency in order to be granted in-state tuition status.

Special Accommodations

SPSU does not discriminate on the basis of an individual's disability and is committed to providing students with full and equal enjoyment of services, facilities and goods on campus as required by law. If you are a student with a qualified disability and are in need of a reasonable accommodation, you must contact the Office of Disability Services. That office will provide you the necessary information and assistance to make your accommodation request.

Admission from High School

The Required High School Curriculum (RHSC), SAT/ACT scores, and the high school academic grade point average are all key factors considered in freshman admission decisions.

Required High School Curriculum

In order to be admitted, freshmen are required to complete the University System of Georgia's Required High School Curriculum (RHSC) requirements at either:

- A regionally accredited high school
- Or a University System recognized high school

A minimum of 17 RHSC units are required in the following subject areas:

Course	Units	Required Course Emphasis
English	4	Literature (American, English, World) integrated with Grammar and Usage and Advanced Composition Skills
Mathematics	4	Algebra I, Algebra II, and Geometry (Math 1, 2, and 3 for students who graduate from a Georgia Public School in 2012 or later) and a fourth year to include courses such as Advanced Algebra and Trigonometry, Algebra III, Pre-calculus, Discrete Mathematics, Calculus, AP Calculus, Statistics, IB Mathematics, Analysis
Science	4	Must include at least one lab course from Life Science and one lab course from the Physical Sciences

Social Science	3	Must include U.S. History and World History
Foreign Language	2	Must be in the same language and must emphasize speaking, listening, reading, and writing

Regular Freshman Admission Standards (Full Admission)

Regular freshmen are applicants who are recent high school graduates and who will be attending college for the first time.

SPSU's minimum requirements for admission as a regular freshman include the following:

- Graduation from
    - A regionally accredited high school
    - Or from a high school accredited by the Georgia Accreditation Commission
    - Or from a high school accredited by an approved University System of Georgia agency
    - Or from a public school under the authority of the State Department of Education
- Completion of the 17 required RHSC units.
- An academic High School GPA of at least a 2.5

Minimum scores on the ACT or SAT as follows:

Test	Minimum Score
SAT I Critical Reading	500
SAT I Math	500
ACT-English	21
ACT-Math	21

Limited Freshman Admission Standards

Limited Admission

The University System permits SPSU to admit a limited number of traditional freshmen each year who do not meet all the minimum requirements listed above, but whose records are sufficiently strong enough to show promise for success at the University.

SPSU's minimum requirements for limited freshman admission include the following:

- Graduation from:

- A regionally accredited high school
  - Or from a high school accredited by the Georgia Accreditation Commission
  - Or from a high school accredited by an approved University System of Georgia agency
  - Or from a public school under the authority of the State Department of Education
- Completion of the 17 required RHSC units
- Have an academic High School GPA of at least a 2.5
- Minimum scores on the SAT or ACT as follows, and a combined score of 950:

Test	Minimum Score
SAT I Critical Reading	450
SAT I Math	450
ACT-English	18
ACT-Math	18

A freshman applicant may apply as early as the end of his or her junior year in high school. After the receipt of all required documents, (juniors should include their planned senior year subjects on their high school transcript), the Admission Office will notify the applicant of his or her admission status.

Alternatives for Home Schooled Applicants and for Others

Applicants, including home schooled students, who have not graduated from an approved or accredited high school, may validate the RHSC requirement in an alternative way. These students should submit a portfolio of high school level work that substantiates completion of required high school curriculum courses equivalent to those listed in the RHSC table above. Please see the admissions office for further information about the portfolio. Minimum SAT or ACT test scores for these students are (valid for admission during the 2012-2013 school year only).

Test	Score
SAT I – Critical Reading	500
SAT I – Math	500
SAT I – Total	1120
ACT English	21
ACT Math	21
ACT Composite	24

Joint Enrollment/Early Admission/The ACCEL Program

Southern Polytechnic State University recognizes the need to provide academically talented high school students with opportunities for acceleration of their formal academic programs. There are three programs available to talented students:

Joint Enrollment

A joint enrollment student continues his/her enrollment in high school as a junior or senior and enrolls in courses for college credit.

Early Admission

An early admission student enrolls as a full-time college student following completion of the junior year in high school.

The ACCEL Program

The ACCEL Program is a joint enrollment program that allows high school, typically juniors and seniors, to take approved college courses. Courses earned through the ACCEL Program carry both college credit and high school Carnegie unit credit. ACCEL is a state funded program that provides dual enrollment tuition assistance for qualified public and private high school students. Students must be at least 16 years old, meet a certain set of requirements and submit necessary paperwork to participate. Students interested in this program should contact their High School Counselor to obtain the necessary paperwork.

Admission Requirements

- Admission requirements for joint enrollment or early admission are:
- Minimum scores of 530 on the SAT I Critical Reading (21 ACT-English) 530 on the SAT I Math (21 ACT-Math)
- Minimum academic high school GPA of 3.0
- On-track for completion of RHSC requirements by the end of the senior year in high school
- Written consent of the parent or guardian (if student is a minor)

Students who do not necessarily meet all of the above criteria but who demonstrate very high academic abilities through their SAT performance may be permitted to enroll in appropriate college courses. Specifically:

- Students with a score of at least 700 on the SAT I Critical Reading (31 ACT-English) may be permitted to enroll in courses that require advanced verbal ability.
- Students with a score of at least 700 on the SAT I Math (31 ACT-Math) may be permitted to enroll in courses that require advanced mathematics ability.
- Students with a total score of 1370 (math and critical reading) on the SAT I (31 ACT-Composite) may be permitted to enroll in appropriate courses.

Advanced Placement Opportunities

Southern Polytechnic State University welcomes students who have pursued accelerated academic course work while in high school or through recognized national standardized programs. Such programs include:

- College Level Examination Program (CLEP)
- College Board's Advanced Placement (AP)
- International Baccalaureate (IB)
- DANTES (D.S.S.T.)

Students may receive college credit for certain courses based on scores received in the above tests. The criteria for credit awarded under these testing programs is available on this site: www.spsu.edu/undergraduate/admission/apclepibcourses.htm. Please contact the academic department that sponsors the course before taking a any exam not listed to ensure that the exam has been approved for credit. Official score reports for AP and IB must be sent from the testing agency to SPSU to be considered for credit.

Please note that in order to receive credit for HIST 2111, HIST 2112 or POLS 1101 and satisfy the legislative requirements for graduation, the student must also complete HIST 2911 with a grade of "C" or better.

Admission from Other Colleges

General Information

Transfer applicants for admission are students who have earned college credit at regionally accredited collegiate institutions and wish to transfer to SPSU to pursue a degree.

Students planning to transfer from another college must have transcripts sent directly from all colleges attended to our admissions office without regard to the applicant's wishes concerning transfer credit for courses.

The application deadline dates for each semester are as follows:

Semester	Deadline Date
Summer	April 1
Fall	June 1
Spring	October 1

Required Documents

Unless otherwise noted for a specific admission type/category, the application file is complete and ready for review when the Office of Admission (Southern Polytechnic State University, 1100 South Marietta Parkway, Marietta, Georgia 30060-2896) has received the following:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University

- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- Some applicants may be required to present TOEFL scores, or COMPASS scores
- College transcripts (mailed directly from colleges attended)

High school transcripts and SAT I or ACT scores are generally not required for applicants with 30 or more semester hours of acceptable transfer credit. If there is any doubt that you have the required transfer work, you should submit these documents as well.

Transfer applicants with international credentials may be required to send their educational credentials to an approved SPSU professional evaluation service before being considered for admission.

Transfer Admission

Transfer Freshman Admission Standards

Applicants with fewer than 30 semester hours of acceptable transfer credit will be considered under the following policies:

- Applicants must meet the same admission requirements as freshman admitted from high school.
- Applicants must have completed and exited all required remedial courses at their previous institution.
- Applicants must be in good standing.
- Applicants must have at least a 2.0 cumulative college GPA.

Transfer Admission Standards for Sophomores and Upperclassmen

Transfer applicants with sufficient transferable hours to be classified as a sophomore, junior or senior at SPSU will be considered under the following policies:

- Applicants must have completed and exited all required remedial courses at their previous institution.
- Applicants must be in good standing.
- Applicants must have at least a 2.0 cumulative college GPA.

Award of Transfer Credit

Transfer Credit, Policy for Acceptance of

Transfer credit is awarded in accordance with the policies of the University System of Georgia, accrediting agencies, and SPSU. Courses under consideration for transfer credit are evaluated by the department chair whose department is primarily responsible for the course.

Transfer credit should not be confused with course substitutions. A course might not be equivalent to any course offered at SPSU, but still have enough content to be considered as a substitute for a course within a degree program. In this case, transfer credit would be awarded for free elective hours and a course substitution petition would be initiated and processed through the curriculum committee.

To be considered for transfer credit, courses must normally:

- Represent college or university-level work
- Have been completed with a grade of "C" or better
- Have been taken at institutions holding college-level accreditation by a United States regional accrediting authority.
- Be equivalent to courses at SPSU with regard to
    - Credit hours
    - Course content
    - Level of instruction
- Not have been in a subject for which the student received a failing grade at SPSU

Special considerations for transfer of University System of Georgia (USG) Core Curriculum courses:

Students transferring from one USG institution to another are protected by USG policy governing the transfer of core courses. See section 2.4.9 of the USG academic affairs handbook for details. Students completing courses in areas A, B, C, or E will be given full credit when transferring to a different institution. Students completing courses in areas D or F will be given full credit when transferring to a different institution if the major field of study remains the same.

Grades of "D" are transferable for all USG core courses except:

- ENGL 1101 requires "C" or better
- ENGL 1102 requires "C" or better
- MATH 1111 requires "C" or better
- MATH 1113 requires "C" or better

If students transfer the entire USG Core (60 semester hours) for a given major (without changing majors), the total credit hours required for the transfer student's baccalaureate degree at SPSU will not exceed the total credit hours required for a student who completed the USG Core at SPSU in that same major. Students who feel they have not been given appropriate consideration for the transfer of USG core courses should appeal to the core chief transfer officer.

Evaluation of Courses for Transfer Credit

In order for SPSU to perform an evaluation of transfer credits, the student

- must provide official transcripts containing all the courses being considered,
- must be accepted for admission to SPSU,
- must provide course descriptions, syllabi, or other documentation on course content if requested by SPSU, and
- may be tested for proficiency in courses that were not USG Core courses.

The amount of transfer credit awarded can be limited by:

- Residency requirements defined in Academic Regulations
- The applicability of transferring courses to the chosen major
- Performance of the student during proficiency evaluations

Responsibility for transfer credit decisions at SPSU:

The Student has responsibility for providing complete and correct information (including course descriptions, syllabi, and other required documents).

The Chair of the department at SPSU in which the subject is taught has responsibility for determining whether transfer credit will be awarded.

The Chair of the student's major program of study has responsibility for determining whether transfer courses are applicable to that degree program.

The Registrar is responsible for determining restrictions and limits on amounts of transfer credit that can be granted.

The Registrar has final authority in checking compliance with university-wide academic standards and graduation requirements.

The core chief transfer officer is the contact person for students, faculty, advisors, records and admissions personnel, and academic administrators when problems related to transfer of Area A–F course work across USG institutions occur.

Additional Information for Students Transferring from Outside the University System of Georgia

All undergraduate students must successfully complete course work or satisfactorily pass examination(s) on the history of the United States, history of Georgia, United States Constitution and Georgia Constitution prior to receiving a degree from a USG institution. SPSU satisfies this requirement by embedding an examination in certain core courses. Students who transfer to SPSU from an institution located outside the University System of Georgia and who have completed U.S. History or American Government must complete HIST 2911 to satisfy the United States and Georgia history and Constitution requirements.

Transfer Credit for Courses Earned Outside the United States

Transfer credit for courses completed at institutions of higher learning outside the United States shall be subject to the same criteria as those courses earned in the United States, but outside the University System of Georgia.

In addition, the student is also responsible for the following:

- International transcripts must be evaluated by an evaluation service. Evaluation services must be a current member of the National Association of Credential Evaluation Services (NACES).
- International course descriptions must have been translated by a recognized translation service and certified as a true and correct translation.

· The institution at which the credit was earned:

- Must have been evaluated and endorsed/certified/accredited by a nationally-known evaluation agency, or have a well-established international reputation for quality instruction
- Must be offering degrees and course work at the college or university level

Technical College System of Georgia (TCSG) Transfer Program

Southern Polytechnic implemented a system-wide articulation with the Technical College System of Georgia (TCSG). This articulation will provide the opportunity for SPSU to offer a range of B.S. and B.A.S. level technological programs on a statewide basis, with the TCSG institutions as our partners. The initial set of programs were made available in Fall 2009 and include pathways from approximately thirty TCSG Associates degrees into Information

Technology (B.A.S.), Manufacturing Operations (B.A.S.), Business Management (B.A.S.), Supply Chain Logistics (B.A.S.), Electrical Engineering Technology (B.S.), Industrial Engineering Technology (B.S.), Mechanical/Electromechanical Engineering Technology (B.S.), and Surveying and Mapping (B.S.). (Future offerings are being considered in Health Information Technology (B.A.S.)).

In this articulation, the TCSG institution will offer roughly the first two years of the programs including some of the USG core, and SPSU will offer the second two years of the programs. The TCSG portion will be offered mainly "live" on their campuses, with some online offerings. The SPSU portion will be offered in a format where most of the content is offered online with laboratories being offered low-residency. In a low-residency laboratory, students will take groups of laboratory experiments on two or three Saturdays during a semester, either on the SPSU or at a designated TCSG campus. The curricula of the TCSG institutions will be aligned with the SPSU curriculum to allow the maximum degree possible of direct transferability.

Articulation agreements have been signed by all of the SACS-COC accredited TCSG college presidents as well as the leadership at the TCSG system office.

If you would like more information on admission, program offerings and participating TCSG's, see tcsg.spsu.edu. Current majors include:

- Manufacturing Operations
- Supply Chain Logistics
- Information Technology
- Mechanical Engineering Technology
- Electrical Engineering Technology
- Industrial Engineering Technology

Special Admission Categories

SPSU has a number of special categories other than those for freshman and transfer applicants.

Nontraditional Freshman Admission Standards

Nontraditional freshman are those students who:

- Have not attended high school or college within the previous five years
- Have earned fewer than 30 transferable semester hours of credit
- Hold a high school diploma from an accredited secondary school or a GED certificate which satisfies the minimum requirement of the State of Georgia

Applicants eligible for review in this category are exempted from the SAT/ACT and Required High School Curriculum requirements; however, all other admission requirements must be met. These students will be required to take the COMPASS Exam and score 80 on the Reading, 74 on the Writing and 43 on the Algebra exams. The COMPASS Exam is given on the campus of SPSU.

Transient Students

Transient students are those students attending Southern Polytechnic State University for a limited period of time, usually one semester, and who are expected to return to their previous college at the beginning of the next semester.

Transient credit earned at Southern Polytechnic State University may not be applied toward the residency requirement.

A transient applicant must submit to the Admission Office:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A transient letter from the Registrar of his or her college (good for the semester of application only)
- The transient letter must indicate that the applicant is in good standing and eligible to return to the home institution
- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)

It is the responsibility of the transient applicant to determine (with assistance from his or her home college) the course(s) he or she should take on the SPSU campus.

Post-Baccalaureate/Non-Degree

The non-degree category exists for those students who have previously earned a baccalaureate degree from a regionally accredited institution and who wish to enroll in undergraduate courses for personal or professional reasons instead of degree completion.

Students applying for this non-degree status must submit to the Admission Office:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- An official transcript from the institution that awarded the initial degree

Students who are admitted under this category and later decide to pursue a degree must furnish official transcripts from all colleges attended and meet transfer admission requirements.

Audit Students

Persons not seeking a degree from Southern Polytechnic State University yet wishing to gain knowledge from courses taught here may apply for admission as audit students.

An audit student is required to file:

- A completed Undergraduate Application for Admission to Southern Polytechnic State University
- A non-refundable application processing fee (check or money order made payable to Southern Polytechnic State University)
- Official proof of graduation or official copy of scores on the GED test

An auditor will receive grades of "V" and will not receive transferable credits. In order to become a regular student, auditors must meet regular entrance requirements. An audit student may not change to regular student status after beginning a course as an auditor. The audit grade "V" may never be used as a basis for gaining credit in any course.

Students Sixty-two Years of Age or Older

Citizens of the State of Georgia who are 62 years of age or older may attend Southern Polytechnic State University without payment of fees (except for supplies and laboratory or shop fees) **when space is available** in a course scheduled for resident credit.

To be eligible for participation under this amendment to the Georgia Constitution, such persons:

- Must present a birth certificate or other comparable written documentation of age to the Registrar's Office at the time of registration
- Must meet all University System and Southern Polytechnic State University admission requirements,
- Must meet all University System, Southern Polytechnic State University, and legislated degree requirements if they are degree-seeking students

Undergraduate Certificate Program Admission Requirements

Applicants applying for Undergraduate Certificate programs must meet the same admissions requirements as those who are seeking an undergraduate degree.

International Students

Admission of Students with Non-U.S. Academic Credentials

Admission of students whose secondary education was completed outside of the United States system of education may be considered for admission with:

- Acceptable foreign credentials
- English language proficiency as described below

Academic Admissibility of Freshman Students Foreign Credentials

Students seeking to gain admission as freshmen must have:

- Academic performance as described by a certificate, diploma, or other documents generally equivalent to U.S. college preparatory studies
- Official or certified true copies of all secondary school records, with a certified English translation

(The University reserves the right to require foreign credentials to be evaluated by an approved professional foreign credential evaluation service at the expense of the applicant.)

English Proficiency

Students whose first language is not English and whose language of instruction throughout secondary school was not in English are required to demonstrate English proficiency.

Non-native speakers of English who:

- Transfer from institutions of higher education outside of the U.S. where English was not the language of instruction

- Have less than 30 semester hours of college credit

May be exempted from the SAT requirements; however, they must take the following tests with minimum scores as indicated:

Test	Minimum Score
Paper-based TOEFL or	550
Computer-based TOEFL or	213
Internet-based TOEFL	79
IELTS	6.5
AND	
COMPASS	80 Reading
	74 Writing
	43 Algebra

The COMPASS examination is administered on the campus of SPSU.

Academic Admissibility of Transfer Students Foreign Credentials

Students seeking to gain admissions as transfer students must have:

- Academic performance equivalent to a 2.0 transfer grade point average from all colleges/universities previously undertaken by the student
- Official or certified true copies of all secondary school records, with a certified English translation is required

(The University reserves the right to require foreign credentials to be evaluated by an approved professional foreign credential evaluation service at the expense of the applicant.)

Additional Requirements for International Applicants

In addition to meeting the regular admission requirements, international applicants needing a student visa (F-1 or J-1) must complete a Financial Affidavit. The Financial Affidavit must show ability to meet the financial obligations of tuition, fees and living expenses before an I-20 or acceptance letter will be issued.

Current (less than one year old) letters of financial support must accompany the Financial Affidavit. Financial Affidavit forms are available in the Admission Office.

All international students must purchase medical insurance made available through Southern Polytechnic State University.

Sources for Test Scores and Required Forms

SAT I and II Tests	ACT Tests
College Entrance Examination Board Box 6200 Princeton, NJ 08541 or register online at http://www.collegeboard.com SPSU's Institutional Code: 5626	American College Testing Program P.O. Box 414 Iowa City, Iowa 52243 or register online at http://www.act.org SPSU's Institutional Code: 0865
SAT I and II Tests	**ACT Tests**
College Entrance Examination Board Box 6200 Princeton, NJ 08541 or register online at http://www.collegeboard.com SPSU's Institutional Code: 5626	American College Testing Program P.O. Box 414 Iowa City, Iowa 52243 or register online at http://www.act.org SPSU's Institutional Code: 0865
Admission Application & Immunization Forms	**TOEFL Exams**
SPSU Office of Admission 1100 South Marietta Parkway Marietta, GA 30060 or on SPSU's Website: http://www.spsu.edu	Educational Testing Services P.O. Box 6151 Princeton, NJ 08541, USA or http://www.toefl.org SPSU's Institutional Code: 5626

Financial Aid Information

Steps to Apply for Financial Aid and Cost of Attendance

Usually, step one in applying for financial aid is to fill out the Free Application for Federal Student Aid (FAFSA), which is available online at www.fafsa.ed.gov

Although applications are processed until all federal funds are expended, students who apply by the March 1st deadline have a greater chance of receiving financial aid than those who apply late.

Aid awarded to a student one year does not mean that he or she is eligible to receive aid in a subsequent year, unless the student continues to demonstrate need as defined by the U.S. Department of Education. An application, each year, is required to continue to receive financial aid.

Information concerning financial aid may be obtained by writing to:

Director of Financial Aid
Southern Polytechnic State University

1100 South Marietta Parkway
Marietta, Georgia 30060-2896

or by calling the Office of Scholarships and Financial Aid at 678/915-7290 or 800/635-3204, or email at finaid@spsu.edu.

Cost of Attendance

Average first-time-full-time Cost of Attendance for an on campus student 2014-2015

Cost of Tuition and Mandatory Fees:

Tuition and Fees $6,944
Room and Board $9,130

Cost determined by Lifestyle:

Books and Supplies $1,700
Personal Expenses $1,700
Transportation $1,200
Loan Fees $60

Total Estimated Cost of Attendance: $20,734

Types of Financial Aid

- The Federal Pell Grant
- The Federal Supplemental Educational Opportunity Grant (FSEOG)
- The Federal Work Study Program (FWSP)
- The Federal Direct Loan Program

Depending on financial need, the maximum that a student may borrow from the combined Subsidized and Unsubsidized Direct Loan Program is:

Class	Dependent	Independent
Freshman	$5,500	$9,500
Sophomore	$6,500	$10,500
Junior/Senior	$7,500	$12,500

The total undergraduate loan amount is $31,000 for Dependent students and $57,500 for Independent students.

The PLUS Direct Loan Program enables parents with good credit histories to borrow funds for each child who is enrolled at least half-time and is a dependent student. Students whose parents are denied a parent plus loan are eligible for additional loan funds.

The HOPE Scholarship Program provides financial assistance to students attending Georgia post-secondary institutions who achieve academic excellence throughout their high school studies.

To be eligible for HOPE, a student must:

- Be a Georgia resident
- Have graduated from a Georgia High School in 1993 or later
- Have earned a cumulative grade point average of at least 3.0 in all academic classes
- And meet other regulatory requirements

Payment for Non-credit Courses

For a student to receive financial aid funds for remedial work, the course work must be necessary for the student to pursue the eligible post secondary program. Students may not receive financial aid funds to pay for courses that they audit.

Satisfactory Academic Progress

Federal law requires students receiving federal student aid to maintain satisfactory academic progress as defined by the institution. The Satisfactory Academic Progress (SAP) requirements are separate from the regulations governing academic probation and suspension.

Southern Polytechnic State University's SAP requirements include:

- a maximum time frame requirement,
- a completion rate requirement, and
- a cumulative grade point average requirement.

Aid recipients must meet each of the three in order to be considered to be making SAP and to continue to receive financial aid.

Maximum Time Frame Requirement

Financial aid recipients must complete their program within 150% of the published length of the program. To figure the maximum time frame:

- First check the catalog to determine the number of credit hours required for graduation in a particular major.
- Second, multiply the required number of credit hours by 150%.
- Third subtract the number of credits transferred in toward the major.

Example: A student majoring in Construction transfers in 50 semester credit hours. It takes 128 semester hours to earn a degree; therefore, the student's maximum time frame is (128 x 150%) - 50 = 142. This student's financial aid eligibility is exhausted once he or she has attempted 142 semester hours at SPSU.

Completion Rate Requirement

In order to complete a program of study within the required time frame, the aid recipient must complete 67% of the hours attempted to date at SPSU. Credit hours attempted will be cumulative and will include all hours in which the student was enrolled at the end of the official drop/add period each academic term and received a grade of A, B, C, D, F, W, WF, I, IP, S, and U.

Cumulative Grade Point Average Requirement

Undergraduate students receiving financial aid must maintain a cumulative grade point average (GPA) at or above the 2.00 minimum required for graduation. Graduate students receiving financial aid must maintain a cumulative grade point average at or above the 3.00 minimum required for graduation. The cumulative grade point average will be computed by dividing the number of quality points earned by the total credit hours attempted for which the student received grades of A, B, C, D, F, WF, or I. No quality points are earned for an F, WF, or I.

How Often Will SAP Be Checked?

Percentage completion rates and cumulative GPA requirements will be monitored at the end of each semester. If a student is not making SAP at the end of any term, they will be placed in one of two categories:

Financial Aid Probation

Students with a GPA of less than the required 2.00 and/or Students with a completion rate less than the required 67%.

Financial Aid Suspension

Any student on financial aid probation and still not making SAP.

Students on Financial Aid Probation may receive financial aid. If the student does not achieve the required completion rate and cumulative GPA requirement by the end of the probationary term, he/she will be placed on Financial Aid Suspension until the requirements are met. Students on Financial Aid Suspension may not receive financial aid.

Financial Information

Registration and Fee Payment

SPSU offers multiple registration periods, each with an assigned fee payment deadline, for currently enrolled students to give them the opportunity to secure a schedule for a coming term.

The registration process is not complete until payment of tuition and fees is completed. Students who have signed an official award letter, (which signifies acceptance of the financial aid) and have registered for classes are assumed to be students who will attend classes.

The fee payment deadlines for each registration period are published each term in the academic calendar and on the SPSU website at www.spsu.edu/tuitionfees.

Failure to pay tuition and fees by the published deadline date can cause the cancellation of your registration.

Payment of fees and other charges may be made with:

- Cash
- Checks
- Approved financial aid
- Approved Credit cards

Registration fees may be paid on the SPSU web site using credit cards (except VISA). On-line transactions are fully encrypted for the safety of both the student and the university.

Students who register for courses and pay appropriate fees using any acceptable method of payment are considered enrolled and space is reserved in the class(es) for the duration of the term.

Students are encouraged to register and pay tuition and fees as early as possible to avoid the risk of losing their schedules.

All payments returned to the University due to insufficient funds are subject to a $30.00 or 5% of the face value returned check fee. Any outstanding returned check payments will be turned over to either a collection agency or the State Attorney General's Office for further legal collection action. All accounts turned over to a third party for legal collections will be subject to an additional collection cost (in addition to the original debt owed to the University).

Other Fees

Tuition and Fees

Tuition and fees vary according to a student's starting term and status. For a complete listing of current tuition and fees, please visit www.spsu.edu/tuitionfees. At times, additional fees can be charged over and above the fees listed in this catalog.

Academic Credit by Examination

Students who wish to attempt academic credit by examination shall be charged a testing fee of $50.00. An official receipt from the Business Office must be presented prior to taking the examination. Acceptance of the fee from a student does not imply that the credit by examination has been approved by the university. All requests for credit by examination are subject to approval by the academic department and by the Registrar.

Transportation Fee

Students who are currently enrolled are charged a transportation fee to cover the cost of the maintenance of the transportation infrastructure including parking lots, sidewalks, overhead covers, and other amenities, and may register a vehicle for parking on campus without further cost. For additional information and a copy of university parking regulations, contact the University Transportation.

Graduation Fee

Every student receiving a degree must pay a graduation fee of $40.

International Student Health Insurance

Based on the guidelines provided by the American College Health Association and NAFSA: the Association of International Educators, Southern Polytechnic State University requires international students on F-1 and J-1 visas to purchase the endorsed SPSU International Student Insurance policy. Payment of this fee is mandatory and should be paid directly to the Business Office along with payment of tuition and miscellaneous fees. Purchase of this insurance policy is mandatory each semester.

Refunds

The Board of Regents of the University System of Georgia and the Department of Education establishes the refund policy for the university. The refund schedule is published on the Tuition & Fees site at www.spsu.edu/tuitionfees/refundinfo.htm.

Refunds of fees and charges will be made only upon official withdrawal from all classes through the Registrar's Office. A student who partially withdraws (withdraws from some classes, but is still registered in other classes) after the official drop/add period does not receive a refund.

Where applicable, any refunds resulting from unearned financial aid will first be returned to the Title IV programs, other sources of aid, and/or finally to the student. The student must repay all funds to the university that are determined to be "unearned financial aid" that resulted from the calculated refund.

Residency Classification for Fee Payment Purposes

A person's legal residence is his or her permanent dwelling place. It is the place where he or she is generally understood to reside with the intent of remaining there indefinitely and returning there when absent. There must be a concurrence of actual residence and of interest to acquire a legal residence.

Because a proportion of financial support for the operation of public institutions of higher education in Georgia comes from the citizens through the payment of taxes, the determination of whether a student is classified as a resident or a nonresident of the state is a significant matter. The fees paid by resident students cover only a portion of the total cost of their education in the University System. Therefore, Georgia taxpayers are contributing part of the necessary funds to provide quality education for the citizens of the state.

Students are responsible for registering under the proper residency classification. Any student classified as a nonresident who believes that he or she is would like to be reclassified as a legal resident may petition to the Registrar's Office for a change of status.

The Board of Regents establishes all rules regarding residency classification. For additional information visit this site: www.usg.edu/regents/policymanual/400.phtml

Student Services

Bookstore

The Southern Polytechnic State University bookstore is located on the lower level of the Student Center. In addition to new and used textbooks, you can also purchase software, reference books, school supplies, engineering supplies, calculators, SPSU apparel, greeting cards, health and beauty aids, drinks, and snacks.

On the last day of registration and the first week of classes, the bookstore is open for extended hours.

Please visit us to find more information and purchase your books online at www.spsu.edu/bookstore.

Career and Counseling Center

Counseling Services

The Career and Counseling Center offers a variety of counseling services to help students succeed. The Center provides counseling for personal, academic, and career concerns.

Personal concerns such as anxiety, depression, relationship problems, low self-esteem, low self-confidence, and communication issues can make it very difficult for students to gain the most from the university and from their classes. Professional counselors provide time limited **individual and/or group sessions for students** seeking confidential assistance with these and other personal issues.

Part of the career development process involves increasing self-understanding in such areas as values, life goals, interests, and skills. **Counselors can help students increase their self-understanding and learn how to match their personal characteristics with the work environments that a university education makes possible for them.**

Academic concerns center on more effective time management, study skills and dealing with test anxiety. Counselors can assist students in identifying deficiencies in these areas to make the overall academic experience more successful. Many students find university work more difficult than they expected and find that it strains their abilities.

Counselors can assist students in developing skills to manage stress, overcome test anxiety, improve test-taking strategies, enhance memory and better understand their learning style. The Career and Counseling Center provides a variety of assessments to assist students in clarifying and/or confirming their goals.

Counselors provide outreach programs on many topics, including stress management, anxiety, depression, relationship building, procrastination and other student concerns (a detailed list can be found on the Center's website at www.spsu.edu/counselingservices/index.htm.)

All counseling services are **free of charge**, confidential, and **are available by appointment**. Counseling staff members are also available for consultation with SPSU faculty and staff who are concerned about specific situations and/or individuals.

Career Services

The Career and Counseling Center provides job search assistance for graduates and for students seeking full-time, part-time, temporary and on-campus employment. The Center provides assistance to students in preparing for the job search and obtaining employment suited to their career goals and aspirations, but can never guarantee employment for any student or graduate. Services offered include:

- Assisting in resume preparation
- Offering career search workshops and mock interviews
- Access to Jobs and career database (Career Link)
- On-campus interviews **and/or information sessions**

Students are encouraged to make use of career services as early as possible during their stay at Southern Polytechnic. **Degree candidates should begin the job search process at least two semesters prior to their graduation.**

On-Campus Employment

There are two kinds of on-campus positions for students: College Work Study (from funds awarded by the Financial Aid Office) and Student Assistants (from funds that are allocated to the department). Undergraduate students seeking on-campus employment should begin their search by registering in the Career Link database. International students should begin the job search process in the ATTIC.

Alumni assistance: Job search assistance for alumni includes web registration in the **CAREER LINK** (jobs) database on the Center's web page. Alumni may attend any skillshop sessions offered by the Center and career fairs sponsored by the Center.

Experiential Education (Cooperative Education and Internship)

Southern Polytechnic State University offers it's students the opportunity to gain valuable work experience directly related to their academic majors through a University sponsored experiential education program. Students interested in either program should attend an orientation session or should complete the online orientation session (dates and links posted on the Career and Counseling Center's website).

Benefits of participating in Cooperative Education or an Internship include:

- Providing career related hands-on work experience
- Earning a competitive salary for school and tuition expenses
- Learning the company culture
- Networking with professionals in your field
- Helping get your foot in-the-door for full-time employment
- Developing self-confidence
- Establishing valuable contacts for letters and references
- Gaining practical experience in the work environment
- Helps students in their career decision making process
- Provides substantial support for education expenses

Cooperative Education (Co-op)

Co-op is founded on the principle that learning takes place through practical experience as well as through academic achievement. Students participating in the co-op program alternate school and work.

Co-op students are required to follow all guidelines set forth by the Career and Counseling Center, as well as the rules and regulations of the University. In addition to university requirements, students must meet any additional co-op requirements set forth by the co-op employer. Students unable to maintain university or company co-op requirements may be given one probationary term to correct deficiencies before being withdrawn from the co-op program.

The Career and Counseling Center refers students to employers after they have been approved as a co-op applicant (Note that acceptance as a co-op applicants does not guarantee a student's employment in a co-op position). The employer has the final decision regarding offering co-op employment. Upon acceptance of a co-op position, the student is expected to remain with their co-op employer for a minimum of three (3) co-op work terms. In addition to Career Services referrals, co-op participation can also be started through student self-referral. Students and employers must meet program requirements and guidelines (contact program coordinator for details).

Students with metro-Atlanta co-op assignments may live in Southern Polytechnic State University housing. In addition, students with local co-op work assignments are eligible to participate in all co-curricular, intramural, and health service activities on campus with the payment of the regular student athletic, activity, and health fees. Although no credit is awarded (students receive a grade of 'S' or 'U'), the university views co-op students as active, continuing, full-time students during their periods of approved work experience.

Although neither the student nor the employer makes a commitment for full-time employment upon completion of the co-op program, many SPSU co-op students are offered career employment with their co-op employers. Satisfactory completion of both requirements for graduation and co-op guidelines make an undergraduate student eligible to receive recognition for participation in the co-op program on their Southern Polytechnic State University diploma and academic record.

Internship Program

The Southern Polytechnic State University Internship program is a short-term or time-limited work experience in a professional environment. It is designed to enhance academic, personal, and professional development and will assist students in making a smooth transition from the classroom to the world of work, and to provide students with insight about potential careers. Usually, an internship is a one-time experience for a student who has attained at least some academic preparation in a professional field.

Co-op and Internship Eligibility and Requirements for Undergraduate Students

- Be a registered, full-time student at the time of application to the program and during the semester prior to going to work (i.e., carry at least 12 hours fall and spring and 6 hours during the summer)
- Have and maintain a minimum 2.00 GPA (many employers require higher averages)
- Have completed at least 24 semester hours of academic credit toward their degree
- Must have completed at least one semester at SPSU
- Attend an orientation session (can be online) and meet with the program coordinator, and
- Co-op applicants must commit to participate in a minimum of three (3) alternating co-op work terms with the same employer

Students must be fully authorized to work in the United States to participate in the co-op program.

International Students

Must obtain written eligibility authorization from the International Services Coordinator in the ATTIC before beginning **EACH** working assignment. Due to the INS regulations, International students are not permitted to Intern more than one and a half-academic years for undergraduates and one academic year for graduates. Once an Internship is obtained, International students **MUST** return to the International Services Coordinator to complete additional paperwork. International students failing to do so will be **DROPPED** from the Internship Program.

Dining Services

There are four food service facilities on campus. Stingers Restaurant is the home of the University's board plan operation. There are 3 retail operations on campus The Grill (located on the lower level of the student center), Mondo's Sub Shop (located on the first floor of the Atrium Building), and Spork (located near the Housing Office). Catering and Concession services are provided by Chartwells Food Service.

For more information go to www.dineoncampus.com/spsu/

Emergency Locator Service

Emergency assistance in locating a student is provided by the Vice President of Student and Enrollment Services Office at 678/915-3720 from 8:00 a.m. until 5:00 p.m., Monday through Friday. The University Police Department provides emergency assistance in locating students on weekends and after 5:00 p.m. on weekdays at 678/915-5555.

If the University Police determine that a student (for whom a missing person report has been filed) has been missing for more than 24 hours, then within the next 24 hours they will:

- Notify the individual identified by the student to be contacted in this circumstance;
- If the student is under 18 years old, notify a parent or guardian; and
- In cases where the student is over 18 and has not identified a person to be contacted, notify appropriate law enforcement officials.

Extended University

Extended University (EU) is an administrative unit reporting to the Vice President for Academic Affairs. The mission of EU is to provide services to SPSU, the business community and the community at large by extending, enhancing and expanding the traditional teaching, scholarship and service roles of the university to new clients, in new formats and through the infusion of new technologies. Extended University includes a variety of programs and service units that are described here below. For more information regarding these programs and services, contact the EU Dean's Office at 678/915.7338 or stop by J-377.

Continuing Education Center (CEC)

The Continuing Education Center is responsible for providing all non-credit professional continuing education instruction sponsored by the university. CEC sponsors open enrollment programs in computing, engineering, business, quality, and communications. CEC also offers customized corporate training. CEC Certificate Programs feature a sequential set of courses designed to provide a body of knowledge in selected areas. Currently available certificates include:

- Business Intelligence
- AutoCAD Professional Certification
- CISCO Certified Network Associate (CCNA)
- Professional Project Management Certificate Program
- Lean Six Sigma Certification Training
- Accelerated Training in Healthcare Information Technology

Call 678/915-7240 for additional information or check the CEC web site at www.spsu.edu/cec.

Southern Polytechnic Applied Research Corporation (SPARC)

The Southern Polytechnic Applied Research Corporation (SPARC) provides support to Southern Polytechnic faculty in research, development and the application of technology within their areas of expertise. This support includes the identification of opportunities, development of proposals and the administration of grants and contracts upon award. The Applied Research Corporation is committed to providing growth opportunities for faculty and students and establishing Southern Polytechnic State University as a leading center of applied technology. For more information go to www.spsu.edu/sparc.

Office of Sponsored Programs (OSP)

The Office of Sponsored Programs has overall responsibility for the administration of grants, contracts and sub-awards, as well as compliance with state and federal regulations. Pre-award services include identifying funding opportunities and working with faculty to prepare proposals for submission. Post-award activities include tracking expenses, supplying reports to faculty and interfacing with the business office. For more information call 678/915-3159, visit the web site at www.spsu.edu/sponsoredprograms or stop by J-354.

eCore

eCore -- short for electronic core-curriculum -- allows University System of Georgia (USG) students the opportunity to complete the first two years of their collegiate careers in an online environment. eCore courses are taught entirely online, except for the occasional proctored exam. eCore courses are designed, developed, taught and supported by faculty and staff from the USG. Extended University coordinates eCore for SPSU and is available to answer all eCore questions. For more information go to www.spsu.edu/ecore.

English Language Services (ELS)

ELS Language Centers provide a unique opportunity for foreign students to learn English as a second language or to improve their English proficiency. ELS distinguishes itself as the finest in English language instruction by providing excellent customer service. ELS Language Centers have become the world's largest network of campus-based, English language instruction centers with over 30 locations throughout the United States. ELS provides full-time daily classes year-round in four-week terms. In addition, ELS offers specialized programs that are customized to fit your needs. For more information go to www.els.edu/atlanta.

Honor Society

Superior scholastic achievement in engineering technology is recognized by membership in the Tau Alpha Pi National Honor Society. The original chapter of this society was founded on the Southern Polytechnic State University campus in 1953, and its members have not only demonstrated high academic achievements, but have also maintained various leadership positions in campus organizations.

For further information on SPSU's local Tau Alpha Pi chapter, please visit the web site at tap.spsu.edu.

HornetCard

HornetCard is your university identification card. Every student, faculty and staff member at SPSU can get a HornetCard in the Campus Services office located on the 2nd floor of the student center. Your HornetCard is used for access to Univeristy facilities, events, and services. All privileges granted by the use of this card are provided solely for the person described on the card.

For more information about HornetCard and its services go to www.spsu.edu/hornetcard

Library

General Information – The Lawrence V. Johnson Library collection consists of 128,000 volumes and about 200 print and electronic journal titles. An increasingly popular service is access to over 8,000 e-books.

GALILEO – Georgia Library Learning Online, popularly known as GALILEO, is an initiative funded by the University System of Georgia that allows access to online databases, including full-text and full-image files. Faculty and students have access to more than 300 databases as well as library catalogs. Additionally, students who bring their laptops will be able to access GIL, GALILEO and the Internet for research purposes in any area of the Library which has wireless access.

GIL – The automated library union catalog, GIL, lists materials held by libraries throughout the state of Georgia. Materials from libraries nationwide may be obtained through the Interlibrary Loan service in the Reference Department. GILExpress is a self- initiated, free service to request materials from other University System of Georgia

Libraries.

Additional information about services offered at the Johnson Library may be accessed at www.spsu.edu/library/library.html; or, patrons may enter queries via email to reference@spsu.edu.

Post Office

The Southern Polytechnic Post Office is located next to the Bookstore and is open 9:00 a.m. to 5:00 p.m. Monday through Friday. Post Office boxes are available for rental by the term.

Recreational Sports

Mission

The Recreational Sports Department shares in the educational mission of the university by offering opportunities to experience interpersonal growth, social development, improve physical and mental health, and to develop lifetime leisure skills for a healthier lifestyle. The Department organizes, administers, and promotes a broad program of competitive, recreational, fitness, and wellness programs for students, faculty, and staff.

The Intramural Sports program provides students with the opportunity to compete on a competitive and recreational level. The program administers over 20 different leagues/tournaments throughout the academic year. Flag Football, Basketball, Soccer, Softball, Golf, and Bowling are just some of the intramural programs offered. Students also have an opportunity to learn new skills by officiating our leagues (and earn some extra money).

A wide range of fitness and wellness classes are also programed by the Recreational Sports Department. Aerobics, Yoga, abs, cycling, and swimming are just a few of the class offerings. Classes are free to all students.

Recreational Facilities

The Recreation and Wellness Center, offers many recreational opportunities to the student. A state of the art weight room that includes free weights, machine weights, plate loaded machines, and cardiovascular equipment highlights the facility. The facility also boasts a large multipurpose gym that accommodates 2 basketball courts, 2 volleyball courts, 4 badminton courts, and a perimeter jogging/walking area. The Recreation and Wellness Center also has 2 racquetball courts, locker rooms/showers, and a pool complete with an outdoor sunbathing area. The pool can be used for recreation, lap, and competitive swimming. The Department of Recreational Sports and Campus Health Services are housed in the Recreation and Wellness Center.

The Southern Polytechnic Outdoor Recreation Complex provides 3 softball fields. The intramural sports program makes use of these fields throughout the year with flag football, soccer, and softball leagues. Also included in the complex is a half-mile jogging trail.

Student Center

The Joe Mack Wilson Student Center is located in the center of campus, just west of "the Globe". The Student Center houses many student services, including Student Government Association, the Game Room, Student Life, Campus Services, the bookstore, the Grill, and the Post Office. There are also many spaces within the student center that are available for student groups to reserve for events and meetings.

For more information about the Student Center go to www.spsu.edu/studentcenter

Student Health Services

The school nurse, who is on duty Monday through Friday in the clinic located in the Recreation and Wellness Center, provides limited outpatient services for minor illnesses and injuries. If further treatment is necessary, she will refer the student to an urgent care facility located near the campus. Due to the limits on the health services provided by Southern Polytechnic State University, each student is encouraged to have adequate health and accident insurance through either a personal or family insurance policy. The University offers an optional medical insurance policy. Information is available at www.studentinsurance.com.

International students are required to have private health insurance protection. Southern Polytechnic State University is not responsible for any medical expenses incurred by international students beyond those that are covered by the Student Health Fee.

Student Housing

SPSU offers nearly 1800 on-campus student housing beds. In addition to providing a convenient and economical home for students, on-campus living also provides a great learning opportunity. Living on campus contributes to the educational development of each student through exposure to students of varied backgrounds, experiences, and personal philosophies. The Department of Housing and Residence Life is staffed by 9 full-time professionals along with 50 Resident Assistants. The primary function of the Housing and Residence Life staff is to create and maintain a desirable environment for all residents.

All students who have been accepted to Southern Polytechnic State University will need to visit the Housing and Residence Life website at www.spsu.edu/housing for application information. On-campus housing is required for all first-year students. However, this requirement may be waived if you will be living at home with a parent/guardian. Please contact our office for more information.

Howell Residence Hall and Hornet Village Suites are reserved for traditional first-year freshmen only. There is also a mandatory meal plan for all residence hall residents. Our on-campus apartments, University Courtyard and University Commons, are available to upperclassmen students. Consideration of a roommate request will be given providing the request is mutual and space is available.

For more information about student housing go to www.spsu.edu/housing.

Housing payments are due in full each semester. If you have any additional questions you may contact the Department of Housing and Residence Life by calling 678/915-7335 or by sending an email to housing@spsu.edu.

Application

Every student interested in living on campus at Southern Poly must submit a housing application, which can be found online in Banner. Space is limited, so it is important to submit your housing application early. A mandatory, non-refundable $200 application fee is required of everyone completing an application to live on-campus. The fee will be added to your student account and can be paid online or in person at the Business Office. Please understand that completing an application does not guarantee housing will be assigned. When the housing application and fee have been received, a notification of housing status will be sent by our office. In the case of space not being available, the reservation fee will be refunded. We will do our best to accommodate all preferences with regards to roommate requests and building placement. Roommate requests should be so marked on the housing application by all involved students.

Student Life

Mission

Student Life creates a sense of place as an academic support unit that empowers, prepares, and develops students at SPSU through high-quality social, leadership, educational, and service programs. Student Life aligns with the mission and vision of the university to help our students recognize and achieve their potential to transform their lives and impact their futures.

About Us

The Student Life Office is the hub of co-curricular activity on campus that includes Journey New Student Orientation, student organizations, campus activities, fraternities & sororities, student government, cultural programming, leadership development, and volunteer opportunities; we have something for everyone.

The events offered by the Student Life Office are sponsored by the Student Activity Fee that is paid by every student matriculated at Southern Polytechnic. Since the Student Activity Fee pays for these events, activities and outings, everything is FREE!

Student organizations allow our students to meet a variety of people, develop communication and leadership skills, practice the theories they learn in the classroom and create a wide web of networking possibilities that could lead to friendships, an internship, or even ultimately a job!

Our number one goal is to get each student connected, involved, develop a sense of community, and HAVE FUN!

For more information visit us at www.spsu.edu/studentlife

The ATTIC

The ATTIC (Advising, Tutoring, Testing, International Center) provides academic support services to students at SPSU. Located in the Student Center (A-160), the ATTIC houses Advising, Testing, Tutoring, International Student Services, Disability Services, and Multi-Cultural Affairs. For more information, call 678/915-7361.

Joint Enrollment Advising

The Joint Enrollment Advisor/Move On When Ready Advisor guides Joint Enrollment and Move On When Ready students in selecting courses they need for their high school graduation and for their college careers. The Advisor also works with high school counselors.

Tutoring

The ATTIC provides individualized assistance and small-group study options to Southern Polytechnic students. Tutors help students with core courses in English, chemistry, biology, mathematics, and physics. Tutoring occurs in the Student Center in rooms A-184 & A-185. The tutoring schedule can be viewed online at the ATTIC's website at www.spsu.edu/attic/tutoring.

* Please Note: The schedule may vary from semester to semester.

Testing

The ATTIC administers the following tests:

Math Advisory Test (MAT)

SPSU students take the math test to determine the level of math placement. The test consists of college algebra and pre-calculus. MAT scores will determine the appropriate starting point in SPSU's math sequence. Students may obtain MAT scores from their academic advisor or a program representative during an advising session, from the Testing Coordinator, the Coordinator of Disability Services, or from Banner.

Placement is based on the following scale:

If your score is	On this test	Start in this Mathematics Course
23 or lower	MAT 1+2	MATH 1111 College Algebra
24 or higher	MAT 1+2	MATH 1113 Pre-calculus
26 or higher	MAT 1+2	MATH 2253 Calculus
AND		Or
8 or higher	MAT 3	MATH 2240 Elements of Calculus
28 or higher	MAT 1+2	MATH 1113 Pre-calculus OR
AND		MATH 2253 Calculus I OR
630 or higher	SAT	
OR		MATH 2240 Survey of Calculus
28 or higher	ACT (Math)	(MATH 1113 is recommended)

Students are eligible to take any mathematics course at SPSU for which they have met all prerequisites. The ATTIC and the Mathematics Program offer math tutoring.

COMPASS

Non-traditional students-students should take COMPASS. The test consists of writing, reading, and math sections. A proctoring fee must be paid in advance of the test. Students may call 678/915 -7361 to make an appointment to take the COMPASS test. COMPASS testing can also be scheduled online via www.spsu.edu/attic.

Disability Services

SPSU does not discriminate on the basis of an individual's disability and is committed to providing students with full and equal enjoyment of services, facilities and goods on campus as required by law. If you are a student with a qualified disability and are in need of a reasonable accommodation, you must contact the Office of Disability Services. The Disability Services Advisor coordinates academic support services for students who have a permanent qualified disability.

International Student Services

International Student Services advises the University's international student body, faculty, and staff on Immigration and Naturalization regulations. The coordinator provides student assistance with banking, social security, insurance, housing, employment, practical and curricular practical training, travel regulations, income tax, and the lottery.

International Student Services provides cultural, social, and educational programs. Baptist Collegiate Ministries, Friends of Internationals and AMIS (American Ministry of International Students) sponsor family and community activities.

The University Honors Program

The University Honors Program of Southern Polytechnic builds upon the university's excellent reputation for providing both theoretical and applied approaches to learning. Honor students are given the opportunity to develop their talents and skills in an expanded and enriched curriculum featuring seminar-size classes and independent research opportunities.

Admissions

All prospective Honors students must apply to the Honors Program. Incoming freshmen who have at least a 1200 SAT score or ACT equivalent and at least a 3.5 high school GPA will be guaranteed automatic admission to the Honors Program. Transfer students who have earned a 3.5 GPA for college-level coursework over 30 hours of credit also will be guaranteed automatic admission. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site www.spsu.edu/honors/. All prospective Honors students must apply to the Honors Program. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site www.spsu.edu/honors/.

Advantages

While the main advantage of participation in the Honors Program is the intellectual rigor of the curriculum, there are other advantages as well:

- Eligibility for Honors scholarships or out-of state tuition waivers as appropriate
- Special Orientation Programs
- Priority Registration
- Honors course designation on student transcripts
- Honors advising

- Social and extracurricular opportunities
- Recognition upon graduation: in the commencement program, on the diploma, and with an honorary symbol as part of the graduation regalia.

Program Guidelines

To earn the University Honors Scholar Diploma at Southern Polytechnic, students must complete 18 credit hours of Honors coursework and at least 6 of those hours must be upper division course-work. To earn the Departmental Honors Scholar Diploma, students must complete 6 hours of enriched upper division course-work or directed study.

The Honors Program offers several different types of honors courses so that students can meet the requirements.

- Honors Core Courses
- Honors Interdisciplinary Seminars
- Honors Research Assistant and Independent Study Opportunities.

Students must have a minimum graduation GPA of 3.4. All students must complete an Honors Paper to be bound and placed in the library. An Honors Presentation of this paper is also required.

Probation and Dismissal

Students in the Honors program that fall below the required GPA are placed on probation for one semester. A student on probation whose GPA does not meet the requirements at the end of their next enrolled semester will be dismissed from the honors program. Students who commit acts of academic dishonesty may also be dismissed from the program.

Additional Information

For additional information contact the University Honors Program at 678/915-3931 or email us at honors@spsu.edu. You can also visit our website at honors.spsu.edu.

University Transportation

University Transportation manages all of the parking and transportation services at SPSU. Parking on campus is available by permit only. All students pay a mandatory University Transportation Fee each semester. Your parking permit is included as a part of this fee. Visitors must park in one of the two visitor parking lots, located adjacent to the Student Center and on the first level of the parking deck. University Transportation also provides many other services including the Poly Trolley and ZipCar.

For more information about parking on campus or other University Transportation services go to www.spsu.edu/studentcenter.

Academic Regulations

Introduction and Student Responsibility

Students are expected to have read this section of the catalog and to be generally familiar with academic rules. Students are expected to consult this section of the catalog and follow the procedures that are outlined herein when the appropriate time in their academic tenure approaches. For example, students who are within a year of graduating should review the graduation section and comply with the time table for petitioning to graduate.

In a pedagogical setting, students are expected to develop the ability to read and follow instructions as part of their educational experience. Academic advisors are available to help students interpret what they've read and to encourage appropriate actions. However, it is the student's responsibility to ask questions when in doubt, and to seek out information from official sources rather than to allow rumor to dictate actions.

Student Records

In accordance with the policy of the Board of Regents of the State of Georgia and under the provisions of the Family Education Rights and Privacy Act of 1974 (FERPA), Southern Polytechnic State University maintains various educational records for each matriculating student.

These records are considered confidential and will not be released for use outside the institution without the written consent of the student. Exceptions as authorized by the Act are noted.

Directory Information

Southern Polytechnic maintains student information in various forms. Students who desire that "directory information" not be released without consent should so notify the Registrar's Office in writing. The following may be included as "directory information" unless notification is received to the contrary:

- student's name
- address
- e-mail addresses
- current enrollment status/rank (e.g. undergraduate or graduate; freshman, sophomore, junior, etc.)
- dates of attendance
- major field of study
- participation in officially recognized activities and sports
- degrees, honors, and awards received
- hometown
- weight and height of members of athletic teams
- prior college(s) attended
- photograph/image

More specific information regarding FERPA has been listed on the Registrar's Office website.

Student Email

The official means of communication between the university and students is email and that students are responsible for information sent to their email accounts.

Grading System

Grades

The following letter grades are used to specify the level of performance in academic courses and are computed into the grade point averages:

Grade	Definition
A	Excellent
B	Good
C	Satisfactory
D	Poor
F	Failure
WF	Withdrawal After Deadline

Lab Grades

For subjects including class and laboratory work, both portions are considered essential and the grades on each will be combined at the end of the semester and reported as one. Failure in either class or lab may result in failure of the entire course.

Other Grades

The following grades may be listed on the transcript. These grades are not used in grade point average calculations.

Grade	Definition
I	Incomplete
	This symbol indicates that a student was doing satisfactory work but, for **non-academic reasons** beyond his or her control was unable to meet the full requirements of the course. An Incomplete grade must be removed before the end of the following term; otherwise, the grade will be changed to an F. If an Incomplete grade is given, the student should not re-register for the course until the Incomplete grade has been satisfied or changed to another permanent grade.
IP	In Progress

	The In Progess grade indicates that credit has not been given in a course that requires a continuation of work beyond the term for which the student signed up for the course. This symbol cannot be substituted for an Incomplete grade.
K	Credit by Exam
	The K grade indicates that a student was given credit for the course via a credit by examination program approved by the institution's faculty (CLEP, AP, etc.).
S	Satisfactory
	The S grade indicates that credit has been given for the completion of degree requirements other than academic course work. The use of this symbol is approved for dissertation and thesis hours, student teaching, clinical practicum, internship, and proficiency requirements in graduate programs.
U	Unsatisfactory
	The U grade indicates unsatisfactory performance in an attempt to complete degree requirements other than academic course work. The use of this symbol is approved for dissertation and thesis hours, student teaching, clinical practicum, internship, and proficiency requirements in graduate programs.
V	Audit
	The Audit grade is assigned when a course has been audited. No credit is given. This grade may not be used at any future date as a basis for receiving course credit.
W	Withdrawal
	A Withdrawal grade is assigned when a student officially withdraws from a course before the midpoint of the term.
WM	Withdrawal for Military Reasons
	This symbol indicates a student was permitted to withdraw under the Board of Regents policy for military service refunds.

Grade Point Average

The grade point average or GPA is calculated by dividing the total quality points earned, by the total number of hours of credit for which grades have been received. Some courses may be excluded.

At the close of each semester, a term GPA is calculated. An overall or cumulative GPA also exists that includes all coursework taken throughout all terms of attendance at SPSU. Grades from other institutions (excluding coursework completed as a part of cross registration) are not included in a student's cumulative GPA at Southern Polytechnic.

Credit earned at other institutions, credit by examination, credits for which quality points are not assigned, institutional credit courses, and courses otherwise excluded by institutional policy are not considered when calculating the cumulative grade point average for graduation purposes.

Grade	Quality Points Assigned
A	Four
B	Three
C	Two
D	One
F	Zero
WF	Zero

Grade Changes

Grades that have been assigned to a student by an instructor may be changed no later than the end of the third consecutive term following the term in which the grade was awarded. The instructor must initiate grade changes. Grades included in this provision are A, B, C, D, S, U, and F.

Grade Appeals

Grade appeals fall into a special category. Grades are assigned by professors based on an evaluation of a student's academic performance. A student who wishes to appeal a grade must present clear evidence that a grade was assigned by some criteria other than an evaluation of academic performance. Appeals that proceed beyond the professor who issued the grade, must be in writing. The SPSU Student Handbook includes procedures for the appeal of grades.

Progress Reports

All faculty members shall make available to each student in their classes each semester, an evaluation of the student's academic progress in the class on or before the mid-date of the term. The evaluation must be in the form of graded/evaluated class assignments, examinations, papers or essays, or projects returned to the students on or before the deadline stated above. Instructors will make every effort to be available during their office hours for discussion of the student's progress in the course prior to the midpoint of the total grading period.

Semester Honors

Dean's List

Undergraduate students who have earned 12 or more hours with a scholastic average of 3.50 or better for the current term and who are not subject to any disciplinary action shall be on the Dean's List, which is published each term by the respective dean of each school.

Dean's Merit List

Undergraduate students who have earned 9 or more hours with a scholastic average of 3.50 or better for the current term and who are not subject to any disciplinary action shall be on the Dean's Merit List, which is published each term by the respective dean of each school.

Academic Standing

Good Standing

An undergraduate student is in good standing when he/she has a cumulative GPA of 2.00 or higher.

Probation

A student whose cumulative GPA falls below 2.00 at the end of the term will be considered for placement on the probation list by the Undergraduate Student Status committee.

A student will remain on the probation list until the terms of probation are satisfied or until the student is moved to the suspension list by virtue of continued unsatisfactory academic progress or returns to good standing.

Students may register for a maximum of 13 hours while on probation.

Suspension

A student who does not satisfy the terms of probation or who does not improve academic progress after having been placed on probation may be suspended at the discretion of the Undergraduate Student Status committee.

Reinstatement

Students who have been suspended may appeal for reinstatement to the Undergraduate Student Status committee. A letter from the student detailing the reasons why the appeal should be considered must be submitted, along with any supporting materials (doctor's notes, support letters from faculty, etc.).

Repeated Courses

Students may repeat courses as many times as they choose. However, for the purposes of calculating the institutional GPA, only the last attempt will be used. Other attempts remain on the transcript, but are not used in calculating the institutional GPA. A course must have the same subject code, course number, and title to be considered the same. Courses that have the same subject code and course number, but have varied topics may be excluded from this policy.

A student may not use the same course more than once in satisfying graduation requirements.

GPAs calculated for financial aid and other purposes may count all attempts.

Credit for Duplicate Courses or Dual Credit

Credit may not be awarded for the same course twice or for courses deemed so similar as to be considered the same. For example if a student completes PHYS 1111 and PHYS 1111L (Trigonometry based Physics I), and then takes PHYS 2211 and PHYS 2211L (Calculus based Physics I), only one course may be counted as hours earned. Only one course may be used for graduation purposes.

Exclusion of Previous Major Courses from the Institutional GPA

Students may request that certain courses taken for a previous major be excluded for graduation GPA and hours purposes. Students should discuss this action with their program advisor first to determine its benefit potential. All courses that were unique to the excluded program will be excluded under this rule.

For example, if a mathematics course is part of the degree requirements for a management degree, and the student requests exclusion, the mathematics course would be excluded along with all management and related courses.

In order to qualify for previous major course exclusion, the student must have officially declared the previous major at some point and submit a completed Petition to the Faculty to Exclude Previous Major Courses form to the Registrar's office.

Academic Renewal

Undergraduate students who have been readmitted or reinstated after a period of absence of five (5) calendar years or longer are eligible for academic renewal, provided they have not attended any post-secondary school during the five years. Academic renewal for the student signals the initiation of a new grade point average to be used for determining academic standing.

This provision allows University System of Georgia degree-seeking students who earlier had experienced academic difficulty to make a fresh start and have one final opportunity to earn an associate or bachelor's degree.

Academic renewal applies to institutional grade point averages only and many financial aid regulations require inclusion of all attempted courses to be included in any award process. Students considering academic renewal should contact Financial Aid regarding its impact on financial aid.

Credit Hour

One credit hour typically corresponds to one hour per week of classroom work for a semester, or to three clock hours or its equivalent of laboratory work per week for a semester. Certain exceptions do exist.

Maximum Credit Hours/Course Load

Students may register for a maximum of 18 hours during fall and spring semesters and 12 hours during the summer. Academic department chairs can authorize up to 21 hours in fall and spring and up to 13 hours in summer. Requests for additional hours beyond what is administratively authorized must be requested as a Petition to the Faculty and approved by the Undergraduate Student Status committee.

Students who are on academic probation may only register for 13 hours.

Auditing Courses

Auditing a course gives a student the opportunity to attend a class without penalty or risk. The student must declare an audit status before or during the drop/add period for the term in the Registrar's office. Changes in audit status cannot be made after drop/add closes.

Courses taken under the audit status carry the same tuition and fees as courses taken in the usual way. Audit courses count at full value in determining the number of credit hours for which the student is enrolled.

The grade of "V" (Visited) is assigned when a course has been audited. No academic credit will be given, and this grade has no impact on the GPA. This grade or course may not be used at any future date as a basis for receiving academic course credit or credit by examination for the same course.

Enrollment Classification

Students are classified at the end of each term based on the number of credit hours earned. These hours include all earned college level credit at Southern Polytechnic, plus any accepted transfer credit.

Classification	Hours Earned
Freshman	0-29
Sophomore	30-59
Junior	60-89
Senior	90 and above

Enrollment Status

Southern Polytechnic uses the following metric to determine the enrollment status of each undergraduate student enrolled. Enrollment verifications generated by the Registrar's office use the definitions below.

Part-Time	Half-Time	¾ Time	Full-Time
Less than 6 Hours	6-8 hours	9-11 hours	12 hours or more

Continuous Enrollment

To remain continuously enrolled, a student must not have an absence of two or more consecutive terms of matriculation at Southern Polytechnic, including summer semester. Continuous enrollment is required in order to continue to use the catalog in effect at the time of admission.

Withdrawal from Classes

A withdrawal is defined as discontinuing participation in a course or courses during a specified time period after the close of drop/add (or registration period) but before the midpoint of the term. Students who withdraw during this time earn a grade of W.

The grade of W does not count in the student's cumulative GPA, but the grade does count in total attempted hours. Numerous grades of W may impact eligibility for financial aid.

Refunds associated with withdrawals are made only in the case where a student withdraws completely from all classes for a term.

Withdrawals After the Midpoint

Students who withdraw from classes after the midpoint of the term will receive grades of WF. In cases of hardship or extenuating circumstances, a Petition to the Faculty to Withdraw after the Deadline may be submitted to request that a grade of W be granted instead.

Military Withdrawal

Servicemembers who are called to active duty or who are deployed during the term may be eligible to withdraw from classes and the institution for military reasons. Official orders must be presented to staff in the Registrar's office.

Transient Authorization

Southern Polytechnic State University students planning to attend another institution for one semester and then return to Southern Polytechnic State University should complete a transient letter authorization form, available from the Registrar's Office.

Cross Registration

Southern Polytechnic participates in the cross registration program established among the member institutions of the Atlanta Regional Consortium for Higher Education (ARCHE). The purpose of cross registration is to provide opportunities for enriched educational programs and experiences by permitting students at any ARCHE institution to take courses at any other member institution. A student may cross-register only for:

1. Courses for which the student has met the prerequisites, and
2. Courses not offered at the home institution for the given term.

Students may not attend Southern Polytechnic and another institution concurrently for transfer purposes except under this cross registration program.

Attendance

There are no formal institutional regulations regarding class attendance. Each classroom or laboratory instructor sets his or her own attendance policy. However, instructors should report the names of students who do not attend to the Registrar's office. Within the first calendar week of classes, or the first laboratory meeting, of the term the instructor will notify the students in writing of the attendance policy for that class. It is the prerogative of the instructor to determine and impose grade penalties for absences. Students are responsible for all course material covered and any academic consequence of their absences. In some cases, federal and state laws require that attendance be recorded and reported.

Attendance or participation in a class for which a student has not registered and paid is strictly prohibited.

Engagement Status Reporting

Engagement Status Reports (or early warning grades) are reported by instructors early in the term to identify students who are not attending (for federal financial aid reporting regulations) and to identify students who could be in academic trouble. Students must attend class in order to retain financial aid for the term, and students who may be struggling academically should respond to resources offered for assistance.

Student Activity Absence

Students who are absent because of participation in approved university activities such as field trips and athletic events will be permitted to make up the work missed during their absences. The student is responsible for reporting such absences to the instructor and for arranging with the instructor for make up work. This policy is not to be construed as blanket permission to miss classes and any excessive absence may result in failure of the class.

Late Instructor

Should the instructor be late in meeting a class or a laboratory period, students will wait a minimum of fifteen minutes. If during the fifteen-minute waiting period no notification to remain is given, students may leave without penalty.

Disruptive Behavior and Academic Dishonesty

A faculty member reserves the right to remove any student from his or her course if the student's behavior is of a disruptive nature or if there is evidence of academic dishonesty. In instances of disruptive behavior and/or academic dishonesty, the faculty member will discuss the circumstances with the student(s) before taking final action. In the event that the student cannot be reached, he or she will be given the grade of "Incomplete" until such time as he or she can be contacted. The student has the right to appeal the faculty member's decision following the progression below.

1. Department Chair of the faculty member
2. School Dean, as appropriate
3. Vice President for Academic Affairs (if necessary)

If a student is removed from a course under this provision, a grade of F will result. A grade of F issued under these circumstances shall not be superseded by a voluntary withdrawal, and will be included in the student's cumulative grade point average calculated for graduation purposes.

Catalog and Curriculum Appeals

Matters requiring Petitions to the Faculty include requests for consideration for exceptions to policies published in the catalog or as formal institutional Policies and Procedures. Examples include:

- Extension of the time limit for converting a grade of I
- Exceptions to residency requirements

Completed Petitions should be submitted to the Registrar's office for routing to the appropriate committee.

If the petition is approved, the matter should be resolved. If the petition is denied, and the student feels that he or she has grounds for an appeal, the following steps are followed:

- The student should discuss the petition with the Registrar to determine the basis for refusal, to be informed of the appeals procedure in his or her particular case, and to be informed of any additional information or documentation that may be desirable, helpful, and/or required.
- Upon written request for appeal to the Registrar's Office, all related information is forwarded to the Vice President for Academic Affairs for review. The Vice President may approve or refuse the appeal.
- If the Vice President for Academic Affairs denies the appeal, upon written request to the Vice President for Academic Affairs, the student may appeal to the President. All related information will at that time be forwarded to the President for review.
- The President may approve or deny the appeal. The President is the final level of appeal.

Graduation

Catalog for Graduation Evaluation

Each student is responsible for determining the appropriate catalog to be used for academic advisement and for evaluation of graduation requirements. Catalog selection applies only to the course requirements of that catalog; all other academic procedures and graduation requirements must be satisfied according to regulations in effect at the time of graduation.

A student may elect to be evaluated for graduation from any catalog in effect during the time he or she has been enrolled, provided that enrollment has been continuous. If a student changes majors, he/she will be evaluated for graduation using the catalog in effect at the time of the change, or any catalog in effect during subsequent periods of continuous enrollment.

Students readmitted or reinstated will be evaluated for graduation from the catalog in effect at the time of readmission or reinstatement, or any catalog in effect during subsequent periods of continuous enrollment.

For further information on the selection of an appropriate catalog, contact your major Department Chair or advisor.

General Requirements

An undergraduate student is eligible for graduation when he or she has:

- Completed satisfactorily the required number of hours for the degree
- Passed all required courses for the degree
- Achieved the necessary grade point average (2.00 for undergraduates)
- Paid all required fees, fines, and other financial obligations
- Filed an official "Petition of Admission to Candidacy for a Degree" through the Department Chair to the Registrar's Office

- Passed an examination on U.S. and Georgia History, and the provisions of the Constitutions of the U.S. and the State of Georgia (Credit for U.S. History or American Government satisfies this requirement; undergraduate degree only)
- Satisfied any program related requirements
- Merited the recommendation for the degree by the faculty and the President of the university
- Earned 25% of the major hours required for the degree in residence at SPSU
- Earned in residence at SPSU the last 20 credit hours required for an associate degree 30 credit hours required for a bachelor's degree 45 credit hours required for a bachelor of Architecture degree. Note: Coursework completed as a transient student is not included as resident work.

Graduation Petitions

A student must submit a formal petition for "Admission to Candidacy for a Degree" to the Registrar's Office in accordance with the published deadline. The fee can be paid at the Business office with check or money order or online via Banner.

All fall semester petitions for students not in school summer should be made in the spring semester of that year, and co-op students should petition the term before a work term if the work term immediately precedes the term of anticipated graduation.

Graduation Honors

To graduate with honors, a student must have earned a minimum of 40 hours in residence for the associates degree and a minimum of 60 hours in residence for the bachelor's degree.   Honors will be awarded based on the GPAs listed below.

Honor	Minimum Scholastic GPA
Summa Cum Laude	3.90
Magna Cum Laude	3.70
Cum Laude	3.50

Graduating with honors should not be confused with participation in the Honors Program at Southern Polytechnic.

Minor

Minors require 15-18 hours of credit and nine hours at the upper division level (3xxx-4xxx) in a specified minor area. Six hours of the upper division requirement must be completed at Southern Polytechnic. Transfer credit may be used to satisfy the other requirements for the minor.

Residency Requirement (Hours Earned in Residence)

Students who wish to earn a degree from Southern Polytechnic State University must have completed 25% of the major required hours as course work in residence at the institution. "In residence" is defined as courses for which a student has registered at SPSU.

Courses for which the student registers at SPSU including cross-registration are considered to be in residence. Coursework completed as a transient student at another institution, transfer credit, credit by examination (including CLEP, AP, IB, etc.) are not considered to be in residence.

In addition to earning 25% of the major hours required for the degree in residence at SPSU, a student must earn in residence the last:

- 20 credit hours required for an associate degree
- 30 credit hours required for a bachelor's degree
- 45 credit hours required for a bachelor of Architecture degree

Second Bachelor's Degree or a Dual Major

Students who complete requirements for a second bachelor's degree may either declare a dual major or earn two diplomas. Though subtle, the difference is distinct. If a student declares a dual major and completes the degree requirements for both majors, he or she would petition for graduation on a single form and would receive a single diploma with both majors listed.

If a student would rather have a second diploma, the student must apply for graduation using two separate forms and pay two graduation fees.

To obtain a second bachelor's degree from Southern Polytechnic State University, a student must:

- Complete all required courses for the degree, and
- Earn credit for a total of at least 30 new hours in excess of the requirements for any previous SPSU degrees earned.

Requirements for a dual major are listed in the Curricula sections. However, in general, there are specific courses that must be completed and the above criteria must be met. Currently, only mathematics and physics offer dual majors.

Certificate Programs

Students admitted to a certificate program may apply the courses completed for the certificate toward a degree program if they are accepted to a degree program. Students admitted to a degree program may be awarded a related certificate based on completion of the courses in the certificate program provided they also apply for the certificate.

Students who wish to apply for a certificate should contact their academic department or the Registrar's Office for instructions on how to proceed.

Credit by Examination

Awarded at the Discretion of the Department Chair

Student evaluation by standardized and/or program examinations may be used at the discretion of the Department Chair as a basis for awarding credit for some courses. These evaluations are available only to currently enrolled students. A fee will be charged before the evaluation.

In order to receive credit by examination, the student must check with the appropriate Department Chair about the applicability of credit by examination for the course(s) under consideration. If credit by exam is appropriate, the student must present a completed Request for Credit by Examination form to staff in the Business office and pay the requisite fee. The Business Office will validate the form and forward it to the Department Chair responsible for the course(s) in question.

After the evaluation, the Department Chair will make his or her recommendation for credit to the Registrar's Office. The Registrar will notify the student of the final disposition of the credit.

Credit by exam may not be awarded for a course previously failed or audited at SPSU.

The USG Core Curriculum

The USG Core Curriculum

Core Curriculum

The University System of Georgia has a Common Core designed to make transfer from one system institution to another as smooth as possible with a minimum of credit loss. Learning Outcomes have been established as Goals (Areas) A-F and Goals (Overlays) I-III.

Curriculum Framework for the Core

Learning Goal A1: Communication Outcomes

Students will demonstrate an ability to write and communicate effectively in various modes and media.

Students will demonstrate an ability to analyze and interpret written texts and materials.

Learning Goal A2: Quantitative Outcomes

Students will demonstrate a strong foundation in mathematical concepts, processes and structure.

Learning Goal B: Institutional Options

Students will critically analyze the role in and impact of science and technology on society.

Students will demonstrate an ability to analyze and interpret oral and written arguments and materials.

Learning Goal C: Humanities, Fine Arts and Ethics

Students will evaluate and synthesize information to support ideas and solve problems.

Students will demonstrate an ability to make informed aesthetic judgments about the arts and other forms of cultural expression.

Learning Goal D: Natural Science, Mathematics and Technology

Students will understand and apply basic scientific principles, theories and laws.

Students will demonstrate an ability to effectively apply symbolic representations to model and solve problems.

Learning Goal E: Social Sciences

Students will demonstrate a broad understanding of the history, political system, and culture of the United States.

Students will describe the historical evolution and contemporary impact of political, economic, and social relationships among multiple nations and states across several centuries.

Students will demonstrate a broad theoretical understanding of how humans behave and interact in various situations.

Students will describe and compare how political, social, economic, religious, and historical factors affect various people, cultures, and societies, primarily outside the United States.

Learning Goal F: Courses Related to the Program of Study

The learning outcomes for Area F are appropriate for each program of study.

Learning Goal I: US Perspectives

Students will demonstrate a broad understanding of the history, political system and culture of the United States.

Learning Goal II: Global Perspectives

Students will describe and compare how political, social, economic, religious and historical factors affect various people, cultures and societies, primarily outside of the United States.

Learning Goal III: Critical Thinking

Students will evaluate and synthesize information to support ideas and solve problems.

Core Courses

Listed below are Southern Polytechnic State University core-curriculum courses and the credit hours for those courses.

Learning Goal A1: Communication Outcomes

Both courses are required.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**

Area Total: 6 Credits

Learning Goal A2: Quantitative Outcomes

One course is required. See your academic advisor for information regarding course selection.

- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area Total: 3-4 Credits

Learning Goal B: Institutional Options

Both courses are required.

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area Total: 4 Credits

Learning Goal C: Humanities, Fine Arts and Ethics

Two courses are required. Take one course from the group Literature of the World and one course from Art and Culture of the World.

Literature of the World

Take one course from this group.

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**

- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Art and Culture of the World

Take one course from this group.

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area Total: 6 Credits

Learning Goal D: Natural Science, Mathematics and Technology

A minimum of three courses is required. Take two lab science courses from the Sciences group and one course from the Mathematics group.

Sciences Group

Take any two lab science courses from this group for a total of 8 hours. (Chemistry and Physics courses require the course plus the lab.)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**

- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

Mathematics Group

Take one course from this group for a total of 3 or 4 hours.

- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2240 - Survey of Calculus **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area Total: 11-12 Credits

Learning Goal E: Social Sciences

Take one course from each group below. Four courses are required.

American Perspectives Group

Take one course from this group. The course will satisfy the legislative requirements and US Perspectives overlay requirement.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Historical Perspectives Group

Take one course from this group.

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

Behavioral Science Perspectives Group

Take one course from this group.

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

Global Perspectives Group

Take one course from this group. This course will satisfy the Global Perspectives overlay requirement as well.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Area Total: 12 Credits

Area F: Courses Related to the Major Program of Study

Eighteen credits are required. This Area is made of lower division courses (numbered below 3000) that are related to the program of study. Courses in this Area are prerequisites to major courses at higher levels. See your academic advisor or your academic department for the required courses in this area.

NOTE: Additional hours from Areas A and D may carry over to Area F or general degree requirements.

Area Total: 18 Credits

Learning Goal I: US Perspectives

One course is required. The course used in the American Perspectives group of Area E may be used for this requirement as well.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Learning Goal II: Global Perspectives

One course is required. The course used in the Global Perspectives group of Area E may be used for this requirement as well.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**

- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Learning Goal III: Critical Thinking

One course is required.

- STS 2400 - Science, Technology, and Society **2 Credits**
  This course may also be used in Area B.

Core Total: 60 Credits

eCore

eCore — short for electronic core curriculum — allows University System of Georgia (USG) students the opportunity to complete the first two years of their collegiate careers in an online environment. eCore courses are taught entirely online except for the occasional proctored exam. eCore offers courses in a variety of subjects that are designed, developed, taught and supported by faculty and staff from the USG.

eCore has its own calendar that varies slightly from the SPSU academic calendar. Additional information about eCore (including courses offered, course descriptions, cost, textbook information, etc.) is available online at spsu.edu/ecore and ecore.usg.edu. SPSU also has an eCore Equivalency Chart available at spsu.edu/ecore/equivalency_chart.htm.

Courses taught in eCore are listed below.

- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- COMM 1100 - Human Communications **3 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENVS 2202 - Environmental Science (ECORE) **3 Credits**
- ETEC 1101 - Electronic Technology in the Educational Environment **2 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 2111 - United States History to 1877 **3 Credits**
- MATH 1101 - Introduction to Mathematical Modeling **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 1401 - Intro to Statistics **3 Credits**
- MATH 1501 - Calculus I **4 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHIL 2010 - Introduction to Philosophy **3 Credits**

- POLS 1101 - American Government **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Areas of Study by School

Southern Polytechnic State University

School of Architecture and Construction Management

Architecture

The Architecture Program

SPSU is the only public state institution in Georgia to offer a five-year professional degree: the Bachelor of Architecture degree. The curriculum is organized as a 2+3 program. The Design Foundation constitutes the first two years and its curriculum is designed to introduce basic skill sets, fundamentals of design and building technologies. The last three years constitute the Professional program whose curriculum is designed to enhance the students understanding of the relationship between people and the built environment, the role of technology and structures in design, the importance of history and theory to design and introduce the broader challenges of urbanism. Students must pass a portfolio and curriculum review to proceed from the Design Foundation to the Professional Program.

The Architecture Program offers unique educational opportunities for its students including: the Summer Workshop, the Focus Studio: a research based studio with an invited studio critic, and an individually structured thesis project. The Architecture Program also offers students organized travel opportunities within the U.S. and abroad, including a summer program in Dessau, Germany.

Vision and Mission

The mission of the Architecture Department is to expand and extend the University's mission into the realm of Architecture, preparing students for professional practice in the design, planning, development and stewardship of the built environment. The Architecture Program fosters invention, creativity and craft through hands-on exploration that is the foundation of technological innovation. Moreover, knowledge of culture diversity, communication, history and

criticism is seen as inseparable from the application of such innovation. This holistic process is "the making of architecture."

The Faculty

Edwin Akins	*Assistant Professor*
Kathryn Bedette	*Associate Professor*
William J. Carpenter	*Professor*
Michael J. Carroll	*Assistant Professor*
C. Richard Cole	*Professor and Dean School of ACM*
Durham Crout	*Associate Professor*
Bronne Dytoc	*Assistant Professor*
Ameen Farooq	*Professor*
Tim Frank	Assistant Professor
Mine Hashas	*Associate Professor*
Pyo-Yoon Hong	*Assistant Professor*
Elizabeth Martin	*Assistant Professor*
Marietta Monaghan	Lecturer
Peter Pittman	*Associate Professor*
Gernot Riether	Assistant Professor
Anthony Rizzuto	*Associate Professor and Department Chair*
Arief Setiawan	Lecturer
Ermal Shpuza	*Associate Professor*
Robert Tango	*Associate Professor*
M. Saleh Uddin	*Professor*
Christopher Welty	*Associate Professor*
Pegah Zamani	*Assistant Professor*

Departmental Staff

Cathy Smith   *Administrative Assistant*

Mary Neely   *School of ACM Advisor*

David Easterwood   *Media and Digital Resources Supervisor*

Dave Peeples   *Architecture Wood Shop, Digital Fabrication Lab, and Building Operations Supervisor*

NAAB Accreditation

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture and the Doctor of Architecture. A program may be granted a 6-year, 3-year or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within 6 years of achieving candidacy, if its plan is properly implemented. In order to meet the educational requirement set forth by the National Council of Architectural Registration Boards, an applicant for an NCARB Certificate must hold a professional degree in architecture from a program accredited by the NAAB; the degree must have been awarded not more than two years prior to initial accreditation. However, meeting the educational requirement for the NCARB Certificate may not be equivalent to meeting the education requirement for registration in a specific jurisdiction. Please contact NCARB for more information.

Southern Polytechnic State University, Department of Architecture offers the following NAAB- accredited degree:

    5- year B. Arch (153 undergraduate credits)

Areas of Study

Architecture Minor

Minor in Architecture for non-architecture majors, provides a focused exposure to the varied dimensions of design, critical thinking and application while exercising restraint on time to complete. Students who change their major from Architecture to another major or discipline of their choice can get a Minor in Architecture after fulfilling it's course requirements. Students complete a major in a Program to be awarded with a Minor in Architecture. Minor in Architecture will not be substituted with Certificate in Architectural Studies. All studio and lecture courses must be passed with a minimum grade of "C". All studios should be taken in sequence.

Architecture Minor

- ARCH 1001 - Design Foundation I **4 Credits**
- ARCH 1002 - Design Foundation II **4 Credits**
- ARCH 1241 - Design Communication I **2 Credits**
- ARCH 2003 - Design Foundation III **4 Credits**
- ARCH 2004 - Design Foundation IV **4 Credits**
- ARCH 2242 - Design Communication II **2 Credits**
- ARCH 2311 - Environmental Tech I - Systems Selection and Materials **3 Credits**
- ARCH 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- ARCH 2211 - Architecture Structures I - Introduction to Structures **3 Credits**

Minor Program Total: 29

Architecture, BARCH

[5 Year Professional Degree]

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Sciences - Lab Science - Any Lab Science **4 Credits**

- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 American Context , One Course **3 Credits**
- Group 2 World History , One Course **3 Credits**
- Group 3 Behavioral Science , One Course **3 Credits**
- Group 4 Cultures and Societies , One Course **3 Credits**

Area F

- ARCH 1001 - Design Foundation I **4 Credits**
- ARCH 1002 - Design Foundation II **4 Credits**
- ARCH 1241 - Design Communication I **2 Credits**
- ARCH 2003 - Design Foundation III **4 Credits**
- ARCH 2242 - Design Communication II **2 Credits**
One credit from MATH 1113 and one credit from MATH 2253 will be added to Area F.

Requirements

Architecture

- ARCH 1000 - Orientation to Architecture **2 Credits**
- ARCH 2111 - Architecture Culture I: Early Civilizations & Medieval **3 Credits**
- ARCH 2004 - Design Foundation IV **4 Credits**
- ARCH 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- ARCH 2211 - Architecture Structures I - Introduction to Structures **3 Credits**
- ARCH 2311 - Environmental Tech I - Systems Selection and Materials **3 Credits**
- ARCH 3011 - Architecture Studio V **4 Credits**
- ARCH 3012 - Architecture Studio VI **4 Credits**
- ARCH 3113 - Architecture Culture III - 1850 through 1945 **3 Credits**
- ARCH 3116 - Urban Planning and Design Theory **3 Credits**
- ARCH 3211 - Architecture Structures II: Steel and Wood **4 Credits**
- ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads **3 Credits**
- ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems: **3 Credits**
- ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation: **3 Credits**
- ARCH 4013 - Architecture Studio VII **4 Credits**
- ARCH 4014 - Architecture Studio VIII **4 Credits**
- ARCH 4114 - Architecture Cultures IV: 1945-Current **3 Credits**

- ARCH 4224 - Professional Practice I - Codes and Technical Documents **3 Credits**
- ARCH 5412 - Professional Practice II - Cost Control **2 Credits**
- ARCH 5413 - Professional Practice III - Practice and Ethics **3 Credits**
- ARCH 5593 - Thesis Prep **2 Credits**
- ARCH 5998F - Focus Studio **4 Credits**
- ARCH 5999R - Thesis Research S/U **1 Credits**
- ARCH 5999T - Thesis Studio **4 Credits**
- Electives **17 Credits**
- ARCH 39X1 - Special Topics **1 to 4 Credits**
- ARCH 49X1 - Directed Study **1 to 4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Degree Program Total: 153

Construction Management

Offering:

The Bachelor of Science in Construction Management
The Masters of Science in Construction Management
Professional Certificate in Project Management
Professional Certificate in Land Development
Professional Certificate in Specialty Construction
Professional Certificate in Facilities Management
Professional Certificate in Highway Project Management
On- Line Professional Certificate in Specialty Construction

Management Construction

Minor in Construction Management

M4+T=Success

To succeed, construction professionals must manage money, materials, manpower, machinery, and time as effectively as possible. At Southern Polytechnic, students master these skills in a degree program that makes the most of their schedules and budgets.

The BS Construction Management degree program was first accredited by the American Council of Construction Education (ACCE) in February 1992. Accreditation was renewed in February 1997, February 2003, and February 2009. We are accredited to February 2016. As Georgia's senior accredited Construction Management degree program, we cover a broad range of topics, offer afternoon and evening courses, and use flexible formats. Hands-on learning and our solid reputation make our graduates market-ready for one of the nation's largest industries and one of the region's highest growth professions. In the Southeast, the drive for growth has led construction firms to branch out into new

market segments by focusing on the education, health care, water, waste, and transportation markets. To compete in this booming industry, aspiring construction professionals increasingly turn to Southern Polytechnic's Bachelor and Masters of Construction Management to develop the business skills needed to complete projects on time and within budget.

What is Construction Management?

Key construction management skills include scheduling, estimating and project management. These skills are utilized during the planning, design and construction of projects from inception to completion and work to control cost, time and quality, based on given drawings and specifications.

Concentrations in Construction Management

General
Contracting
                                    Heavy Construction Management

Land Development
Specialty (MEP) Construction
Facilities Management

We also offer a minor in Construction Management for students in other majors.

What can I do with a Construction Management Degree?

Construction Management graduates work in various organizations including, but not limited to: general contracting firms, developers, specialty contractors, Fortune 500 companies, banks, highway construction and others.

Typical job titles for Construction Management graduates are:

Construction Manager
Project Engineer
Project Manager
Estimator
Owner/Representative
Office Engineer

Our department's growing reputation outside the U.S. attracts a high proportion of international students, creating a multi-ethnic environment that reflects the increasingly diverse workplace. Drawing on these varied backgrounds, our students learn to look at challenges from many different angles and to use ingenuity in targeting solutions with the greatest value.

Construction Management is a discipline which is designed to instill in future constructors the skills, knowledge and understanding necessary to make the critical decisions which will guide the production and management processes of the largest industry in the United States.

In CM Major the traditional areas of business, engineering, and architecture are combined with specialized courses in construction. Completion of this curriculum prepares the Construction Manager to work with other project team members in managing the construction process.

Graduates in this field will help solve the complex technical and managerial problems in the building process, and can look forward to challenging careers which provide a full range of outlets for their creative efforts.

The subjects are taught so as to develop skills as well as instill knowledge. The intent is to create a professional who works well in team situations. The course work frequently uses cases or projects to simulate the working environment. A constant effort is made to help the student develop an analytical, practical, and realistic approach to problem solving and decision-making.

Our accredited Construction program provides an opportunity for students to choose one or more of following four concentrations:

- **General** - focuses on project management and the construction process from the general contractor perspective
- **Heavy Construction Management** - focuses on horizontal construction including pavements, roads, bridges,utilities, stormwater systems, and similar construction projects. The concentration prepares a professional to lead Project Management including estimating and scheduling aspects of a horizontal construction project
- **Specialty** - focuses on the mechanical and electrical managerial aspects of construction
- **Land Development** - focuses on the entrepreneurial and economic aspects of construction from the owner or developer perspective
- **Facilities Management** - focuses on the repair, maintenance, refurbishment and upgrade of existing facilities

Upon graduation most students pursue careers with construction firms.

Typical entry-level positions include:

Project engineer
Safety engineer
Assistant superintendent
Assistant project manager
Scheduling engineer
Assistant cost engineer
Quality control engineer
Assistant estimator

Opportunities are not limited to these areas, however, as many graduates start their careers with equipment or material suppliers, development firms, specialty contractors, lenders, or owners.

The demand for constructors in Georgia, and particularly in the Atlanta region, is so great that employers have been forced to recruit out-of-state to hire graduates with construction management degrees. As a result, the program at Southern Polytechnic State University was established through the seed money of the members and associate members of the Georgia Branch of the Associated General Contractors of America, Inc. Southern Polytechnic State University is a member of Associated Schools of Construction (ASC). The fundamental objective of the ASC is to establish, advance, and sustain construction education as a unique and progressive academic discipline. The establishment and nurturing of the construction program is evidence of Southern Polytechnic State University's commitment to this objective.

The Faculty

Our faculty members belong to numerous professional organizations including the ABC, AGC, AIC, ASCE, ASEE, ASHRAE, CMAA, GUCA, MECA, NAHB, and NECA. Many students belong to student chapters of the above organizations, enabling virtually all graduates to find employment prior to graduation. The estimated average starting salary for B.S. Construction graduates is $50,300, based on a 2008 annual salary survey. For more information on our courses and industry affiliations, visit www.spsu.edu/cnst. Our Award-winning faculty includes Dr. John Mench (retired), recipient of 2007 Georgia Society of Professional Engineer of the Year Award in Education, and SPSU Outstanding Faculty of the Year Award of the year 2010; Dr. Khalid Siddiqi, recipient of the Outstanding Educator Award (2005) from Associated Schools of Construction (ASC) and SPSU Teacher of the Year 2003 Award; and Dr. Pavan Meadati received 2013 Excellence in Teaching Award from Associated Schools of Construction (ASC).

Hussein Abaza, *Associate Professor*
Zuhair El-Itr, *Professor*
Maureen Weidner, *Lecturer*
Shariar Makarechi, *Assistant Professor*
Pavan Meadati, *Associate Professor*
Brandi Williams, *Assistant Professor*
Charner Rogers, *Assistant Professor*
Khalid M. Siddiqi, *Professor and Department Chair*
Parminder Juneja, Assistant Professor
Al Eckert, Lecturer

Construction Management Certificate Programs

SPSU's Construction Management Department offers five Certificate programs namely:

- Project Management Certificate
- Highway Project Management Certificate
- Land Development Certificate
- Specialty Construction Certificate (also available online)
- Facilities Management Certificate

Certificate programs are offered to provide training and education for students and working professionals in various areas of construction. Students can usually complete requirements in 3 to 4 Semesters. The credits earned through the certificate programs may also be applied toward completing a B. S. degree in Construction.

Admission Requirements:

Applicants must meet all SPSU admissions requirements for undergraduate admission.

Areas of Study

Construction Management Minor

Requirements

To be eligible for a minor in Construction Management, the student must complete the following courses:

- CM 2000 - Construction Graphics **3 Credits** *
- CM 3000 - Computer Applications in Construction **3 Credits** *
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

Total Hours: 15 Credits

NOTE: Students who have the prerequisite knowledge in these courses may substitute courses of greater or equal credit from the following list with the consent of the CM Department Chair:

- CM 3411 - Construction Estimating Software **2 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4511 - Construction Scheduling Software **2 Credits**
- CM 4560 - Construction Project Management **3 Credits**

Construction Management, BS

Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C:

- Group 1 - Take One Course from the Literature Group **3 Credits**
- Group 2 - Take One Course from the Art and Culture Group **3 Credits**

Area D: Laboratory Sciences

- Group 1 - Any Two Lab Sciences (PHYS 1111, PHYS 1111L required and CHEM 1211, CHEM 1211L recommended) *See Note 2 for PHYS 1111, PHYS 1111L **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits** recommended for Area D– **See Note 2**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Group 2 - MATH 2240 - Survey of Calculus **3 Credits**

Area E: Social Sciences

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** recommended for Area E– **See Note 1**
- Group 4 - Cultures and Societies **3 Credits**

Area F:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- SURV 2200 - Construction Measurements **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**

Major-CM Courses

- ECON 1101 - Introduction to Economics **3 Credits** (if needed)
- PHYS 1111 - Introductory Physics I **3 Credits** (If Needed)
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits** (If Needed)
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- CM 1000 - Orientation to Construction and Development **2 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
- CM 3040 - Building Information Modeling Applications I **3 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3180 - Mechanical and Electrical Building Systems **4 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3500 - Building Codes **2 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4710 - Construction Safety **4 Credits**

- CM 4760 - Construction and Real Estate Property Law **3 Credits**
- CM 4900 - Capstone Project **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- Concentration required (see choices below) **21-22 Credits**

General Concentration

- CM 3210 - Applied Structures **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Management Technique **3 Credits**

Land Development Concentration

- CM 3310 - Introduction to Development **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 4620 - Development Process II **3 Credits**

Specialty Concentration

- CM 3280 - Building Mechanical and Electrical Codes and Loads **4 Credits**
- CM 3480 - Mechanical and Electrical Systems Estimating **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 3190 - Sustainable Construction **3 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**

Facilities Management

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3290 - Facilities Management **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

- CM 4190 - Sustainable Operation & Maintenance **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Heavy Construction Management Concentration

- CM 3160 - Construction Equipment **3 Credits**
- CM 3170 - Heavy Construction Practices **4 Credits**
- CM 3230 - Heavy Materials & Temporary Structures **4 Credits**
- CM 3440 - Heavy Estimating **4 Credits**
- CM 4230 - Soils & Earthmoving **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**

Degree Program Total: 128

Note:

Note 1: *If ECON 1101 was taken to satisfy Area E, Group 3, a 3-hour Construction Elective can be substituted.*

Note 2: *If PHYS 1111 , PHYS 1111L were taken to satisfy Area D, Lab Science, a 4-hour Construction Elective can be substituted.*

Land Development Certificate

The Certificate in Land Development provides training and education to members of the real estate and land development field in construction and land development principles and practices. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Construction Management upon acceptance to SPSU.

Prerequisites must be met prior to enrollment in certain certificate courses.

Required Courses:

- CM 3310 - Introduction to Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**

Subtotal: 14 Credits

*may substitute courses from electives list if competency can be demonstrated

Elective Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Subtotal: 7 Credits (minimum)

Certificate Program Total: 21 Credits (minimum)

Project Management Construction Certificate

The professional Certificate in Project management is designed for working professionals who wish to further their knowledge in Construction Project Management. The certificate will also be useful for those individuals who wish to make a career change to the construction industry, or to those people who find themselves in the construction industry without first gaining a background in construction.

Prerequisites must be met prior to enrollment in certain certificate courses.

Required Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**

- CM 3110 - Residential and Light Construction Methods **3 Credits** OR
- CM 3160 - Construction Equipment **3 Credits**

- CM 4560 - Construction Project Management **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

Subtotal: 11-12 Credits

Elective Courses:

- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**

Subtotal: 9+ Credits

Certificate Program Total: 20+ Credits

School of Arts and Sciences

Biology and Chemistry

Biology

Offering:

Bachelor of Science in Biology

Visit www.spsu.edu/biology for more information.

The Bachelor of Science (BS) degree provides students a program of study in modern biology with optional tracks in biochemistry and molecular biology, pre-health professional studies, general biology, bioinformatics, and biotechnology.

The fast-moving discipline of biology is generating exciting careers, from medical scientist to genetic engineer and patent prosecution attorney. At Southern Polytechnic, you will learn in small classes and work in laboratories equipped with the newest scientific instrumentation. Faculty teach both labs and classes, including core courses offered both day and night. Bring a curious mind to our programs, and we'll help you develop a broad technical base for unlimited professional opportunities.

Balancing traditional studies with the growing emphasis on biotechnology, the Biology program gives students the knowledge and experience they need for advanced degrees or immediate employment. The general track offers the most diverse course work, and three others focus on particular interests: molecular/biochemistry, pre-professional, and

bioinformatics. Students can also pursue independent research in our labs, which feature high-speed centrifuges, thermal cyclers, environmental chambers, and other modern research tools.

Today the pace of technological change doubles every 18 months, and key developments are occurring in molecular science. Collaborating on experiments will prepare you for team-based work, whether your dream job is safeguarding public health, analysis of DNA samples, or creating gene therapies for "incurable" diseases. Many of our students plan on medical school, but our program prepares you for many careers that blend science with business, law, pharmacy, and other professions.

Biology students in all tracks are strongly encouraged to avail themselves of SPSU's cooperative education or internship linkages with industry as an integral part of their educational experience.

Faculty:

Mark Sugalski, *Ph.D., Chair of the Department of Biology and Chemistry*

Thomas Nelson, *Ph.D., Professor and Dean of Arts and Sciences*

Marcia Hesser, *Ph.D., Biology Lecturer*

Adrienne King, *Ph.D., Assistant Professor*

Jennifer Louten, *Ph.D., Assistant Professor*

Peter Sakaris, *Ph.D., Assistant Professor*

Rajnish Singh, *Ph.D.,* Associate *Professor*

Tseng Tsai-Tien, *Ph.D., Assistant Professor*

Matthew Weand, *Ph.D., Assistant Professor*

Nicole Smith, *Biology Lab Coordinator*

Biology career options:

Agribusiness expert
Conservation manager
Dentist
Dietitian
Drug design and developer
Environmental lawyer
High school teacher or university professor
Laboratory technician
Pharmacist
Physician
Physical or occupational therapist
Research molecular biologist or biochemist
Scientific editor
Veterinarian

Chemistry

Offering:

Bachelor of Science in Chemistry
Bachelor of Science in Chemistry with Teacher Education Track leading to grades 6-12 certification

Visit www.spsu.edu/chem for more information.

The Chemistry Program at Southern Polytechnic State University is part of the Department of Biology and Chemistry in the School of Arts and Sciences. The Bachelor of Science degree in Chemistry was approved by the Board of Regents in August, 2007. A minor in Chemistry is also offered. The Chemistry major offers three concentrations- General Chemistry and Materials Science, and a Teacher Education Track leading to certification.

The Chemistry major is designed to prepare students for careers in the traditional chemical sciences, as well as in biotechnology, environmental chemistry, and materials chemistry. The concentration of job growth in the pharmaceutical, medical, biotechnological, scientific and technical arenas has fueled the growth of opportunities within the chemistry industry as related to the development of new drugs and products used to combat illness and disease. Chemists are also needed to monitor and measure air and water pollutants to ensure compliance with local, state, and federal environmental regulations. Graduates trained in nanotechnology, the next frontier in material science, will likely participate in the development and manufacture of new materials that will help to solve new problems.

The Chemistry major with the Teacher Education track will provide the same strong chemistry program, plus the course work and experiences that will prepare students for a successful career in teaching high school chemistry. See Teacher Education.

The Faculty:

Jack Duff, *Senior Lecturer*

Daniel Ferreira, *Ph.D, Assistant Professor*

Lu Kang, *Ph.D., Assistant Professor*

Rajnish Singh, *Ph.D., Associate Professor*

Zvi Szafran, *Ph.D., Professor and Vice President for Academic Affairs*

Wei Zhou, *Ph.D.,* Associate *Professor*

Environmental Sciences

Offering:

Bachelor of Science in Environmental Science

Students completing this program will be prepared for positions in federal and state agencies, industry, or graduate and advanced professional programs in the environmental sciences. Graduates will be education in assessment and regulation of environmental pollution, sustainable management and conservation of wildlife and natural resources, and conducting environmental research. SPSU's BS degree program in Environmental Science will produce graduates that can address growing environmental needs and challenges within metro Atlanta and throughout the state of Georgia.

Faculty:

Mark Sugalski, *Ph.D., Chair of the Department of Biology and Chemistry*

Thomas Nelson, *Ph.D., Professor and Dean of Arts and Sciences*

Daniel Ferreira, *Ph.D, Assistant Professor*

Adrienne King, *Ph.D., Assistant Professor*

Peter Sakaris, *Ph.D., Assistant Professor*

Matthew Weand, *Ph.D., Assistant Professor*

Teacher Education

Offering:

Bachelor of Science in Biology with teacher education track leading to grades 6-12 certification
Bachelor of Science in Chemistry with teacher education track leading to grades 6-12 certification
Bachelor of Science in Physics with teacher education track leading to grades 6-12 certification
Bachelor of Arts in Mathematics with teacher education track leading to grades 6-12 certification

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Teacher certification will be provided by the Georgia Professional Standards Commission (PSC) after SPSU is approved by the PSC and accredited by the National Council for Accreditation of Teacher Education (NCATE). Approval and accreditation will follow PSC/NCATE campus visit in the winter of 2013. Therefore, SPSU's first teacher candidates will graduate in the Spring 2013. Questions should be directed to the Teacher Education Office in J-353.

Our professors are professionals with high school teaching and leadership experience, academic credentials, and experiences in teacher preparation.

The Faculty:

Alan Gabrielli, *Professor Emeritus, SPSUTeach Co-Director*
Cassandra Mathious, Master Teacher
George W. Stickel, *Associate Professor, Teacher Education Director and SPSUTeach Co-Director*
Jan Nourollahi, Master Teacher

Students pursuing this degree must complete:

Areas of Study

Biology Minor

To be eligible for a minor in Biology, the student must complete:

- A minimum of 18 semester hours of BIOL or BIOC coursework
- 9 of the 18 hours in BIOL/BIOC must be above the 2199 level
- Students who use BIOL 2107/BIOL 2107L and/or BIOL 2108/BIOL 2108L to satisfy Core D requirements cannot use these courses to satisfy requirements of the minor

Biology, B.S.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
  Take any 2 of the courses below (with labs) for a total of 8 hours:
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

Note:

PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Take any 4 courses (with labs) from the list below for a total of 18 hours*. (*Includes 2 carry-over credits from Area A and Area D.) Courses used as Area D requirements may not be selected.

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

Note:

PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L

Common Biology Major Requirements

A grade of "C" or better must be earned in all courses (excluding core areas A-E and free electives).

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Biology major must complete one program track (see below).

General Biology Track Requirements

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- At least 5 additional BIOL or BIOC courses above 2199 (excluding track requirements), with **at least one course** from each of the **Cellular Form and Function group** and the **Organismal Form and Function group 17-21 Credits**
- Free Electives **9-13 Credits**

Cellular Form and Function group

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4410 - Immunology **3 Credits**
- BIOL 4470 - Plant Physiology **3 Credits**

Organismal Form and Function group

- BIOL 3700K - Ichthyology **4 Credits**
- BIOL 4100K - Entomology **4 Credits**

- BIOL 4110 - Parasitology **3 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**

Biochemistry & Molecular Biology Track Requirements

- BIOL 3200K - Applied Molecular Biology Laboratory **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOC 3112K - Biochemistry II **4 Credits**
- At Least 4 additional BIOL or BIOC courses above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives 9 – **13 Credits**

Bioinformatics Track Requirements

- BIOL 2500K - Bioinformatics I - Tools & Databases **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 4510K - Bioinformatics II **4 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- At least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9 – 12 Credits**
- Free Electives **2 – 5 Credits**

Biotechnology Track Requirements

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4350K - Cell and Tissue Culture **4 Credits**
- BIOL 4600K - Biotechnology **4 Credits**
- At Least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9-11 Credits**
- Free electives **6-8 Credits**

Pre-Health Professional Track Requirements

- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- At Least 4 additional BIOL or BIOC Courses Above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **9-13 Credits**

Degree Program Total: 120

Biology, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
  Elective Credits **8 Credits** (Choose 2 from following)
- BIOL 3310K - Molecular Biology
- BIOL 4400K - Human Physiology
- BIOL 4460K - Human Anatomy
- BIOL 4600K - Biotechnology

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**

- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 126

Chemistry Minor

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- 10 additional hours of upper division (3000 level or higher) Chemistry or Biochemistry courses.

Total Hours: 26

Chemistry, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
  Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**

- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- NOTE: 1 credit each from Area A and Area D Math will be used to add to the 18 hours required in Area F.

Chemistry Major Requirements

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CHEM 2601 - Chemical Literature **2 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Chemistry major must complete one program track (see below).
- 1 Hour from Area A Math and Area D Math will be added to the total hours in the major.

General Chemistry Track

- Four additional BIOC, CHEM, MATH, or Science electives at the 3000 level or higher. **12-16 Credits**
- Free electives **11-15 Credits**

Materials Science Track

- MSCI 3101K - Introduction to Material Science **4 Credits**
- CHEM 4412 - Main Group Inorganic Chemistry **3 Credits**
- CHEM 4415 - Solid State Chemistry **3 Credits**
- Upper-level CHEM elective **3-4 Credits**
- Free electives **13-14 Credits**

Total Hours: 120 Hours

Chemistry, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits***
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**

- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

*NOTE

The following Physics sequences are recommentend to satisfy AREA D

PHYS 1111 /PHYS 1111L & PHYS 1112 /PHYS 1112L OR

PHYS 1211/PHYS 2211L & PHYS 2212 /PHYS 2212L

Environmental Science Minor

Requirements

- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3300K - Ecology **4 Credits**

Electives - Choose 7+ credits from the list below

- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3650 - Marine Biology **3 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 3350 - Oceanography **3 Credits**
- ENVS 3000 - Environmental Science Seminar **1 Credits**
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- ENVS 4300 - Environmental Ethics **3 Credits**

Minor Program Total: 15-18 Credits

Environmental Science, B.S.

Core Requirements

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

Environmental Science majors MUST take the courses listed below to satisfy prerequisites for the major courses.

- MATH 2253 - Calculus I **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Environmental Science Major Requirements

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 4200K - Zoology OR BIOL 4440K - Botany **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- ENVS 4300 - Environmental Ethics **3 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 4500 - Environmental Science Internship **3 Credits**
- Environmental Science Electives (see approved courses below) **12 Credits**

Environmental Science Electives (12 semester hours from the list below)

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3250K - Ecosystem Ecology **4 Credits**
- BIOL 3500 - Biostatistics **3 Credits**
- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3700K - Ichthyology **4 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3200K - Atmospheric Chemistry **3 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**
- ENVS 3150K - Environmental Toxicology **4 Credits**
- ENVS 3250 - Natural Resource Management **3 Credits**
- ENVS 3450 - Conservation Biology **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 121

Digital Writing and Media Arts

Writing and New Media

Offering:

The Bachelor of Arts in Writing and New Media

Our Bachelor of Arts in Writing and New Media degree is not your typical B.A. in Writing. Our program emphasizes the role and place of text and image within a world increasingly dependent upon writing and new media proficiency. Our project-driven courses challenge students to implement real-world applications in nearly every class. Specialized course-work and individual attention allow graduates to begin work immediately, satisfying the demand for professionals who can communicate using both text and image.

As part of the Bachelor of Arts in Writing and New Media, students take a number of courses across three content areas: textual production, visual production, and media and cultural studies. Our textual production area focuses on written communication through course offerings such as new media writing, journalism, and creative writing. Our visual production area offers students a chance to engage with visual media in courses such as film and video production, applied graphics, and digital photography. Finally, our media and cultural studies area combines hands-on production with a study of media in courses such as social media integration, publishing for new media, and media, culture, and society. In addition, students study classical rhetoric, develop high-level computer skills, and produce a portfolio that demonstrates their writing and new media proficiency to potential employers in fields such as new media publishing, freelance writing, content creation, mass communication, and marketing.

The Faculty:

Kami Anderson, *Assistant Professor*
Jeanne Bohannon, Assistant Professor
Terry Carter, *Professor*
Donna Colebeck, *Lecturer*
Laura Beth Daws, *Assistant Professor*
Jeff Greene, *Assistant Professor*
Kim Haimes-Korn, *Professor*
Kelsey Harr-Lagin, *Instructor*
Keith B. Hopper, *Professor*
Monique Logan, *Instructor*
Iraj Omidvar, *Associate Professor*
Jeffrey Orr, *Instructor*
Laura Palmer, *Associate Professor* and Department Chair
Cassie Race, *Instructor*
Nancy L. Reichert, *Associate Professor*
Cheryl Shinall, *Lecturer*
Pete Rorabaugh, *Assistant Professor*
Erin Sledd, *Instructor*
Herbert J. Smith, *Professor*
Debora Stefani, *Instructor*
Charlotte Stephenson, *Instructor*
Beth Stutzmann, *Senior Lecturer*
Katherine Taylor, *Instructor*
Uttam Kokil, Assistant Professor
Michael Lahey, Assistant Professor
Robin Mathis, *Lecturer*

The Program:

The Bachelor of Arts in Writing and New Media is designed to prepare students for a variety of communication careers.

Possible positions include:

Multimedia Developer and Designer
Video Production
Professional writer
Information designer
Multimedia specialist
Website designer and content developer

The program also can serve as a pre-professional background for students who plan to attend graduate school.

Students pursuing the degree must complete:

The Core Curriculum
Required upper-division courses in writing and
new media
Upper level area distribution in Textual Production, Visual Production, and
Media and Cultural Studies
Free electives

Students must make a grade of at least a C in all upper level classes.

New Media Arts

Offering:

The Bachelor of Arts in New Media Arts

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

The Faculty:

Kami Anderson, *Assistant Professor*
Jeanne Bohannon, Assistant Professor
Terry Carter, *Professor*
Donna Colebeck, *Lecturer*
Laura Beth Daws, *Assistant Professor*
Jeff Greene, *Assistant Professor*
Kim Haimes-Korn, *Professor*
Kelsey Harr-Lagin, *Instructor*
Keith B. Hopper, *Professor*
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Erin Sledd, *Instructor*
Herbert J. Smith, *Professor*
Debora Stefani, *Instructor*
Charlotte Stephenson, *Instructor*
Beth Stutzmann, *Senior Lecturer*
Katherine Taylor, *Instructor*
Uttam Kokil, Assistant Professor
Michael Lahey, Assistant Professor
Robin Mathis, *Lecturer*

The Program:

The Bachelor of Arts in New Media Arts is designed to prepare students for a variety of multimedia artist careers.

Possible positions include:

Web Design
Video Production
Multimedia Development and Design
Multimedia Artist

The program also can serve as preparation for students who plan to attend graduate school.

Students pursuing the degree must complete:

The Core Curriculum, Areas A-E
Required core courses in the major, Area F
Basic required courses in the major
Additional required courses in the major
Free electives

Students must make a grade of at least a C in all upper level classes.

Technical Communication

Offering:

Bachelor of Science in Technical Communication

Southern Polytechnic's degree in technical communication ranks among the best in the nation. Our faculty in Technical Communication includes two winners of the coveted Jay R. Gould award for outstanding teaching from the Society for Technical Communication. Because we are housed in a small engineering tech school, we can offer a much wider range of courses than similar programs at more traditional schools, and we have the up-to-date hardware and software to support them. You will get a solid grounding in rhetoric as well as hands-on experience with new media tools and technologies.

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings. For students interested in distance learning options, Southern Polytechnic also offers a 15-credit undergraduate certificate in technical communication delivered entirely online.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

The Faculty:

Kami Anderson, *Assistant Professor*
Jeanne Bohannon, Assistant Professor
Terry Carter, *Professor*
Donna Colebeck, *Lecturer*
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Keith B. Hopper, *Professor*
Monique Logan, *Instructor*
Iraj Omidvar, *Associate Professor*
Jeffrey Orr, *Instructor*
Laura Palmer, *Associate Professor* and Department Chair
Cassie Race, *Instructor*
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Erin Sledd, *Instructor*
Herbert J. Smith, *Professor*
Debora Stefani, *Instructor*
Charlotte Stephenson, *Instructor*
Beth Stutzmann, *Senior Lecturer*

Katherine Taylor, *Instructor*
Uttam Kokil, Assistant Professor
Michael Lahey, Assistant Professor
Robin Mathis, *Lecturer*

The Program:

The Bachelor's program in Technical Communication is designed to prepare students for a variety of communication careers.

Technical Communication - Bachelor of Science Possible positions include:

Technical writer
Documentation specialist
Technical editor
Information designer
Multimedia specialist
Proposal writer
Graphics specialist
Instructional designer or training specialist
Website designer and content developer

The program also can serve as a pre-professional background for students who plan to attend graduate school.

Students pursuing the degree must complete:

The Core Curriculum
Required upper-division courses in technical communication
A concentration in one area of technical communication
Additional elective courses in the major
Free electives

Students must make a grade of at least a C in all upper level classes.

Areas of Study

English and Professional Communication, BA

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Science **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  Or
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Course in Behavioral Science **3 Credits**
- Group 4- Course in Cultures and Societies **3 Credits**

Area F

Required Courses, 12 Credits
- COMM 2170 - Introduction to Media Studies **3 Credits**
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
- ENGL 2500 - Language and Meaning **3 Credits**
  Choose Two Courses, 6 Credits
- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework, as approved by the Department (6 Credits Max)
- Any Foreign Language, 2001 or higher (6 Credits Max)

Upper Level Required Courses (19 Credits)

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**

- ENGL 3045 - New Media Writing **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- ENGL 4110 - Writing in Collaborative Environments **3 Credits**
- ENGL 4800 - Project Portfolio **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**

Upper Level Area Distribution (27 Credits)

- A minimum of 6 credit hours must be taken in each of the three tag areas.
- No more than 6 credits may be at the 2000 level.
- Up to 6 credits outside of courses listed below, with departmental approval.

1. **Textual Production Area**

   COMM 2000 - Business Communication
   COMM 3250 Newspaper Practicum
   ENGL 3081 Studies in Genre
   ENGL 3082 Science and Literature
   ENGL 3010 Science Writing
   ENGL 3025 Creative Writing Workshop
   ENGL 3040 Article and Essay Workshop
   ENGL 3045 New Media Writing
   TCOM 3015 Environmental Writing
   TCOM 3020 Grant and Proposal Writing
   TCOM 4000 Professional Editing

2. **Visual Production Area**

   ARTS 2010 Intro to Drawing
   ARTS 3010 Drawing for New Media
   ARTS 3000 Visual Thinking
   ARTS 3170 Digital Photography
   TCOM 3430 Foundations of Graphics
   TCOM 4040 Applied Graphics
   TCOM 4170 Film and Video Production
   TCOM 4400 Advanced Design for the Web

3. **Media & Cultural Studies Area**

   ENGL 3180 Film as Literature
   ENGL 4010 Publishing for New Media
   ENGL 4170 Media and Narrative
   COMM 3060 Media, Culture, and Society
   COMM 3065 International Communication
   TCOM 4045 Foundations of Multimedia
   TCOM 3145 Social Media Integration

Free Electives (15 credits)

Degree Program Total: 121

For additional information about the B.A. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

New Media Arts, BA

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**

- MATH 1113 - Pre-calculus **4 Credits**
  OR
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

Required Courses 6 Credits
- ARTS 2020 - History and Principles of Design **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**

Studio Courses, Choose Three- 9 Credits
- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 2110 - Painting and Mixed Media **3 Credits**
- ARTS 2220 - 2D and 3D Design **3 Credits**
- ARTS 2903 - Music Theory **3 Credits**

Choose One- 3 Credits
- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

MAJOR REQUIREMENTS

Basic Required Courses in the Major (24 Credits)

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3100 - History of New Media Arts **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ARTS 4100 - Media Arts Studio **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- ARTS 4800 - Senior Portfolio **3 Credits**

Additional Courses in the Major (18 Credits; Choose 6)

- ARTS 3010 - Drawing for New Media **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- ARTS 4270 - Advanced Digital Video **3 Credits**
- ARTS 4600 - Directed Study **3 Credits**
- ARTS 4700 - Internship **3 Credits**
- ARTS 4903 - Special Topics **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 4040 - Applied Graphics **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

Free Electives

Free Electives 18 Credits

Degree Program Total: 121

For additional information about the B.A. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Professional Writing Minor

After taking COMM 2000, Business Communication, **take only 12 more hours**, 9 of which must be at the 3000 or 4000 level, to receive a Minor in Professional Writing. Your minor credential will be designated on your SPSU transcript provided you earn a C or better in each course.

Requirements

- COMM 2000 - Business Communication **3 Credits**

Additional Courses Choose Four of the Following (12 credits)

Students majoring in Business Administration are required to take COMM 2000 as part of their existing program of study. TCOM 2010 will serve as a blanket substitution for COMM 2000 for Business Administration students interested in Professional Writing minor.

This minor is not available to students majoring in either Technical Communication or English and Professional Communication.

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3050 - Journalism **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3020 - Proposal Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

Total Hours: 15

Technical Communication Minor

After taking TCOM 2010 Technical Writing, you will take **only 12 more hours,** 9 of which must be at the 3000 or 4000 level. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

Requirements (6 credits)

- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
  OR
- TCOM 2030 - Research in Technical Communication **3 Credits**

  Students whose major already requires TCOM 2010 should take TCOM 2020 **and** TCOM 2030 (blanket substitution will apply).

Additional Courses for Minor (9 credits)

Choose any class with the TCOM course prefix, 3000-level or higher.

This minor is not available to students majoring in either Technical Communication or English and Professional Communication.

Total Hours: 15

Technical Communication, BS

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  OR
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History   **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4-Cultures and Societies **3 Credits**

Area F

Required Courses- 9 Credits
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
- TCOM 2030 - Research in Technical Communication **3 Credits**
Choose Three- 9 Credits
- ARTS 2010 - Introduction to Drawing **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
  Any programming language (recommended CSE 1301J)

Major Requirements

Upper Level Required Courses in the Major (18 Credits)

- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- ENGL 4110 - Writing in Collaborative Environments **3 Credits**
- TCOM 3120 - Technical Communication: Theory and Practice **3-0-3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 4800 - Project Portfolio **3 Credits**

Additional Courses in Major (12 Credits)

- Take any ARTS, COMM, ENGL, or TCOM Course
- No more than 6 credits may be at the 2000 level.
- Up to 6 credits outside of the Department with departmental approval.
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Major Concentrations

Choose one concentration from the following: (Information Design or Digital Media and Graphics)

Information Design (15 Credits)

- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 3030 - Instructional Design **3 Credits**
- TCOM 3045 - Fundamentals of Information Design **3 Credits**
- TCOM 3070 - User Assistance **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 3245 - Analytics and Search Engine Optimization (SEO) for Communicators **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4120 - Usability Testing **3 Credits**

Digital Media and Graphics (15 Credits)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4040 - Applied Graphics **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

Degree Program Total: 121

For additional information about the B.S. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Mathematics

Offering:

Bachelor of Science in Mathematics
Bachelor of Arts in Mathematics with Teacher Education Track leading to grades 6-12 certification

A Bachelor of Science in Mathematics encompasses the breadth of Mathematics and its applications in a small, friendly, and supportive setting. Courses in differential equations, analysis, calculus, discrete mathematics, and linear and abstract algebra combine a theoretical and applied understanding of these areas. Additional courses in Physics and Computer Science explore how Mathematics can be used to solve real-world problems.

Programs in Mathematics - The programs in Mathematics are designed to prepare the student for further study in mathematics, education, or other subjects or for employment in a variety of fields.

Mathematics is the foundation upon which all other technical fields rest, and as such, is the perfect choice for students who have a profound mathematical curiosity, and a desire to apply their problem solving skills. The soaring demand for employees with specialized mathematical expertise allows graduates to follow a wide variety of career paths. Many work in fields that, while not specifically described as mathematical, require clear reasoning, logical thought, and a love and understanding of mathematics. Persons with degrees in mathematics may be found pursuing such diverse careers as actuarial science, education, consulting, systems analysis and quality control, and jobs in industry or government. Others go on to graduate work in mathematics or other mathematics-related fields, such as Computer Science.

The B.S. degree candidate will, through the nature of the mathematics electives and the opportunities offered by other programs, have a scientifically and technically oriented program which allows entry into many fields of science, engineering, and technology as well as education and business.

The B.A. candidate will have a strong background in mathematics coupled with the necessary education courses that will lead to teacher certification.

Through the second major in Mathematics and the minor in Mathematics, students in other fields may acquire a substantial background and competence in Mathematics.

Our professors are professionals with a sincere commitment to teaching. The Mathematics Department at SPSU boasts a faculty that includes a National Science Foundation grant recipient, four University System of Georgia Teaching/Learning Grant recipients, as well as several awards for outstanding teaching by the Student Government Association and the SPSU faculty.

The Faculty:

Keshav Raj Acharya, *Lecturer*
Dhruba Adhikari, *Assistant Professor*
Zhu Cao, *Assistant Professor*
Shangrong Deng, *Associate Professor*
Meighan I. Dillon, *Professor*
Steven R. Edwards, *Professor*
Joseph N. Fadyn, *Professor*
Joel C. Fowler, *Associate Professor*
William Griffiths, *Assistant Professor*
Sarah Holliday, *Assistant Professor*
Yang Kang, *Lecturer*
Maurice J. LeBlanc III, *Lecturer*
Andrew G. McMorran, *Associate Professor and Department Chair*
Nicolae Pascu, *Assistant Professor*
Laura Ritter, *Assistant Professor*
Jennifer Vandenbussche, *Assistant Professor*
Long L. Wang, *Associate Professor*
Hua Xu, *Lecturer*
Taixi Xu, *Associate Professor*

The mathematics portion of the major under the B.S. degree consists of three components: Required Courses, Mathematics Electives, and Guided Electives. Although the Required Courses provide the bulk of the mathematics in the degree, they also provide a framework for other series of Mathematics courses to be included under Mathematics Electives and Guided Electives. Students planning to attend graduate school in Mathematics are urged to select these courses carefully in consultation with an advisor. Students planning to seek employment in business or industry should

consider a minor in a related field, such as computer science. A computer science minor can be completed within the Guided Electives of the Mathematics degree.

Teacher Education

Offering:

Bachelor of Science in Biology with teacher education track leading to grades 6-12 certification
Bachelor of Science in Chemistry with teacher education track leading to grades 6-12 certification
Bachelor of Science in Physics with teacher education track leading to grades 6-12 certification
Bachelor of Arts in Mathematics with teacher education track leading to grades 6-12 certification

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Teacher certification will be provided by the Georgia Professional Standards Commission (PSC) after SPSU is approved by the PSC and accredited by the National Council for Accreditation of Teacher Education (NCATE). Approval and accreditation will follow PSC/NCATE campus visit in the winter of 2013. Therefore, SPSU's first teacher candidates will graduate in the Spring 2013.

Questions should be directed to the Teacher Education Office in J-353.

Our professors are professionals with high school teaching and leadership experience, academic credentials, and experiences in teacher preparation.

The Faculty:

Alan Gabrielli, *Professor Emeritus, SPSUTeach Co-Director*
Cassandra Race, *Instructor*
Laura Speer, *Master Teacher*
George W. Stickel, *Associate Professor, Teacher Education Director and SPSUTeach Co-Director*

Students pursuing this degree must complete:

The Core Curriculum	60
Required Courses	30
Education Courses	33

Areas of Study

Mathematics Minor

To obtain a minor in Mathematics, the student must complete:

- MATH 2255
- An additional 14 semester hours of Mathematics courses at the 2300 level or higher

At least 9 of these additional 14 hours must be at the 3000 level or higher.

Courses used to fill other requirements at SPSU (excluding core areas A through E) may also be used to obtain a minor in Mathematics.

For example, if you take MATH 2306 to fulfill a requirement in the Management curriculum, you may also use it in a math minor. However, you may not use MATH 1113 to fulfill the math minor because it is in area A of the core curriculum.

TOTAL HOURS: 18

Mathematics, BS

Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- CSE 1302 - Computer Science II **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**

- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Mathematics Electives (9 Credits)

Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.

Guided Electives (20 Credits)

May include additional mathematics courses or other courses chosen in consultation with an advisor. May not include mathematics courses numbered less than 2000, or courses for which dual credit is not allowed.

Degree Program Total: 121

Mathematics Second Major

A student completing the B.S. degree in a field other than Mathematics may receive a second major in Mathematics at the same time to accompany that degree by completing the following courses. Note that additional courses, which are the prerequisites to these courses, are required by implication.

Mathematics Second Major Requirements

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Second Degree in Mathematics

Students who receive a degree from SPSU in a field other than Mathematics may receive a B.S. with a major in Mathematics by completing all the requirements for the Mathematics degree. The same courses may be used to fulfill requirements for both degrees, but there must be at least 30 semester hours used to fulfill the requirements for the Mathematics degree which are not used to fulfill the requirements for any other degree.

Mathematics, Education Track, BA

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
  CSE 1301 **3 Credits** (Choose from following)
- CSE 1301C - Programming & Problem Solving I
- CSE 1301E - C++ Programming for Engineers
- CSE 1301J - Programming & Problem Solving I

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 3696 - Geometry **3 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH Electives **3 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- MAED 2010 - Functions and Modeling **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 123

Physics

Offering:

Bachelor of Science in Physics - General Concentration
Bachelor of Science in Physics - Electrical Engineering Concentration
Bachelor of Science in Physics - Mechanical Engineering Concentration
Bachelor of Science in Physics with a Teacher Education Track leading to 6-12 grades Certification

Visit physics.spsu.edu for more information.

A Bachelor of Science degree in Physics at Southern Polytechnic State University is a good choice for students desiring positions in industry that are on the cutting edge of engineering and science. These positions offer great opportunity at the entry level and a strong career path with excellent earning potential. A Physics major at SPSU can also add a Teacher Education Track leading to certification. See Teacher Education.

The flexibility afforded by a SPSU physics degree is most attractive. With the proper choice of a minor field of study, our physics majors are prepared to obtain employment in such diverse areas as science and/or engineering positions in industry, technical sales, or scientific programming.

Because most physics majors go on to graduate study, we offer a capstone review course. Those planning to work immediately after graduation may opt to do independent projects that position them competitively for the marketplace.

Physics researchers are using lasers to detect biological and chemical agents, analyzing cell-based communications to learn how heart disease occurs, and testing pigments to authenticate works of art. This science is a keystone of technological progress; it also underlies all of engineering, and it is a useful second major for those pursuing degrees in mathematics, electrical or mechanical engineering technology. All of our physics students receive job offers that put them in the front lines of fascinating careers and maximize their earnings potential.

Our graduates have been hired by respected organizations like Applied Decision Analysis, Inc., Argonne Labs, Barco Chromatics, BellSouth Mobility, Cape International Management, Inc., Flexible Products Company, Georgia Department of Agriculture, Gallet & Associates, Hulsey Seed Laboratory, Inc., Institute of Paper Science & Tech, Inc., Law Engineering & Environment Serv. Inc., Lockheed, Lucas Body Systems NA, NASA, National Science Foundation, Nortel Telecommunications, Nova Engineering & Environment, Osmose Wood Preserving, Inc., Southern Company, and VA's CDI Corporation.

SPSU physics majors meet the educational portion of requirements for registration as a professional engineer in most states. For students wishing to continue in higher education at the graduate level, additional career paths are available in teaching, research, law, medicine, and engineering. There is a strong demand for high school physics teachers. Adding the Teacher Education track will prepare students for certification to teach secondary physics.

Advisors for our physics majors work closely with students in choosing electives to meet very individual career objectives. Students may also choose to earn double majors in physics and engineering technology.

Two significant advantages of majoring in physics at SPSU are our small, personalized classes and our outstanding distinguished faculty. All physics courses for our majors are taught by faculty holding Ph.D. degrees.

The Faculty:

David Garafolo, *Lecturer*
R. Luminda Kulasiri, *Associate Professor*
Russell S. Patrick, *Professor*
Philip E. Patterson, *Assistant Professor and Department Chair*
Kisa Ranasinghe, *Assistant Professor*
Eric A. Smith, *Lecturer*
Michael G. Thackston, *Professor*
James B. Whitenton, *Professor*

Teacher Education

Offering:

- Bachelor of Science in Biology with teacher education track leading to grades 6-12 certification
- Bachelor of Science in Chemistry with teacher education track leading to grades 6-12 certification
- Bachelor of Science in Physics with teacher education track leading to grades 6-12 certification
- Bachelor of Arts in Mathematics with teacher education track leading to grades 6-12 certification

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

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Questions should be directed to the Teacher Education Office in J-353.

Our professors are professionals with high school teaching and leadership experience, academic credentials, and experiences in teacher preparation.

The Faculty:

Alan Gabrielli, *Professor Emeritus, SPSUTeach Co-Director*
Cassandra Race, *Instructor*
Laura Speer, *Master Teacher*
George W. Stickel, *Associate Professor, Teacher Education Director and SPSUTeach Co-Director*
Erin Sutherland, Physics Teacher

Students pursuing this degree must complete:

Areas of Study

Physics Minor

To be eligible for a minor in Physics, the student must complete at least 15 hours of course work in physics with at least 10 hours in upper division physics courses.

Physics, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Choose One Course from the Literature Group **3 Credits**
- Group 2- Choose One Course from the Art and Culture Group   **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
  Choose Any Two Lab Science Courses for a total of **8 Credits**
- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**

- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

- PHYS 1211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**
- PHYS 4430 - Capstone Physics Project **1 Credits**
- PHYS 4250 - Quantum Theory of Two-State Systems **2 Credits**
- Directed Electives approved by the program **9 - 15 Credits**
- Upper Division Physics Electives/Concentrations **4 - 10 Credits**

Degree Program Total: 121

A Second Degree in Physics

Students who are earning B.S. degrees in other fields at Southern Polytechnic State University may also earn a second major in Physics.

SPSU students who wish to earn a second major in physics will be required to take the following 22 hours of course work:

Second Degree Requirements

- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K - **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**

Physics, Electrical Engineering Concentration, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**

- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies   **3 Credits**

Area F

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- PHYS 1211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EE 3301 - Circuits Analysis I **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 3705 - Signals and Systems **3 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- Free Electives **4 Credits**

Degree Program Total: 121

Physics, Mechanical Engineering Concentration, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- Free Electives **2 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

Degree Program Total: 121

Concentration in Mechanical Engineering

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**

- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

Physics, Teacher Education Concentration, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 Credits**

- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410 - Electronics Laboratory **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**
- Physics Electives **4 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

Social and International Studies

General Studies

Offering:

> The Associate of Science Transfer Degree
> General Studies Transfer Program

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

International Studies

Offering:

> Bachelor of Science in International Studies
> Minor in International Studies

The Faculty:

Albert Churella, *Associate Professor*
J. LaJuana Cochrane, *Associate Professor and Psychology Coordinator*
Ravi Ghadge, *Assistant Professor*
Stacy Grant-Williams, *Lecturer*
Marianne Holdzkom, *Assistant Professor*
Kyunghum Jung, *Assistant Professor*
Rebecca LeFebvre, *Lecturer*
Julie Newell, *Professor and Chair of Department*
Thomas J. Nisley, *Associate Professor*
Bernice Nuhfer-Halten, *Professor and Language Coordinator*
Thomas E. Rotnem, *Professor, International Studies Coordinator, and Political Science Coordinator*
Leigh Sharma, *Assistant Professor*
William Skutans, *Lecturer*
Carl Snook, *Assistant Professor*
Roger Soiset, *Lecturer*
Mark D. Vickrey, *Senior Lecturer*

By offering an International Studies degree with minors in a variety of areas, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess technological skills and knowledge that will allow them to deal with the new demands of the global economy.

Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function.

The International Studies degree will prepare graduates for employment in:

Government
Graduate study
Intelligence
International business
Pre-law
Public policy
The military
The transportation industry
The travel industry
Work in the non-profit sector

Students pursuing this degree must complete:

The Core Curriculum	60
Required Upper Division Core in International Studies	24
A Minor	15-18
Directed International Electives	9
Free Electives	7-12

Any courses taken to satisfy degree program requirements in International Studies Required Upper Division Core, the student's Minor, and the student's Directed International Electives must be passed with a grade of "C" or better.

Political Science

Offering:

Bachelor of Science in Political Science

The Faculty:

Richard Bennett, *Associate Professor and Director of International Programs*
Albert Churella, *Associate Professor*
J. LaJuana Cochrane, *Associate Professor and Psychology Coordinator*
Jamye Hickman, *Assistant Professor*
Marianne Holdzkom, *Assistant Professor*
Julie Newell, *Professor and Chair of Department*
Thomas J. Nisley, *Assistant Professor*
Bernice Nuhfer-Halten, *Professor and Language Coordinator*
Thomas E. Rotnem, *Professor, International Studies Coordinator, and Political Science Coordinator*

William Skutans, *Lecturer*
Roger Soiset, *Lecturer*
Carl Snook, *Assistant Professor*
Mark D. Vickrey, *Senior Lecturer*

The Political Science program is part of the Department of Social and International Studies, in the School of Arts and Sciences at Southern Polytechnic State University. By offering a Political Science degree, SPSU seeks to produce graduates who have a higher degree of technical and statistical expertise than those found in customary political science programs elsewhere and also have hands-on experience in applied research.

Political Science degree will prepare graduates for employment in:

Government
Graduate study
Intelligence
International business
Pre-law
Public policy
The non-profit sector

Students pursuing this degree must complete:

The Core Curriculum   60

Required Upper Division Core in Political Science   33

Directed International Electives   12

Free Electives   15

Any courses taken to satisfy degree program requirements in Political Science Required Upper Division Core and the student's Directed International Electives must be passed with a grade of "C" or better.

Psychology

Offering:

Bachelor of Science in Psychology

The Faculty:

Richard Bennett, *Associate Professor and Director of International Studies*
Albert Churella, *Associate Professor*
J. LaJuana Cochrane, *Associate Professor and Psychology Coordinator*
Jamye Hickman, *Assistant Professor*
Marianne Holdzkom, *Assistant Professor*
Julie Newell, *Professor and Chair of Department*
Thomas J. Nisley, *Assistant Professor*
Bernice Nuhfer-Halten, *Professor and Language Coordinator*
Thomas E. Rotnem, *Associate Professor and International Studies Coordinator*
William Skutans, *Lecturer*

Roger Soiset, *Lecturer*
Carl Snook, *Assistant Professor*
Mark D. Vickrey, *Lecturer*

By offering a Psychology degree with concentrations in engineering psychology, industrial/organizational psychology, and general psychology, SPSU seeks to produce graduates who have a balanced, career-based education in psychology with a wide range of skills and practical knowledge.

The Psychology degree will prepare graduates for employment in:

> Government
> Graduate study
> Work in the corporate sector
> Work in the non-profit sector

Students pursuing this degree must complete:

The Core Curriculum	60
Required Upper Division Core in Psychology	32
A particular track	28

Any courses taken to satisfy degree program requirements in Psychology Required Upper Division Core and the student's Concentration must be passed with a grade of "C" or better.

Areas of Study

General Studies, A.S.

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

All students must take:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

(or other math as specified in the University core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

Choose ONE Literature Course:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Choose ONE Arts or Language Course:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**

- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

8 hours science (two courses with labs):

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Math:

- MATH 1113 - Pre-calculus **4 Credits**
  (or other math as specified in the University core)

Area E: Social Sciences (12 credits)

Group 1 Amerian Perspectives- (3 credits):

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:
- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Group 2 Historical Perspectives (3 credits):

Choose ONE of the following:
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

Group 3 Behavioral Science Perspectives (3 credits):

Choose ONE of the following:
- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

Group 4 Global Perspectives (3 credits):

Satisfies the Global Perspectives overlay.

Choose ONE of the following:
- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Elective Courses:

- At least one additional course in humanities (Area C) **3 Credits**

- At least one additional course in social sciences (Area E) **3 Credits**
- Any humanities, social science, math, lab science or any area F course from any program. **11-12 Credits**

Total Program Hours: 60

History Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

World History (3 credits):

Choose ONE course not used to satisfy core Area E-2:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

US History (6 credits):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
  If HIST 2111 or HIST 2112 has been used to satisfy Core Area E-1, any 3-hour HIST course may be substituted.

Upper-Division History courses (9 credits):

Any **9 credits** of 3000- or 4000-level HIST courses.

Total Program Hours: 18

International Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

Regional Studies (3 credits):

Choose ONE of the following:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

Language Requirement:

Student must complete FREN 1002, GRMN 1002, or SPAN 1002 OR demonstrate proficiency in a non-English langage at an equivalent level.

Electives (12 credits):

Choose FOUR courses from the following list NOT used to satisfy core requirements in Areas A-E. No more than TWO may be numbered below 3000.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
  Any regional studies course NOT used to satisfy the Regional Studies requirement above.
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**

- MGNT 4145 - International Management **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  Special topics courses in HIST, POLS, PSYC may be used as electives with topic-specific departmental approval.

Total Program Hours: 15

International Studies, BS

By offering an International Studies degree with a required minor, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess field-specific skills and knowledge that will allow them to deal with the new demands of the global economy. Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function. The International Studies degree will prepare graduates for graduate study in a number of possible fields and for employment in:

- Government
- Intelligence
- International business
- Pre-law
- Public policy
- The military
- The non-profit sector
- The transportation industry

- The travel industry

Requirements

Core Areas A through E

Area A: Essential Skills (9 credits)

Grade of C or better requied in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:
- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**

- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following (language course recommended):
- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture = 3 credits; lab = 1 credit; K-course=4 credits, including lab).

Choose TWO science courses with lab:
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:
- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**

- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits):

Take ALL of the following:
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
  Or 6 credit hours of any non-English language at an equivalent level.
- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

Required Courses in Major (29 credits):

Grade of C or better required. Take ALL of the following:

- IS 1000 - International Studies Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
  Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
  To be taken in one of the last two terms before graduation (taught Spring only):
- IS 4800 - International Studies Capstone **3 Credits**

Directed International Electives (9 credits):

Grade of C or better required. Choose THREE of the following:

Take THREE of the following:

- ECON 2106 - Principles of Microeconomics **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4000 - Regional Studies - General **3 Credits**
  or any Regional Studies (IS 400X) not used to satisfy Required Courses in the Major
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
  or any 3000- or 4000- level SPAN
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  OR any IS special topics course. Special topics courses in HIST, POLS, PSYC may be used with topic-specific departmental approval.

Minor 15-18 Hours

International Studies majors must complete at leat one of the minors offered at SPSU (in any department or program). Department policy requires that at least 9 hours in a minor not be used to meet any other reqirement *except free electives*. University policy requires that no hours used in Core Areas A-E may used toward any other requirement.

Free Electives

Additional credit hours to bring the minimum total credits to bring the total hours up to the 120 required for graduation. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Degree Program Total: 120

Latin American Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- ES 1100 - Ethnic Studies **3 Credits**
  Latino / Hispanic Ethnic Studies ONLY; may not also be used to satisfy E-4 core
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**

Total Program Hours: 15

Political Science Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- POLS 1101 - American Government **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
  Choose ONE of the following:
- POLS 3601 - Contemporary World Politics **3 Credits**
  OR
- POLS 4301 - International Political Economy **3 Credits**
  Choose ONE of the following:
- POLS 3701 - Seminar in American Politics **3 Credits**
  OR
- POLS 3801 - Political Behavior **3 Credits**

Total Program Hours: 18

Political Science, BS

There is a growing need for graduates in political science. The acquisition of methodological skills, coupled with an understanding of the political process at local, state, national and international levels, allows for employment in a variety of public and private venues where research techniques are highly prized. As well, the communication, analysis, and critical reasoning skills that our graduates obtain place them well in a competitive job market, where continual learning is essential and interpersonal and cross-cultural competencies are greatly needed.

While there are other political science programs offered in Georgia, SPSU's program will be unique in several respects:

- The SPSU program is highly quantitative in focus, offering students three additional quantitative courses in political science research methods and analysis beyond the norm required in other political science programs.
- The SPSU program offers students various inter-disciplinary course options through its Directed International Electives module.
- The SPSU program further establishes a strong international focus by encouraging students to become proficient in a second language.

Students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace. Graduates with a bachelor's degree in political science find positions as committee staffers, budget analysts, communications consultants, research/policy analysts, corporate public affairs advisors, foreign service officers, writers/authors/political commentators, journalists, foundation staffers, lobbyists, marketing analysts, or public opinion analysts. Additionally, SPSU's program's training in the development of research, critical thinking, and communication skills will open opportunities in for-profit/non-profit business settings, international and U.S.-based non-governmental organizations and foundations. Graduates of SPSU's BS in Political Science will be more than qualified to take advantage of the local, regional, national, and international employment opportunities offered by metro Atlanta and the State of Georgia, as well as to pursue post-baccalaureate educational opportunities in either political science or the field of law.

Requirements

All students must take:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Core Areas A-E

Area A: Essential Skills (9 credits)

Grade of C or better required in courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following (language recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

Area D: Science and Math (12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (Minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG *may* need to take HIST 2911: U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation. Please check with your advisor.

Choose ONE of the following (POLS 1101 American Government is required in Area F and may not be used here):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits)

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
  or 6 credits of any non-English language at an equivalent level
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 1101 - American Government **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

Required Courses in Major (36 credits):

Grade of C or better required.

- POLS 3001 - Comparative Politics **3 Credits**

- POLS 2800 - Research Design **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**
- POLS 3801 - Political Behavior **3 Credits**
- POLS 4100 - Applied Methodology **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
  Choose ONE of the following:
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
  Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
  In one of final two semesters:
- POLS 4801 - Capstone: Political Science Practicum **3 Credits**

Directed International Electives: (12 credits)

Grade of C or better required. Take any FOUR of the following courses:

- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**

- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  Up to 6 additional credits in Regional Studies:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

Free Electives (12 credits):

Any college-level credit not used above may be applied here. *Free electives may be used toward a minor and are exempt from the 9 hour rule.*

Degree Program Total: 121

Pre-Law Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses (6 credits):

Take TWO of the following courses NOT used to satisfy Core Area E-1:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Elective Courses (12 credits):

Pick any FOUR of the following:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**

- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**

Total Program Hours: 18

Psychology Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- PSYC 1101 - Introduction to General Psychology **3 Credits**
  (If PSYC 1101 has been used for Core Area E-3, any 2000-Level PSYC course may be substituted in the minor)
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
  AND **6 Credits** in any PSYC 3000- or 4000- level courses

18 Credits

Psychology, BS

Southern Polytechnic State University's Bachelor of Science degree in Psychology provides students a program of study in modern psychology. Specifically, the program embraces a strong international component with a multi-disciplinary curriculum that provides a balanced, career-based education in psychology with a wide range of skills and practical knowledge. The concentrations offered cover the subject matter from seventeen major subfields coupling science and practice. This broad spectrum provides a rich context so that students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace.

Career opportunities for graduates with a B.S. in Psychology include: employment counselors, corporate counselor trainees, interviewers, personnel analysts, systems analysts, rehabilitation assistants, mental health assistants, probation officers and writers. Additionally, training in the development of research and writing skills will open opportunities in profit/non-profit business settings, public affairs, public health, sales and administrative support.

The concentrations offered are:

- Engineering Psychology (involves the science of applying an understanding of human behavior interacting with the design of systems and products that improve human performance)

- Industrial/Organizational Psychology (involves the science of applying an understanding of human behavior with improving productivity and the workplace quality)
- Clinical and Counseling Psychology (involves the science of applying an understanding of human behavior with an emphasis on mental disorders and their treatment)

Requirements

Core Areas A-E

Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**

- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K courses=4 credits, including lab). Biology recommended.

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**

- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (Minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE course (sociology recommended):

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**

- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits)

- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- PSYC 2273 - Foresic Psychology **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
  (or 3 hours of PSYC 1XXX or 2XXX elective credit if PSYC 1101 has been used in Area E-3)
- PSYC 2011 - Cognitive Psychology **3 Credits**
- PSYC 2270 - Engineering Psychology **3 Credits**
- PSYC 2271 - Clinical and Counseling Psychology **3 Credits**

Required Courses in Major (32 credits):

Grade of C or better required; take all of the following:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- PSYC 1000 - Orientation to Psychology **2 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 2401 - Psychology of Diversity **3 Credits**
- PSYC 3000 - Junior Seminar **3 Credits**
- PSYC 3020 - Physiological Psychology **3 Credits**
- PSYC 3031 - Experimental Psychology **4 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4050 - History and Systems of Psychology **3 Credits**
- PSYC 4800 - Psychology Capstone Seminar **3 Credits**

Concentrations

Choose and complete one of the concentrations below:

Engineering Psychology (28 credits)

Required Courses (22 credits):

Grade of C or better required; take all of the following:

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
  The following must be taken in the order listed:
- CSE 1301J - Programming & Problem Solving I **4 Credits**
  (be sure it's 1301**J**)
- IT 1324 - Advanced Programming Principles **4 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**

Free Electives (6 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Industrial / Organizational Psychology (28 credits)

Required Courses (12 credits):

Grade of C or better required; take all of the following:

- MGNT 4115 - Human Resource Management **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

Concentration Electives (9 credits):

Grade of C or better required; choose THREE of the following:

- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**

Free Electives (7 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Clinical and Counseling Psychology (28 credits)

Required Courses:

Grade of C or better required; take all of the following:

- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3230 - Abnormal Psychology **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**

Concentration Electives (9 credits):

Grade of C or better required; choose THREE from the following:

- PSYC 2273 - Foresic Psychology **3 Credits**
- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 3305 - Developmental Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

Free Electives (10 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Degree Program Total: 120

Public Policy Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses (6 credits):

- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

Electives (9 credits):

Choose THREE of the following:

- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

Special Topics

Special Topics in POLS, STS, or IS may also be used as electives with topic-specific approval of the department.

Total Program Hours: 15

Spanish Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

2000-Level (6 credits):

May not also be used to satisfy Core Area C-2:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

3000-Level (9 credits):

Any 9 credits in 3000-level SPAN courses.

Total Program Hours: 15

Consider the Certificate in Professional Spanish as well:

Requirements for Professional Certificate

Spanish Professional Certificate (Undergraduate)

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

All Courses Required for the Spanish Minor

Requirements for Spanish Minor

4000-Level Electives (6 credits):

Chose SIX credits from the following:

- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**

Learning Project (3 credits):

- SPAN 4003 - Service Learning Project **3 Credits**

Oral Proficiency Interview (OPI):

After all coursework is completed, student must take the American Council on the Teaching of Foreign Language OPI.

Total Program Hours: 9 credits beyond the minor

School of Computing and Software Engineering

Computer Science and Software Engineering

Computer Science

Offering:

The Bachelor of Science in Computer Science (ABET Accredited)
The Bachelor of Arts in Computer Science

Why study Computer Science at SPSU?

What field of study has seen more technological developments that have become part of our daily lives in just a matter of the past few decades than any other? Developments such as the Internet and email, search engines, wi-fi, etc., virtually unknown a few decades ago, make computer science one of the strong contenders for this distinction!

Combining fundamental theory with hands-on lab work in current programming languages, the Computer Science degree gives students a breadth of knowledge -- of operating systems, architecture, networks, and databases -- in a high-tech environment. Our numerous labs are equipped with the latest technology, including a real-time lab with the most current commercial-grade software tools and an IT lab with its own server for management and IT courses. And in our classrooms, professors teach using networked computers and smart boards, and technologies that allow for interactive demonstrations of programs at work, and other innovative pedagogical techniques.

About the Program

As preparation for diverse employment opportunities, the Computer Science program offers a wide range of Mathematics and Computer Science courses, such as Programming Language Concepts, Data Structures, and Algorithm Analysis. Students may elect to earn a Bachelor of Science degree in Computer Science, which offers a mix of rigor and exposure to current technologies, or the Bachelor of Arts in Computer Science, which offers flexibility, e.g., with a minor in one additional area of study. For student convenience, many classes are offered in the evenings, especially as students make progress toward graduation.

The Faculty

Each faculty member in Computer Science has his or her own specialty, from research to business applications. Our faculty members have completed research fellowships with the U.S. Air Force and other government labs, programmed business applications for Blue Cross Blue Shield, and developed and managed systems and software for IBM Corporation. They pass their expertise in the professional field along to their students, who go on to succeed professionally as well.

Patrick O. Bobbie, *Professor*
Bob Harbort, *Professor*
Chih-Cheng Hung, *Professor*
Edward Jung, *Assistant Professor*
Chia-Tien (Dan) Lo, *Associate Professor*
Briana B. Morrison, *Assistant Professor*
Patricia R. Pierce, *Senior Lecturer*
Kai Qian, *Professor*

Are there learning opportunities outside the classroom?

Computer science students at SPSU can participate in the Aerial Robotics Club on campus, which placed second in the 2001 international competition sponsored by the Association for Unmanned Vehicle Systems for an automatic pilot

guiding program that was written for SPSU's aerial robotics machines. Students also compete in annual programming contests sponsored by the Association of Computer Machinery, a national professional organization with student chapters worldwide. Students have internship and co-op opportunities, as well.

What can I do with a Computer Science degree?

With a Computer Science degree, you are equipped to enter a variety of positions, from software development at a Fortune 500 company to game development, to just about anywhere your skills can take you – including winning an Oscar for animation technologies, as our alumni did in 2005! Graduates are often involved in software development, innovative applications and uses of computers, and new and improved solution techniques to hard problems. They gain many useful skills that are immediately applicable, but are well-founded in the fundamental concepts and are well on their way to lifelong learning in the rapidly changing technological workplace.

Will I find employment?

According to a recent report from the Bureau of Labor Statistics, the top ten fastest jobs are either in health care or related to computing. Our close proximity to Atlanta opens up a world of internship, co-op, and full-time work opportunities to our students, as Atlanta is home to many major corporations that welcome SPSU students.

The Programs:

The baccalaureate programs in Computer Science emphasize the entire scope of computer science, ranging from basic hardware principles through the system and application software levels to the use and management of such systems.

The ABET-accredited (www.abet.org) Bachelor of Science degree is designed for students wanting a maximum technical preparation for their career.

The Bachelor of Arts degree is designed for students wanting to apply their knowledge of computer science to another area of study.

Both degrees have Core requirements, Major requirements, and Directed Electives. The Core provides basic coursework to ensure that the graduate is well-rounded as an educated individual.

The Major contains those CS and SWE courses considered fundamental to the field, regardless of any specialization. The Directed Electives provide depth beyond the Core to support the student's professional preparation.

- Both degrees require a grade of "C" or better in all CS, CSE, SWE, and IT courses applied to degree requirements.

Students in the BS degree program are required to have at least three science-related courses subject to the following rules:

- Two lab science courses used to satisfy Area D of the core
- The remainder may be taken as lab sciences or as other approved courses that provide breadth and/or depth in the natural sciences or otherwise explore the scientific method

There is also a five-year BSCS-MSSWE option for qualifying students.

This program is likely to be of great interest to those who pursue the BSCS program and are interested in entering the job market with a high degree of preparedness. On top of a strong CS foundation, graduates from this combined program will be trained in software project management, an in-depth understanding of requirements, design, testing, support, metrics, etc. and the processes of software development and management (if they choose MSSWE), or with advanced course work in the dynamic field of computer science (if they choose MSCS). Students can start taking MS

core graduate classes right away, even before graduating with the BSCS. Specifically, while still working on the BSCS, students can take two graduate courses applicable to the target MS program as electives in their BSCS degree, and the courses also count towards the MS program. Students will be able to complete the MS program by taking only 10 more graduate courses in an additional year.

Computer Game Design and Development

Offering:

The Bachelor of Science in Computer Game Design and Development
The Minor in Computer Game Design and Development

Why study Computer Game Design and Development at SPSU?

The Bachelors of Science in Computer Game Design and Development equips students and graduates with the skills and knowledge to apply computing and software engineering techniques to the design and production of digital media for entertainment, research, and education. As a specialization within the field of computing, game design and development builds on and applies expertise in computing hardware and software to create engaging and immersive multimedia systems.

About the Program

The program exposes students to the breadth of the field in the areas of digital media, human-computer interaction, the history and theory of gaming, game design, 2D and 3D graphics, simulation, modeling, software engineering, artificial intelligence, data structures, and algorithms. Current and emerging domains including online games (and massively multiplayer games or MMOG), casual games, mobile games, and serious/educational games are explored. Students are also required to select an upper-level concentration within the program to ensure depth in their program of study. While these concentrations will change as the field evolves, current offerings include media-production, distributed-mobile, education-serious, planning-management, and simulation-informatics.

One of the more innovative aspects of the program is the inclusion of a significant studio experience for students in their senior year. This two-course sequence provides an opportunity for students to be mentored by faculty and their peers in the first semester and in turn mentor fellow students in the second semester. The year-long capstone project developed in these courses is a vital component in graduates' portfolios and will be showcased on the program's Web site. Moreover, giving the recruitment and hiring practices in the digital entertainment and computer gaming industry, portfolios are crucial in helping graduates secure employment in the industry.

The program places significant importance on developing students' communication, team, critical thinking, and problem solving skills, skills that were identified as vital by industrial partners and employers. Courses integrate written and oral presentations as well as team-based design and development projects to ensure students build these skills.

The Faculty

Each faculty member in Computer Game Design and Development has his or her own specialty, from mobile games to graphics. Our faculty members have worked on research projects and grants with the National Science Foundation

(NSF) and other agencies, developed augmented reality applications, built mobile games, and worked on various serious and games-for-learning projects. They pass their experiences and expertise in the field of computing and game development to their students to help them succeed professionally as well.

Jeffrey W. Chastine, *Associate Professor*
D. Michael Franklin, *Assistant Professor*
Richard A. Gesick, *Lecturer*
Chao Peng, *Associate Professor*
Jon Preston, *Professor*

BS CGDD Program Educational Objectives

The Bachelor of Science in Computer Game Design and Development prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Computer Game Design and Development graduates will be successful professionals in the field with solid fundamental knowledge of gaming and computing, making valuable technical contributions to the design, development, and production of computer game systems and related applications.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including learning new, rapidly-changing technologies and applying them in their game systems development.

BS CGDD Student Outcomes

Each graduate of the program should be able to:

1. Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
2. Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
3. Utilize mathematics and science in game design and development
4. Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
5. Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
6. Demonstrate an understanding of social, professional, global, and ethical issues related to computing
7. Work effectively in teams on system development projects
8. Demonstrate effective oral and written communication skills

Other Program Goals

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

- Scholarship and research in regional, national, and international venues
- Service and partnerships with professional societies and non-profit organizations in the field
- Create a strong community of students and alumni

- Offer an annual computer game design competition sponsored by SPSU and industrial partners
- Develop an online digital portfolio that showcases the work of students, alumni, and faculty
- Host and sponsor events in which students, alumni, and industrial partners connect and build relationships

Serve the community and industry

Software Engineering

Offering:

Bachelor of Science in Software Engineering

Why study Software Engineering at SPSU?

Software engineering represents the fastest growing segment of software professionals -- men and women who solve problems and issues in the development and engineering of mission-critical software systems to meet the requirements of business and industry in a *reliable, secure, timely, and cost-effective* manner. At Southern Polytechnic, our Software Engineering students learn real-time strategies and procedures that will give them a competitive edge in the market. Coursework includes software design techniques, software quality, software project management, and electives such as component-based software, embedded systems design, game design, etc. This is the only Software Engineering program at the undergraduate level in Georgia and one of the few in the nation.

The Faculty:

Each faculty member in Software Engineering has his or her own specialty, e.g., object-oriented design, large scale systems, user-centered design, etc. Some of our faculty members have extensive industry experience managing systems and software development. They pass their expertise in the professional field along to their students, who go on to succeed professionally as well.

Sheryl L. Duggins, *Professor*
Jonathan Lartigue, *Assistant Professor*
Patricia Roth Pierce, *Senior Lecturer*
Hassan Pournaghshband, *Professor*
Frank Tsui, *Associate Professor*

Are there learning opportunities outside the classroom?

Our students can participate in the Aerial Robotics Club on campus, which placed second in the 2001 international competition sponsored by the Association for Unmanned Vehicle Systems for an automatic pilot guiding program that was written for SPSU's aerial robotics machines. Students have internship and co-op opportunities, as well.

What can I do with a Software Engineering degree?

With a Software Engineering degree, you are equipped to enter a variety of positions, from real-world, large-scale software development and testing to software project management. You gain a foundation in computer science and learn many useful skills and tools that are immediately applicable, and are well on your way to lifelong learning in the rapidly changing technological workplace.

Will I find employment?

According to a recent report from the Bureau of Labor Statistics, the top two of ten jobs with the fastest growth and highest median salaries are related to systems and applications software engineering. Our close proximity to Atlanta opens up a world of internship, co-op, and full-time work opportunities to our students, as Atlanta is home to many major corporations that welcome SPSU students.

The Program:

SWE Program Educational Objectives:

The Bachelor of Science in Software Engineering prepares our graduates to reach the following goals 3 to 5 years beyond graduation:

- Software Engineering graduates will be successful professionals in the field with solid fundamental knowledge of software engineering, who can effectively analyze, design, and develop high-quality software systems.
- Graduates utilize and exhibit strong communication and interpersonal skills, as well as professional and ethical principles when functioning as members and leaders of multi-disciplinary teams.
- Graduates will apply their foundations in software engineering to adapt to rapidly changing environments using the appropriate theory, principles, and processes.
- Graduates are sufficiently prepared for their first and subsequent positions, as they are independent learners, including being accepted into or completing advanced degree programs.

Student Outcomes:

At the time of graduation, all Software Engineering students will have demonstrated:

a. An ability to apply knowledge of mathematics, science, and engineering
b. An ability to design and conduct experiments, as well as to analyze and interpret data
c. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
d. An ability to function on multidisciplinary teams
e. An ability to identify, formulate, and solve engineering problems
f. An understanding of professional and ethical responsibility
g. An ability to communicate effectively
h. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
i. A recognition of the need for, and an ability to engage in life-long learning
j. A knowledge of contemporary issues
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
l. An ability to appropriately analyze, design, verify, validate, implement, apply, and maintain software systems
m. An ability to appropriate apply discrete mathematics, probability and statistics, and relevant topics in computer science and support disciplines to complex software systems
n. An ability to work in one or more significant application domains
o. An ability to manage the development of software systems

The degree program includes Core requirements, Computer Science Foundations, the Software Engineering Core, Software Engineering Advanced Topics, Application Domains, Directed Electives and Other Required Courses. There is also a specialty track that allows students to choose a specialty area for more concentrated study. The Directed Electives provide depth beyond the Core to support the student's professional preparation.

Areas of Study

Computer Game Design and Development Minor

To be eligible for a minor in Computer Game Design and Development, the student must complete the following courses with a grade of "C" or better. Any upper level (3000+) courses that are required in the major may not be used as credit for the minor. Other upper level CGDD courses may be used as substituted. Students must have at least 9 upper level CGDD hours not required for their major (CGDD courses taken as electives for your major bachelor degree can be used to complete the minor).

Minor in Game Design and Development Program Objectives:

- Provide students with game design and development knowledge that can be applied in their major area of study
- Provide students with fundamental game design and development skills

Minor in Game Design and Development Learning Outcomes

- Demonstrate skills fundamental to game design and development
- Demonstrate knowledge in at least two subfields of game design and development

Required Courses

- CSE 1301 -Any 1301 courses (C, J or E) Programming and Problem Solving 1 **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- Three additional upper-level CGDD courses **9+ Credits**

Minor Program Total: 18+ Credits

Computer Game Design and Development, BS

Students must earn a C or better in all the major courses (CSE, CS, SWE, and CGDD).

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2254 - Calculus II
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112K - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**

OR

- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
  One credit from MATH 2253 & MATH 2254 will be added to Area F to complete the 18 hour requirement.

Requirements

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
  Advanced Topics:
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4303 - Educational and Serious Game Design **3 Credits**
- CGDD 4803 - Studio **3 Credits**
- CGDD 4814 - Capstone **4 Credits**
- Free Electives **6 Credits**
- Concentration (listed below): **9-10 Credits**

Note:

Students are strongly recommended to take at least one Physics course for their Area D because some later courses in this program (in particular the CGDD 4113 and CGDD 4603) may rely upon Physics. Students who are interested in the Simulation-Informatics concentration (see below) may find Biology or Chemistry beneficial instead of Physics.

Students taking the Educational-Serious or Planning Management concentration should consult with their advisor to ensure they have the required prerequisite courses needed (using free elective) since some of these concentration courses require specific electives that must be taken prior to the concentration courses.

BS CGDD Upper-level Concentration

While the required courses in the degree ensure students are exposed to the breadth of the field of computer game design and development, it is also imperative that students are given flexibility to customize their experience and apply the knowledge gained in their required courses. To this end, the degree requires students select a concentration in which they may gain a depth of knowledge within their chosen area.

The following are suggested concentrations, but students may select a customized plan of study and set of courses under with their advisor's approval.

Media-Production

- MATH 3312 - Linear Algebra **4 Credits**
- CGDD 4113 - 3D Modeling and Animation **3 Credits**
- CGDD 4603 - Production Pipeline and Asset Management **3 Credits**

Distributed-Mobile

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**

Educational-Serious

- 6 hours of approved TCOM courses
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**

Planning-Management (pick 3 of 4)

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 4663 - Software Project Management **3 Credits**

Simulation-Informatics

- CSE 3153 - Database Systems **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

BS CGDD Program Objectives

Meet the educational needs of students and prepare them for careers within the discipline

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

Create a strong community of students and alumni

Serve the community and industry

BS CGDD Learning Outcomes

Upon graduation, students will be able to:

- Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
- Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
- Utilize mathematics and science in game design and development
- Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
- Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
- Demonstrate an understanding of social, professional global, and ethical issues related to computing
- Work effectively in teams on system development projects
- Demonstrate effective oral and written communication skills

Degree Program Total: 121

Computer Science Minor

To be eligible for a minor in Computer Science, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level CS hours out of the 18 required credit hours.

Requirements:

- CSE 1301 - Any CSE 1301 (C, J or E) Programming & Problem Solving I **4 credits**
- CSE 1302 - Any CSE 1302 (C, J or E) Programming & Problem Solving II **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- Two additional upper-level CS courses 6+
  NOTE: CS 3424 requires MATH 2345 - Discrete Mathematics as a pre-requisite.

Total Hours: 18 Credits

Computer Science, BA

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
- Take any 2 of the courses below (with labs):

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- Free Elective **(1 credit hour)**
- 1 hour each from Areas A & D **(2 credit hours)**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Upper-Level CS Elective (or Approved UL CGGD/SWE/IT Elective) **4 Credits**
- Upper-Level Free Electives (UL CS must be at least 4 hours, and the total of CS UL and UL free electives is 10 hours) **6 Credits**
- Approved Minor **15 Credits**
- Free Electives **5 Credits**

Degree Program Total: 123

Computer Science, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2253 - Calculus I **4 Credits**
  Take any two courses (plus labs) from the following for a total of 8 hours:
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- 1 hour each from Areas A & D **(2 credit hours)**

- Free Elective **(1 credit hour)**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
  OR
- MATH 1401 - Intro to Statistics **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4893 - Computer Science Capstone **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Approved Math Elective (MATH 2255, 2306, 2335, 3000 level or 4000 level) **3 Credits**
- Upper Level CS Electives (See approved list below) **9 Credits**
- Free Electives (Except MATH 1111) **5 Credits**

Approved Courses for CS Upper Level Electives

- IT 4153 - Advanced Database **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- SWE 3843 - Embedded Systems Construction and Testing **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4633 - Component-Based Software Development **3 Credits**
- SWE 4743 - Object-Oriented Development **3 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**

- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

Degree Program Total: 122

Software Engineering Minor

To be eligible for a minor in Software Engineering, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level SWE hours.

Program Objectives

Students earning a minor in Software Engineering will:

- Possess broad foundations in software engineering concepts and methodologies so they may contribute to the effective design and implementation of large scale software.

Learning Outcomes

Students earning a Software Engineering minor will have demonstrated the ability to:

- Apply SWE practices and process to software design and development.
- Demonstrate the ability to gather, analyze, develop, verify and/or validate artifacts of software engineering systems.
- Use software tools effectively in some phases of software development.

Minor Requirements

- CSE 1302 - Programming & Problem Solving II **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- Three additional upper-level SWE courses **9 Credits**

Note:

SWE 1302 has a pre-requisite of SWE 1301 .

Total Hours: 16 hours

Software Engineering, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2254 - Calculus I **4 Credits**
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**
- PHYS 2211 - Principles of Physics I **3 credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 credit**
- PHYS 2212K - Principles of Physics II **3 credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 credit**

NO CREDIT FOR PHYS 1111K or PHYS 1112K.

In lieu of PHYS 2211, 2211L, an additional lab science course may be taken to form a sequence with one of the science courses in area D.

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**

- ECON 2107 - Introduction to Economic Analysis **3 credits** (Note: If area E is transferred, student must take ECON 2107 in lieu of free electives.)
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Required Courses

- TCOM 2010 - Technical Writing **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** (see note below)
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Sciences **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301C or CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C or CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4663 - Software Project Management **3 Credits**
- SWE 4713 - SWE Application Domain **3 Credits**
- SWE 4724 - Software Engineering Project **4 Credits**
- SWE Upper Level Electives - Choose 2 courses from the approved list, at least one must be an SWE course **6 Credits**
- Free Electives - (Excludes MATH 1111, PHYS 1111, 1111L and PHYS 1112, 1112L) **5 Credits**

Free Electives

Excludes Math 1111, PHYS 111K and PHYS 1112K.

Note:

A grade of "C" or better must be earned in all CSE, CS, SWE, CGDD, and IT courses applied to degree requirement.

Upper Level Electives

Choose any 2 courses - at least one must be an SWE course.

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- SWE 3843 - Embedded Systems Construction and Testing **3 Credits**
- SWE 4633 - Component-Based Software Development **3 Credits**
- SWE 4743 - Object-Oriented Development **3 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**
- CS 4243 - Systems Programming **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**
- CS 4283 - Real-Time Systems **3 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- CS 4533 - Digital Image Processing **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**

Degree Program Total: 127

Information Technology

Offering:

Bachelor of Science in Information Technology
Bachelor of Applied Science in Information Technology (BASIT)

Bachelor of Applied Science in Health Information Technology (BAS-HIT)
Online Bachelor of Science in Information Technology (WebBSIT)

Information Assurance and Security Certificate
Health Information Certificate
Information Assurance and Security Certificate

The Bachelor of Science in Information Technology (BSIT) degree has the primary objective of meeting the high demand for professional degrees in the strategy, development, and administration of integrated computing, management, and information technology systems. This offering is targeted at the metro Atlanta region, and will serve those students interested in combining computer science, management, and information technology curricula. The WebBSIT program is designed for people seeking a Bachelor's degree in Information Technology, but whose lifestyles make it difficult to attend traditional classes on campus. This program is in collaboration with other University System institutions. The Bachelor of Applied Science in Information Technology (BASIT) degree is designed to serve students who hold an associate of applied science (AAS) or associate of applied technology (AAT) degree in a computing discipline from a community college or a Technical College System of Georgia (TCSG) institution. Students will transfer in approximately 2-years from their AAS or AAT degree and will complete additional general education and upper-level IT courses to complete their bachelor of applied science degree.

Information Technology (IT) is the term used to describe the convergence of Computer Science, Management, and Information Systems. IT emphasizes the integration and performance of information technology planning, development, implementation, and operation, and development of the infrastructure to support the processes necessary to achieve organizational objectives.

The Faculty:

Bob Brown, *Senior Lecturer*
Richard Halstead-Nussloch, *Professor*
Lei Li, *Associate Professor*
Svetlana Peltsverger, *Associate Professor*
Han Reichgelt, *Professor and Dean*
Rebecca Rutherfoord, *Professor*
Dawn Tatum, *Lecturer*
Susan Vande-Ven, *Senior Lecturer*
Ming Yang, *Assistant Professor*
Chi Zhang, *Assistant Professor*
Guangzhi (Jack) Zheng, *Assistant Professor*

The Program:

The courses in the major include courses from:

- Information technology
- Management
- Computer Science
- Software Engineering

The degree has Core requirements, major requirements, a required elective track and general electives. The Major contains those courses considered fundamental to the information technology field and the tracks give the student some flexibility in choice. **A grade of "C" or better must be earned in all IT, CS, CSE, MGNT, and SWE courses applied to degree requirements.**

Areas of Study

Information Technology Minor

To be eligible for a minor in Information Technology, the student must complete the following courses with a grade of "C" or better:

Information Technology Minor Requirements

- IT 1324 - Advanced Programming Principles **4 Credits** or
  CSE 1302J - Programming & Problem Solving II **4 credits**

- IT 3123 - Hardware/Software Concepts **3 Credits** or
- CS 3224 - Computer Organization & Architecture **4 Credits**

- IT 3203 - Introduction to Web Development **3 Credits** or
- CSE 3153 - Database Systems **3 Credits**

And one of the Following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**

Total Hours: 14-15 Credits

Information Technology, BAS

This program is designed for students who have completed an AAS or AAT degree from a two year technical college in a computing discipline.

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**

- STS 2400 - Science, Technology, and Society **2 Credits**

AREA C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 1113 - Pre-calculus **(3 credits - 1 hour to Area F)**

Take any 2 of the courses below (with labs) for a total of 8 hours:

- ASTR 1000K - Introduction to the Universe **4 credits**
- BIOL 2107K - Principles of Biology I **4 Credits**
- BIOL 2108K - Principles of Biology II **4 Credits**
- CHEM 1211K - Principles of Chemistry I **4 Credits**
- CHEM 1212K - Principles of Chemistry II **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credit**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credit**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory **1 credit**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credit**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Students who do not have enough hours from their technical block and general education hours to equal 60 semester hours, may receive "elective" credit hours to make up the deficient number of hours.

Technical Block Course **(3 credit hours)**
Technical Block Course **(4 credit hours)**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- Area D Carryover credit **1 credit**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- Technical Block Remainder Courses from AAS **(30 credit hours)**
- Directed Electives - Choose 2 from the course list below. **6 credits**

Directed Electives

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**

Degree Program Total: 122

All IT, CS, CSE and SWE designator courses must have a grade of 'C' or better.

Information Technology, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

AREA C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2240 - Survey of Calculus or MATH 2253 - Calculus I **3 Credits**
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112K - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits** OR
- IET 2227 - Introduction to Statistics **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits** OR
- MATH 2345 - Discrete Mathematics **3 Credits**
- Carryover credit from Area A Math **1 Credit**

Requirements

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4423 - Unix/Linux **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4983 - IT Capstone **3 Credits**
- Free Electives **7 Credits**
- Concentration or Technical Electives (see listing below) **12 Credits**

Degree Program Total: 122

Tracks

Choose one of the tracks below and complete 3 of their courses. The 4th elective can be from the same or different track.

Enterprise Systems Track

- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4673 - Virtual IT Systems **3 Credits**
- IT 4713 - Business Intelligence Systems **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Information Assurance & Security Track

- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Health Information Technology Track

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4513 - Electronic Health Record Systems **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Mobile and Web Track

- CSE 3203 - Overview of Mobile Systems **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4213 - Mobile Web Development **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Information Technology, BS (Online) WebBSIT

WebBSIT Curriculum

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

Area F (18 Credits)

- WBIT 1100 - Introduction to Information Technology **3 Credits**
- WBIT 1310 - Programming and Problem Solving **3 Credits**
- MATH 1401 - Intro to Statistics **3 Credits** (Available from WebBSIT participating institutions or through eCore®)
- WBIT 2000 - The Enterprise and IT **3 Credits**
- WBIT 2300 - Discrete Mathematics for IT **3 Credits**
- WBIT 2311 - Programming and Problem Solving II **3 Credits**

Required Core Courses (42 Credits)

- WBIT 3010 - Technical Communication **3 Credits**
- WBIT 3110 - Systems Analysis and Design **3 Credits**
- WBIT 3111 - Information Technology Project Management **3 Credits**
- WBIT 3200 - Database Design, Development and Deployment **3 Credits**
- WBIT 3400 - Introduction to Multimedia **3 Credits**
- WBIT 3410 - Web Applications Development **3 Credits**
- WBIT 3500 - Architecture and Operating Systems **3 Credits**
- WBIT 3510 - Data Communications and Networking **3 Credits**
- WBIT 3600 - Introduction to E-Commerce **3 Credits**
- WBIT 4020 - Professional Practices and Ethics **3 Credits**
- WBIT 4030 - Senior Project **3 Credits**
- WBIT 4112 - Systems Acquisition, Integration and Implementation **3 Credits**
- WBIT 4120 - Human-Computer Interaction **3 Credits**
- WBIT 4520 - Information Security **3 Credits**

Concentration/Electives (18 Credits)

- WBIT 4601 - Customer Relationship Management **3 Credits**
- WBIT 4602 - IT Strategy Seminar **3 Credits**
- WBIT 4610 - IT Policy and Law **3 Credits**
- Free Electives (not within the WebBSIT) - **9 Credits**

Total Required Hours: 120 Credits

School of Engineering

Offering

       Bachelor of Science Degrees
       Master of Science Degrees

Southern Polytechnic State University offers a variety of engineering programs, including Civil Engineering, Construction Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics Engineering, Software Engineering, and Systems Engineering at the undergraduate level, and Software Engineering and Systems Engineering at the Masters level. Individuals interested in these programs should see the appropriate sections of this catalog.

Courses listed in this section of the catalog that carry the ENGR prefix, are general in nature, and are taken by more than one engineering or engineering technology major. Courses specific to individual majors may be found in the listing for the specific program.

Civil and Construction Engineering

Civil Engineering

Offering:

       Bachelor of Science degree in Civil Engineering

Civil engineering is the oldest of the engineering disciplines and involves the planning, design, and construction of facilities essential to modern life.

Graduates can look forward to employment by construction companies; city and county engineering departments; state and federal transportation organizations (such as the Georgia Department of Transportation); and civil engineering consulting and design firms. Graduates have the qualifications to enter careers in areas such as, but not limited to, transportation engineering, structural engineering, environmental engineering, geotechnical engineering, water resource engineering, and construction engineering. Typical job titles for graduates include civil engineer, construction engineer, project engineer, planner, project supervisor, consulting engineer, and design engineer.

Civil Engineering requires rigorous training in basic engineering principles along with the development of skills in the areas of planning and management of construction projects and the associated systems and resources. Graduates in the area of Civil Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of civil engineering projects and to serve in key leadership positions within the engineering profession.

Faculty:

Samuel Beadles, *P.E., Professor and Department Chair*
Sung-Hee Kim, *Ph.D., P.E., Associate Professor*
Wasim Barham, *Ph.D., P.E., Assistant Professor*
M.A. Karim, *Ph.D., P.E., Assistant Professor*
Metin Oguzmert, Ph.D., P.E., Assistant Professor
Jidong Yang, Ph.D., *P.E., Assistant Professor*
Tien M. Yee, Ph.D., *Assistant Professor*

Construction Engineering (ABET Accredited)

Offering:

Bachelor of Science degree in Construction Engineering

The Construction Engineering program is part of the School of Engineering at Southern Polytechnic State University. In this major the traditional areas of civil engineering and construction are combined to produce graduates who are able to work effectively in all aspects of the construction industry.

Accreditation

The Bachelor of Science in Construction Engineering program is accredited by the Engineering Accreditation Commission of ABET, www.abet.org.

Construction Engineering requires rigorous training in basic engineering principles along with the development of skills in the areas of planning and management of construction projects and the associated systems and resources. Graduates in the area of Construction Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of construction projects and to serve in key leadership positions within the construction industry.

Graduates can look forward to employment by construction companies; city and county construction departments; state and federal transportation organizations (such as the Georgia Department of Transportation); and civil engineering consulting and design firms. Graduates have the qualifications to enter careers in construction related fields as well, including construction engineering design, construction operations and management, construction planning and cost estimating. Typical job titles for graduates include construction engineer, project engineer, project supervisor, construction manager, and design engineer.

The Construction Engineering curriculum offers a balance of course work in engineering analysis, engineering design, construction practice, and construction management. Graduates of the program are expected to be able to:

- Create, design, analyze and improve construction processes, devices or systems.
- Apply modern construction practices and materials to construction designs.
- Apply and interpret appropriate software in developing construction engineering problems.
- Be capable of professional registration nationwide.
- Be capable of pursuing varied graduate education in engineering.
- Recognize careers in the construction engineering field and be prepared for advancement in the industry.

Faculty:

Samuel Beadles, P.E., *Professor and Department Chair*
Sung-Hee Kim, *Ph.D., P.E., Associate Professor*
Wasim Barham, *Ph.D., P.E., Assistant Professor*
M.A. Karim, *Ph.D., P.E., Assistant Professor*
Metin Oguzmert, Ph.D., P.E., Assistant Professor
Jidong Yang, Ph.D., *P.E., Assistant Professor*
Tien M. Yee, Ph.D., *Assistant Professor*

Areas of Study

Civil Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- MATH 2254 - Calculus II **4 Credits**

Area E

- Area E Group 1 American Context **3 Credits**

- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**

Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ENVS 2202 - Environmental Science (ECORE) **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **3 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3202 - Design of Concrete Structures **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3708 - Geotechnical Engineering Lab **1 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 3703 - Environmental Engineering II **3 Credits**
- CE 3704 - Environmental Engineering Lab I **1 Credits**
- CE 4103 - Design of Steel Structures **3 Credits**
- CE 4105 - Foundation Design **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4179 - Transportation Engineering Lab **1 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CE XXXX Technical Electives **6 Credits**

Degree Program Total: 130

The Civil Engineering degree requires a grade of "C" or better in all CE, SURV, and ENGR courses applied to degree requirements.

CE Technical Electives: (6 hrs)

- CE 4704 - Engineering Hydraulic Analysis and Design **3 Credits**
- CE 4705 - Advanced Soil Mechanics **3 Credits**
- CE 4706 - Pavement Engineering **3 Credits**
- CE 4707 - Design of Wood Structures **3 Credits**
- CE 4708 - Hazardous Waste Engineering **3 Credits**
- CE 4709 - Advanced Structural Analysis **3 Credits**

Construction Engineering, BS

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Cultures and Societies **3 Credits**

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **3 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- CM 3160 - Construction Equipment **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CE 4202 - Steel and Concrete Design **4 Credits**
- CM 4710 - Construction Safety **4 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**

Degree Program Total: 130

The Construction Engineering degree requires a grade of "C" or better in all CE, SURV, ENGR and CM courses applied to degree requirements.

Electrical and Mechatronics Engineering

Electrical Engineering

Offering:

Bachelor of Science degree in Electrical Engineering

The Electrical Engineering program is part of the School of Engineering at Southern Polytechnic State University. Electrical Engineering is arguably the largest discipline of engineering. It focuses on the application of the principles of electricity and its use with electrical devices and systems. In this energy conscious world, a thorough understanding of energy and its uses is essential to the success of an electrical engineer.

Nearly every industry utilizes electrical engineers. Graduates have the qualifications to enter careers in areas such as, but not limited to, telecommunications, computer engineering, manufacturing, the aerospace industry, power generation and distribution, alternative energy, robotics, and automation. Typical job titles for graduates may include electrical engineer, electronics engineer, telecommunications engineer, project engineer, planner, project supervisor, consulting engineer, and design engineer.

Electrical Engineering requires rigorous training in basic engineering principles along with the development of skills in the areas of planning and management of design projects and the associated systems and resources. Graduates in the area of Electrical Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of electrical engineering projects and to serve in key leadership positions within the engineering profession.

The Bachelor of Science in Electrical Engineering was approved by the Board of Regents in August 2009.

Faculty:

Lance Crimm, *P.E., Professor and Department Chair*

Sumit Chakravarty, *Ph.D., Assistant Professor*

Yusun Chang, *Ph.D., Assistant Professor*

Sandip Das, *Ph.D., Assistant Professor*

Bill M. Diong, *Ph.D., Associate Professor*

Hoseon Lee, *Ph.D, Assistant Professor*

Kuo-Sheng Ma, *Ph.D. Assistant Professor*

Mechatronics Engineering

Offering:

Bachelor of Science degree in Mechatronics Engineering

Mechatronics Engineering is the integration of mechanical and electrical engineering disciplines with an infusion of computer science and software engineering. Mechatronics engineers use this integrated approach to bring higher performance to engineering systems, and to make them more reliable and more cost-effective. Professionals with skills in this area have been identified as a critical need by industry and by the Society of Manufacturing Engineers. Studies conducted by the National Research Council discuss the value of interdisciplinary solutions that integrate multiple technologies across technical disciplines.

Mechatronic systems can be a complete product or a sub-component of a product. Examples of mechatronic systems include aircraft flight control and navigation systems; automotive electronic fuel injection and anti-lock brake systems; automated manufacturing systems including robots, numerical control machining centers, packaging systems and plastic injection-molding systems; artificial organs; health monitoring of engineered and surgical systems; copy machines; and many more. A common element of all these systems is the integration of analog and digital circuits, microprocessors and computers, mechanical devices, sensors, actuators, and controls.

Mechatronics Engineering graduates can select from a wide spectrum of industries for career choices and can also contribute in a variety of roles including design engineer, software engineer, project planner, product designer, and project manager. Opportunities are also available to graduates in smaller companies that need generalists who can perform both mechanical and electrical engineering functions.

The SPSU Bachelor of Science degree in Mechatronics Engineering was approved by the Board of Regents in October 2006.

Faculty:

Matthew Marshall, *Ph.D., Assistant Professor*
Chan Ham, *Ph.D., Assistant Professor and Program Director*
Ying Wang, *Ph.D., Assistant Professor*
Kevin McFall, *Ph.D., Assistant Professor*

Areas of Study

Electrical Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- MATH 2254 - Calculus II **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**

- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- One hour from Area A Math
- One hour from Area D Math

Requirements

- EE 1000 - Foundations of Electrical Engineering **2 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- EE 2302 - Circuit Analysis II **3 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EE 3501 - Embedded Systems **4 Credits**
- EE 3605 - Electromagnetics **3 Credits**
- EE 3701 - Signals and Systems **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 3702 - Communication Systems **3 Credits**
- EE 3601 - Electric Machines **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- EE 4701 - Professional Practice **3 Credits**
- EE 3/4XXX - Technical Electives **9 Credits**
- EE 3/4XXX - Engineering Science Elective **3 Credits**
- EE 4800 - Senior Project **4 Credits**

- Math Elective - Math above 2335 **3 Credits**

Degree Program Total: 129

The Electrical Engineering degree requires a grade of "C" or better in all EE and ENGR courses applied to degree requirements.

Mechatronics Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- MATH 2254 - Calculus II **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

One hour from Area A Math

One hour from Area D Math

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**

Requirements

- MTRE 1000 - Introduction to Mechatronics Engineering **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- Math Elective **3 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- MTRE 2610 - Engineering Algorithms and Visualization **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- MTRE 3710 - Mechatronics Engineering Fundamentals **4 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended Area E-3)
- EE 4201 - Control Systems **4 Credits**
- MTRE 4000 - Advanced Controls **3 Credits**
- MTRE 4200 - Robotics Analysis and Synthesis **4 Credits**
- MTRE 4400 - Mechatronics System Design **4 Credits**

Degree Program Total Hours: 131

The Mechatronics Engineering degree requires a grade of "C" or better in all MTRE, EE, ME and ENGR courses applied to degree requirements.

Systems and Mechanical Engineering

Mechanical Engineering

Offering:

Bachelor of Science degree in Mechanical Engineering

Mechanical engineering is one of the largest disciplines of engineering because it is one of the broadest. It focuses on the application of the principles of mechanics and materials to design machines and devices. Mechanical engineers design devices that help society, everything from artificial knee joints to wind-turbines.

Graduates have the qualifications to enter graduate school, become a licensed professional engineer in any state after sufficient work experience, or directly enter careers in areas such as, but not limited to, manufacturing, aerospace industry, power generation and distribution, automotive design, machine design, alternative energy, robotics, and automation. Typical job titles for graduates may include design engineer, project engineer, process engineer, test engineer, development engineer, program manager, consulting engineer, and field engineer.

Mechanical Engineering requires rigorous training in basic science and engineering principles along with the development of skills in the areas of computer-aided design, instrumentation, and planning and management of design projects. Graduates in the area of Mechanical Engineering will be required to master technical elements and to demonstrate particular competence in the areas of communication, fiscal management, and project control. The broad-based background is tailored to develop professionals who will be able to move between the technical and managerial aspects of mechanical engineering projects and to serve in key leadership positions within the engineering profession. As with all engineering degrees, a mechanical engineer becomes very good at solving difficult problems which makes it a good degree for non-engineering careers as well. The Bachelor of Science in Mechanical Engineering was approved by the Board of Regents in August 2009.

The Faculty:

Mir Atiqulla, Ph.D., *Professor*
Erhan Ilksoy, P.E., *Senior Lecturer*
Margaret Loraine Lowder, Ph.D., *Assistant Professor*
Mohammed S. Mayeed, Ph.D., *Assistant Professor*
Richard Ruhala, Ph.D., *Associate Professor*
Laura A. Ruhala, Ph.D., *Associate Professor*
Muhammad Salman, Ph.D., *Lecturer*
Valmiki Sooklal, Ph.D., *Assistant Professor*
David R. Veazie, Ph.D., P.E., *Professor*

Systems Engineering

Offering:

Bachelor of Science degree in Systems Engineering
Minor in Aerospace Engineering
Minor in Nuclear Engineering

Systems Engineering is an interdisciplinary and structured approach to designing and deploying successful systems. The Systems Engineering degree blends engineering, systems thinking, and management topics. Systems Engineering

addresses the business and technical needs of all stakeholders throughout the entire design process, from concept to production to operation to disposal. In this major, engineering techniques and a systems approach are combined to produce graduates who are highly valued for their problem solving and managerial skills.

Graduates of this program will understand the multidisciplinary fundamentals of engineering and possess strong team skills to solve complex problems that cross disciplinary boundaries. They will understand current technology, but also be creative thinkers and have the flexibility to change with technology. They will be able to create sustainable systems, to adapt to the new global context and be empowered for lifelong learning. Graduates can look forward to employment in the defense, aerospace, transportation, energy and telecommunications industries, as well as many other fields that look for the knowledge and skills necessary to engineer large and complex systems.

The Systems Engineering program offers two minors for all engineering students: Aerospace Engineering and Nuclear Engineering.

- The Aerospace Engineering minor provides a comprehensive education to prepare graduates for productive careers with special emphasis on the needs of aviation, aerospace engineering, and related fields.
- Students who study Nuclear Engineering will become true multi-disciplinary specialists. Graduates will enter an expanding job market in industry, national laboratories, government and academia, where one can work on problems that will have large impact on our future environment, security, health, and safety.

The Faculty:

Renee J. Butler, Ph.D., P.E., *Associate Professor and Department Chair*
Adeel Khalid, Ph.D., *Assistant Professor*
Mahmoud Ghavi, Ph.D., *Professor*
Kamran Moghaddam, Ph.D., P.E., *Assistant Professor*
Woodrow W. Winchester, III, Ph.D., *Associate Professor*

Areas of Study

Aerospace Engineering Minor

Requirements

- SYE 3801 - Aerodynamics (Aeronautic Elective) **3 Credits**
- SYE 4803 - Aeronautics Project **3 Credits**

Choose 3 courses from the following:

- SYE 3802 - Aircraft Design and Performance (Aeronautic Elective) **3 Credits**
- SYE 3803 - Fundamentals of Avionics **3 Credits**
- SYE 4801 - Aircraft Propulsion **3 Credits**
- SYE 4802 - Helicopter Theory **3 Credits**

Minor Program Total: 15

Mechanical Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World - 3 credits
- Group 2 - Art and Culture of the World - 3 credits

Area D

- MATH 2254 - Calculus II **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits   *ECON 2107 is recommended**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Major Courses

- ME 1001 - Introduction to Mechanical Engineering **2 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ME 1311 - MATLAB for Engineers with Applications **3 Credits**
- Math or Science Electives **3-4 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ME 3101 - Materials Science and Engineering **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ME 4250 - Computer Aided Engineering **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- ME 4403 - Heat Transfer and Thermodynamics Lab **1 Credits**
- ME 3410 - Thermodynamics **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ME 3440 - Heat Transfer **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 4141 - Machine Design I **3 Credits**
- ME 4201 - Senior Design I **1 Credits**
- ME 4202 - Senior Design II **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**
- MATH 2255 - Calculus III **4 Credits**
- Approved Technical Electives **9 Credits**

Degree Program Total: 130

The Mechanical Engineering degree requires a grade of "C" or better in all ME and ENGR courses applied to degree requirements.

Technical Electives

Technical Electives can be any non-required 3000 and/or 4000 level courses from ME, including Special Topics (ME 3903 or ME 4903) and Undergraduate Research (ME 4801, ME 4802, and ME 4803).   Additionally MTRE 3710 and SYE 3320 are allowed. Students may focus their technical electives in Aerospace Engineering (SYE 3801, SYE 3802, SYE 3803, SYE 4801, SYE 4802, SYE 4803) or Nuclear Engineering (SYE 3501, SYE 3502, SYE 4501, SYE 4502, or SYE 4503).

Some ENGR, EE, MTRE, or SYE may be approved for technical electives by the program coordinator or the department chair.

**If student does not take ECON 2107 for Core E-3, the student must take SYE 3320 - Engineering Economics and Decision Analysis as a Technical Elective.

Nuclear Engineering Minor

Requirements

- SYE 3501 - Fundamentals of Nuclear Engineering **3 Credits**
- SYE 3502 - Radiation Detection and Measurement **3 Credits**
- SYE 4501 - Nuclear Power Generation **3 Credits**
- SYE 4502 - Radiation Protection and Health Physics **3 Credits**
- SYE 4503 - Nuclear Fuel Cycle **3 Credits**

Minor Program Total: 15

Systems Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World - **3 credits**
- Group 2 - Art and Culture of the World - **3 credits**

Area D

- MATH 2254 - Calculus II **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- CSE 1302E - Object Oriented C++ Programming for Engineers **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Systems Engineering Major

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
  or
- ME 3410 - Thermodynamics **3 Credits**
- SYE 2100 - Systems Analysis and Design **3 Credits**
- SYE 3320 - Engineering Economics and Decision Analysis **3 Credits**
- SYE 2600 - Applications of Probability **3 Credits**
- SYE 3100 - Systems Reliability and Maintainability **3 Credits**
- SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture **3 Credits**

- SYE 3200 - Human Machine Systems **3 Credits**
- SYE 3300 - Program Management **3 Credits**
- SYE 3400 - Engineering Optimization I: Deterministic Decision Models **3 Credits**
- SYE 3600 - Statistics with Applications **3 Credits**
- SYE 3700 - Manufacturing and Production Systems **3 Credits**
  or
- SYE 3710 - Logistics and Supply Chain Systems **3 Credits**
- SYE 4400 - Engineering Optimization II: Stochastic Decision Models **3 Credits**
- SYE 4500 - System Modeling and Simulation **3 Credits**
- SYE 4900 - System Design Project **3 Credits**
  or
- SYE 4803 - Aeronautics Project **3 Credits**
  Approved Technical Electives: **12 Credits**

Technical Electives

Technical Electives can be 3000 and/or 4000 level courses from SYE, SWE, MTRE, ME, CE, EE or MATH. Other courses may be approved by the department chair. Students may focus their technical electives in Aerospace Engineering or Nuclear Engineering.

Degree Program Total: 129

The Systems Engineering degree requires a grade of 'C' or better for any course with an ENGR or SYE prefix and ENGL 1101. A 'D' or better is required for any other course.

School of Engineering Technology & Management

Offering

Bachelor of Science Degrees
Master of Science Degrees

Southern Polytechnic State University offers a variety of engineering programs, including Civil Engineering, Construction Engineering, Electrical Engineering, Mechanical Engineering, Mechatronics Engineering, Software Engineering, and Systems Engineering at the undergraduate level, and Software Engineering and Systems Engineering at the Masters level. Individuals interested in these programs should see the appropriate sections of this catalog.

Courses listed in this section of the catalog that carry the ENGR prefix, are general in nature, and are taken by more than one engineering or engineering technology major. Courses specific to individual majors may be found in the listing for the specific program.

Engineering Technology

Engineering Technology (ET) is the profession in which knowledge of applied mathematics and natural sciences gained by higher education, experience, and practice is devoted to the application of engineering principles and the

implementation and extension of technological advances for the benefit of society. Engineering Technology education focuses primarily on analyzing, applying, designing, implementing, and improving existing and emerging technologies. The intent of Engineering Technology programs is to prepare graduates for the practice of engineering closest to the product improvement, manufacturing, and engineering operational functions.

The backbone of ET degree programs is experiential learning. The mathematical and science requirements are enhanced by the number of laboratory courses offered with the lectures. Further, lecture courses emphasize the application of mathematics, science, and engineering and we offer labs that are hands-on and project-based in nature.

SPSU offers Engineering Technology degrees in civil, computer, electrical, environmental, industrial, mechanical, and telecommunications. These programs are accredited by the Engineering Technology Accreditation Commission (ETAC) of ABET, http://www.abet.org

Engineering Technology students are encouraged to pursue registration as a Professional Engineer. The first step in the registration process is the successful completion of the Fundamentals of Engineering (FE) Exam. Students may take this exam during your senior year. Additional requirements for professional licensure following graduation if the accumulation of a minimum of seven years of progressive experience and successful completion of the Professional Engineer (PE) exam.

Business Administration

The baccalaureate programs in Business Administration prepare student for successful careers in management, marketing and accounting. Graduates of the program advance into supervisory and management positions in service and industrial enterprises. In the Business Administration Department at SPSU instruction in technical and business subjects is effectively combined to produce a curriculum that is uniquely matched to the demands of the modern business world.

The SPSU Business and Accounting degrees are accredited by the Association of Collegiate Business Schools and Programs (ACBSP), a leading international body specializing in accreditation for business education that emphasize teaching excellence. The Business Administration department is a member of The Association of Advance Collegiate Schools of Business (AACSB).

For more information regarding the Business Administration and Accounting programs please visit http://www.spsu.edu/business/index.htm

Note: Students enrolled in Business Administration and Accounting majors are required to earn a "C" average (2.0 GPA) in their ACCT, ECON, and MGNT courses, two grades of "D" may be used for graduation purposes in the major courses. A grade of "C" or better is required in the capstone course.

The Faculty:

Donald Ariail, *Associate Professor, Accounting*

Mark Hiatt, *Assistant Professor, Management*

Zeynep Kelani, *Lecturer, Economics*
Amine Khayati, *Assistant Professor, Finance*
Mikhail Melnik, *Associate Professor, Economics*
Max M. North, *Professor, Management Information System*
Muhammad A. Obeidat, *Professor, Operations & Technology Management*
Gregory Quinet, *Assistant Professor, Management*
Ronny Richardson, *Professor and Department Chair, Operations Management*

Shannon Shumate, *Lecturer, Accounting*
Mona Sinha, *Assistant Professor, Marketing*

Sondra Smith, *Temporary Full-time Instructor, Accounting*

Sandria Stephenson, *Assistant Professor, Accounting*

Sonia Toson, *Assistant Professor, Law*

Bor-Yi Tsay, *Professor, Accounting*
Sandra Vasa-Sideris, *Professor, Management*

Civil Engineering Technology

Civil Engineering Technology

Offering:

The Bachelor of Science in Civil Engineering Technology
The Bachelor of Science in Surveying and Mapping
The Bachelor of Science in Environmental Engineering Technology
Certificate in Geographical Information Systems (GIS)
Certificate in Land Surveying
Minor in Georgraphical Information Systems (GIS)

All of these programs and certificates provide the knowledge and skills for graduates to play an effective role in the rehabilitation of the nation's infrastructure. In addition, our programs emphasize sustainability and environmental control which are essential in today's practice. Our graduates are immediately employable and productive. This ability of our graduates to **"hit the ground running"** is highly valued by industry employers.

Accreditation

The Bachelor of Science in Civil Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

The Bachelor of Science in Surveying and Mapping is accredited by the Applied Science Accreditation Commission of ABET, www.abet.org.

The Faculty:

Daniel L. Branham, *Lecturer*
Mark G. Lee, *Instructor*
Mehrdad Mesbahi, *Associate Professor*
Fatih Oncul, *Associate Professor*
Allen D. Roberts, *Assistant Professor*

Nancy J.Turner, *Senior Lecturer*
Matthew M. Wilson, *Professor*
Roneisha Worthy, *Assistant Professor*
Timothy W. Zeigler, *Professor, Department Chair*

The Faculty Emeritus:

Carlos Ortiz, *Professor, Emeritus*
Al Troemel, *Professor, Emeritus*

B.S. Civil Engineering Technology

Civil Engineering Technology is a broad field producing engineering technologists with versatile backgrounds.

Graduates of the **B.S**. **Civil Engineering Technology Program** have the qualifications to enter careers in:

Construction
Surveying
Geotechnical
Site development
Structural Design
Transportation
Urban Planning
Environmental Technologies

Civil Engineering Technology (CET) Program prepares graduates for analysis and design of civil engineering systems and facilities. In addition to fundamental civil engineering courses students take management and civil software application courses. The CET program offers courses in several civil engineering technology fields, such as:

- **Environmental Engineering Technology:** Analysis and design of systems and facilities to correct or control the pollution of air, land, or water. For example, design of water treatment and wastewater plants, and solid waste disposal facilities. Many career opportunities exist with municipalities, industry, consulting firms and governmental agencies.
- **Structural Engineering Technology:** Planning, preparation, construction, and inspection of modern buildings and bridges and other structures. In their coursework, students analyze and design structural members of steel, reinforced concrete and other engineering materials.
- **Geotechnical Engineering Technology:** Subsurface investigations, and field and laboratory tests; and design and analysis for civil engineering works such as foundations, dams, and retaining walls.
- **Transportation Engineering Technology:** Planning and maintenance of all types of transportation facilities including streets, highways, mass transit systems, railroads, airfields, ports, harbors and pipelines.
- **Surveying and Mapping:** Utilization of the state-of-the-art surveying equipment (including theodolites, total stations, GPS units, and field-to-plot systems) in developing maps, designing and laying out construction projects and in planning land development for residential and commercial enterprises.

Professional Engineer: In Georgia and approximately thirty-five other states in the U.S., the BS-CET degree along with the appropriate number of years of experience, and the passage of two 8-hour examinations (FE and PE), qualifies a graduate to become a licensed Professional Engineer (PE). The FE exam can be taken while a senior enrolled in the CET curriculum.

Licensed Land Surveyor: CET majors whose curriculum contains at least six elective hours of surveying coursework meet the educational requirements to become a licensed as a Professional Land Surveyor (PLS) in Georgia. In addition, they must obtain four-years of acceptable experience and pass the FLS and PLS examinations.

B. S. Environmental Engineering Technology

Graduates of the **Environmental Engineering Technology Program** are prepared for analysis, design and management and operation of environmental facilities. A graduate shall understand the concepts of professional practice and the role and responsibilities of public institutions, as well as private organizations in preserving and maintaining the quality of the environment. Electives in the program are available in environmental chemistry, ecology, and management.

Professional Engineer: In Georgia and approximately thirty-five other states in the U.S., the B.S. Environmental Engineering Technology degree along with the appropriate number of years of experience, and the passage of two 8-hour examinations (FE and PE) qualifies a graduate to become a licensed Professional Engineer (PE). The FE exam can be taken while a senior enrolled in the CET curriculum.

B.S. Surveying and Mapping

Graduates of B.S. Surveying and Mapping are capable of operating modern surveying equipment including theodolites, electronic total stations, robotic instrumentation, Global Positioning Systems (GPS) satellite receivers, and optical alignment devices. Mapping photogrammetry and remote sensing.

In laboratories, students develop maps from field measurements, design and layout construction projects, plan subdivision developments and establish horizontal and vertical control using satellite geodesy. Computer analysis is used extensively in reducing data, planning field layouts, plotting boundaries, drawing (CAD) plats and map production.

Students also study topics from the Civil Engineering Technology program including elementary structures, fluid mechanics, hydrology and the design and construction of highways. Courses in mathematics, business principles and core requirements provide the students added depth.

With focused laboratory based classes, students develop the critical thinking needed to work in this field. Using a variety of tools - GPS receivers, electronic distance meters, laser total stations, and data collection equipment to name a few - students become adept at creating maps from field measurements, designing and laying out construction projects, and planning subdivision developments.   Field exercises, which take place right on campus, help prepare you to work in the private sector, government and utilities, or engineering practices.

Professional Registration:

Registered Land Surveyor: Graduates exceed the educational requirements to become licensed as a Registered Land Surveyor (RLS) in Georgia. In addition, they must obtain four-years of acceptable experience and pass the FLS and PLS examinations.

Civil Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

***Note**: 1 hour from Area A MATH 1113 will be used to satisfy Area F 18 hour requirement.

- CET 2110 - Problem Solving Methods in CET **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- SURV 2221 - Surveying I **4 Credits**

Requirements

- CET 1001 - Orientation to the Civil ET, Environmental ET, and Geospatial Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**

- CET 3410L - Soil Properties Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 3510L - Traffic Analysis and Road Design Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3430L - Site Exploration and Field Testing Lab **1 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- CET 4130 - Special Inspections **2 Credits**
- CET 4240L - Structural Detailing Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**
- ENGT 3124L - Strength of Materials Lab **1 Credits**
- CET Electives **9 Credits**
- MATH 2253 (Area D Carryover) **1 Credit**

Degree Program Total: 124

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

Environmental Engineering Technology, BS

Requirements

Area A:

- ENGL 1101 - English Composition I **3 Credits**

- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C:

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E:

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F:

Core related to major.

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

Additional Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- CET 4320 - Unit Operations in Environmental Engineering **4 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- MATH MAJOR COURSES: Excess from AREA A AND D **2 Credits**
- CM 4710 - Construction Safety **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

Major Electives:

Take minimum of 6 hours from major electives listed below:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MET 3400 - Thermodynamics and Heat Transfer **3 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- BIOL 3300K - Ecology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- CET 4340 - Air Pollution Control **3 Credits**

Degree Program Total: 123

EvET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

Geographical Information Systems Certificate

The Geographical Information Systems (GIS) Certificate program is designed to prepare students with a practical set of GIS marketable skills who have a background in GIS applications such as surveying, real estate, marketing, geography or business background. There are five courses required in the certificate program.

Required Courses (19 Credits)

- SURV 2110 - Introduction to Mapping **4 Credits**
  OR
- SURV 2221 - Surveying I **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**
- SURV 4110 - Geographical Information Systems (GIS) Practice **3 Credits**

Certificate Program Total: 19

Geographical Information Systems Minor

Minor in Geographical Information Systems

Required Courses

- SURV 2110 - Introduction to Mapping **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**

Total Hours: 16 Credits

Land Surveying Certificate

The Land Surveying Certificate program is designed to prepare surveyors with the basic education necessary to take the Fundamentals of Land Surveying Exam and exceeds the State of Georgia academic registration requirements to become a Registered Land Surveyor. There are six courses required in the certificate program.

Required Courses (21 Credits)

- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**

Certificate Program Total: 21

Surveying and Mapping, BS

Requirements:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math Elective - **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits** or

- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4410 - Surveying Computations and Adjustments **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- SURV 4415 - Geodetic Surveying Methods **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV Electives **4 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129 hours

Note:

Surveying students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

PHYS 1111 and PHYS 1112 are required.

If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 1-2000 level courses or any Lab Science to fulfill the Area F requirement.

If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 3-4000 level courses or any Lab Science to fulfill the major requirement.

Electrical and Computer Engineering Technology

Electrical and Computer Engineering Technology

Offering:

The Bachelor of Science in Computer Engineering Technology
The Bachelor of Science in Electrical Engineering Technology
The Bachelor of Science in Telecommunications Engineering Technology

Accreditation

The Bachelor of Science degree programs in Electrical Engineering Technology, Computer Engineering Technology, and Telecommunications Engineering Technology are accredited by the Engineering Technology Accreditation Commission of ABET, www.ABET.org.

Electrical and Computer Engineering Technology

Your challenge: Create a computer-aided testing system. Your solution: Write software, design circuits, and demonstrate how the two work together. Your result: Technological expertise that translates into high-powered careers.

Highly ranked and nationally respected, our three engineering technology programs provide plenty of hands-on learning. Flexible schedules give you the option of attending day or night, and our faculty bring their consulting experience into every lab. In small classes and on team projects, you learn the practical skills needed in many careers, from design and test engineering to research and development, sales, management, and telecommunications network administration. The majority of Engineering Technology graduates obtain jobs as engineers and fill many engineering positions in the US. Industry and educational leaders consider our graduates among the nation's best.

For the first two and a half years, all students take a common curriculum of fundamentals, circuits, electronics, and data communication, as well as calculus and physics. Courses in speech, technical writing, and composition help develop your communication skills, which are key to advancement. Our Industry Advisory Board, which includes representatives from BellSouth, Georgia Power, Home Depot, and Lockheed, among others, helps keep our programs in line with industrial innovation. And student professional and honors organizations offer design competitions and networking opportunities that are both fun and practical.

Engineering Technology is a branch of engineering education that emphasizes the practical aspects of engineering rather than abstract concepts or theories. It is a blend of the application of science, engineering knowledge, and technical skills used in support of engineering activities. The Electrical and Computer Engineering Technology Department at Southern Polytechnic State University offers many diverse areas of study including communications, power, audio, digital design, controls, and computer design. Programs of study can lead to any one of the following degrees:

- Bachelor of Science in Computer Engineering Technology (BS-CpET)
- Bachelor of Science in Electrical Engineering Technology (BS-EET)
- Bachelor of Science in Telecommunications Engineering Technology (BS-TCET)

The Faculty:

Austin B. Asgill, *Professor and Department Chair*
Charles L. Bachman, *Professor Emeritus*
Craig A. Chin, *Assistant Professor*
Kim Davis, *Associate Professor*
Thomas J. Fallon, *Professor*
Pamela S. Frinzi, *Professor*
Hai T. Ho, *Associate Professor*
L. Brent Jenkins, *Associate Professor*
Scott Larisch, *Assistant Professor*
Florian Misoc, *Associate Professor*
Adimathara P. Preethy, *Assistant Professor*
Walter E. Thain Jr., *Associate Professor*

Scott J. Tippens, *Professor*
Jeff H. Wagner, *Assistant Professor*
Daren R. Wilcox, *Assistant Professor*
Omar Zia, *Professor Emeritus*

The ECET department has adopted the following Program Educational Objectives:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and computer engineering technology.
- Possess an appropriate knowledge of the fundamentals of the discipline, mathematics, science and technologies in order to adapt to rapidly changing technologies.
- Function and communicate effectively, both individually and within team environments, demonstrating ethical, respectful and professional behavior in all associations.
- Apply creativity in the design, testing and maintenance of the discipline-specific systems, and think critically to identify, evaluate and solve complex technical and non-technical problems.
- Recognize the need for a commitment to pursue continuous self-improvement and lifelong learning.
- Be cognizant of contemporary professional, societal and global issues and be aware of and respect diverse cultures.
- Obtain and maintain a meaningful employment in their respective disciplines and attain increasing levels of responsibility and leadership in their chosen career field.

Bachelor of Science in Computer Engineering Technology

The development of the microcomputer has created a need for engineering technology graduates with a specialized knowledge of computers and control systems. The bachelor of science degree in computer engineering technology was created to meet this need. The degree program in Computer Engineering Technology (CpET) utilizes a core of mathematics, physics, and electronics courses. These courses provide the scientific and technical background for an in-depth study of the hardware and software aspects of computers and related systems. The emphasis of the program is on microcomputers and their application to the solution of industrial problems relating to robotics, control, instrumentation, monitoring, data communications, networks, and automated testing.

The ECET department has adopted the following Computer Engineering Technology Program Outcomes:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and computer engineering technology.
- Demonstrate an appropriate mastery of knowledge, techniques, skills and modern tools of the technical components of the curriculum appropriate to their discipline.
- Use appropriate tools and laboratory equipment to acquire data, conduct experimental measurements, analyze and interpret the results.
- Demonstrate the ability to think critically and generate creative and realistic solutions to defined problems and projects appropriate to their discipline.
- Produce written documents; deliver oral presentations, prepare and interpret visual information.
- Function effectively on teams.
- Recognize the value of diversity, and identify ethical and social issues in business and technical tasks.
- Demonstrate a commitment to quality timeliness and continuous improvement.

The degree program in computer engineering technology utilizes a core of mathematics, physics, and electronics courses. These courses provide the scientific and technical background for an in-depth study of the hardware and software aspects of computers and related systems.

The emphasis of the program is on microcomputers and their application to the solution of industrial problems relating to robotics, control, instrumentation, monitoring, data communications, networks, and automated testing.

Graduates of these programs are qualified for employment as engineering technologists with companies that utilize computers in computation and control activities as well as companies that design, manufacture, market, install, and service computers and computer networks.

CpET students are required to take one project-based capstone course as part of their 11 hours of CpET electives. Contact the ECET Department to obtain a list of acceptable CpET project-based capstone courses. Any non-required upper division (3XXX/4XXX) ECET course, with the exception of ECET 3000 - Electrical Principles, ECET 3010 & ECET 4830, may be used for the remainder of their CpET electives. Students may also choose one course from outside the major to count as a CpET elective. Contact the ECET Department to obtain a list of acceptable courses from outside the major that count as a CpET elective.

Bachelor of Science in Electrical Engineering Technology

Electronics has given birth to an industrial giant. Computers, medical electronics, automation, communications, instrumentation, radar, and robotics are but a few of the fields based on electronics. This demand has created a need for electrical engineering technology graduates in all phases of development, design, production, maintenance, and troubleshooting. Graduates of the bachelor of science degree program in electrical engineering technology are meeting this need. The Electrical Engineering Technology (EET) program prepares graduates to enter the technical workforce in a variety of fields. Communications, instrumentation, automation, control systems, power, robotics, computers, and medical electronics are but a few of these fields. Within these fields, Electrical Engineering Technology graduates are typically involved in areas such as: development, design, quality assurance, technical documentation, production, maintenance, test, field service, or technical sales.

The ECET department has adopted the following Electrical Engineering Technology Program Outcomes:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and electrical engineering technology.
- Demonstrate an appropriate mastery of knowledge, techniques, skills and modern tools of the technical components of the curriculum appropriate to their discipline.
- Use appropriate tools and laboratory equipment to acquire data, conduct experimental measurements, analyze and interpret the results.
- Demonstrate the ability to think critically and generate creative and realistic solutions to defined problems and projects appropriate to their discipline.
- Produce written documents; deliver oral presentations, prepare and interpret visual information.
- Function effectively on teams.
- Recognize the value of diversity, and identify ethical and social issues in business and technical tasks.
- Demonstrate a commitment to quality timeliness and continuous improvement.

EET students are required to take one project-based capstone course as part of their 13 hours of EET electives. Contact the ECET Department to obtain a list of acceptable EET project-based capstone courses. Any non-required upper division (3XXX/4XXX) ECET course, with the exception of ECET 3000, ECET 3010 & ECET 4830, may be used for the remainder of their EET electives. Students may also choose one course from outside the major to count as an EET

elective. Contact the ECET Department to obtain a list of acceptable courses from outside the major that count as an EET elective.

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below: EET Electives

Biomedical electronics, instrumentation, and devices represent one of the fastest growing segments of the health care industry. Recognizing the demand, and the importance of producing graduates for this growth area, the ECET department offers a Biomedical Engineering Technology Option under the Electrical Engineeering Technology (EET) degree. Students wishing to take this option must declare so in Banner. Upon completion of the EET-BMET Degree Option, students will receive the BS-EET degree with the Option inscribed on their transcripts.

Bachelor of Science in Telecommunications Engineering Technology

The ever-increasing popularity of the Internet combined with significant advances in communications software and hardware has spawned an immense demand for individuals possessing the knowledge and skills required to design, implement, and maintain computer networking systems of all types. The bachelor of science degree program in telecommunications engineering technology (TCET) is designed to provide individuals with the theory and hands-on knowledge necessary to meet the demand.

The ECET department has adopted the following Telecommunications Engineering Technology Program Outcomes:

- Demonstrate appropriate knowledge of fundamentals of their discipline, mathematics, science and telecommunications engineering technology.
- Demonstrate an appropriate mastery of knowledge, techniques, skills and modern tools of the technical components of the curriculum appropriate to their discipline.
- Use appropriate tools and laboratory equipment to acquire data, conduct experimental measurements, analyze and interpret the results.
- Demonstrate the ability to think critically and generate creative and realistic solutions to defined problems and projects appropriate to their discipline.
- Produce written documents; deliver oral presentations, prepare and interpret visual information.
- Function effectively on teams.
- Recognize the value of diversity, and identify ethical and social issues in business and technical tasks.
- Demonstrate a commitment to quality timeliness and continuous improvement.

The degree program is based upon a core of mathematics, physics, and electronics courses. These courses provide the scientific and technical background required for an in-depth understanding of the hardware and software aspects of computers and related systems. Building upon this core, students immerse themselves into several telecommunications-related courses that provide them with a holistic perspective of this behemoth industry.

Although entitled a telecommunications degree, this program covers virtually all aspects of modern computer networking. The student's experience is greatly augmented by numerous hands-on exercises undertaken in the university's state-of-the-art telecommunications laboratory. Providing the graduate of this program with the opportunity to ascend into management, the degree is also comprised of several management-related courses.

Areas of Study

Computer Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ECET 1101 - Circuits I **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**

Note that the carryover credits from Area A Math and Area D Math will be added to Area F to total 18 hours.

Major Courses

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits ****
- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 3710 - Hardware Programming and Interfacing **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4610 - Control Systems **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- CpET Electives **11**

Degree Program Total: 129

Note:

* PHYS 1111/PHYS 1111L and PHYS 1112 /PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

CpET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

CpET Electives

Embedded Systems (take 2 of the following courses)

Graduate will specialize in the design and implementation of smart devices used in products ranging from audio to medical to security systems. Both hardware design and programming at the system level will be stressed. The specialist

will gain resume skills such as DSP and VHDL design, embedded micro-controller and embedded PC interfacing and programming.

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

Networks (take 2 of the following courses)

Graduate will specialize in the development and implementation of networks of computers and micro-controllers. Applications include Telemedicine, factory automation systems, point-of-sales systems, and robotics. There will be heavy emphasis of high-level programming using C, Visual C++, JAVA, Visual BASIC, HTML, Windows, LINUX, TCP/IP, etc. Hardware will emphasize PCs and embedded PCs, smart devices, LAN technologies, and remote sensing and control.

- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 48XX - BS Telecom 3000-4000 course
- ECET 48XX - BS Telecom 3000-4000 course
  Note: *ECET 4830 cannot be used as an elective.*

Electrical Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
  or
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits** and
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
  or
- BIOL 2107 - Principles of Biology I **3 Credits** and
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**

Major Courses

- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3500 - Survey of Electric Machines **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3620 - Signals and Systems Analysis **4 Credits**
- ECET 4610 - Control Systems **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits** **

- EET Electives **13 Credits**

Degree Program Total: 128

Note:

* PHYS 1111, PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

EET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

EET Electives

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below:

Biomedical

- ECET 3020 - Biomedical Instrumentation **4 Credits**
- ECET 3030 - Biomechanics **4 Credits**
- ECET 4010 - Virtual Biomedical Instrumentation **4 Credits**
- ECET 4020 - Biomedical Imaging **4 Credits**
- ECET 4030 - Bioinformatics and Telemedicine **4 Credits**
- ECET 4040 - Biometrics **4 Credits**
- ECET 4050 - BMET Capstone **4 Credits**

Communications

- ECET 4320 - Active Filters **4 Credits**
- ECET 4330 - Audio Technology **4 Credits**
- ECET 4420 - Communications Circuit Applications **4 Credits**
- ECET 4431 - Wireless Communications Systems **4 Credits**
- ECET 4432 - Fiber-optic Communications Systems **4 Credits**
- ECET 4450 - RF Electronics **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

Digital

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

Power

- ECET 4510 - Power System Analysis **4 Credits**
- ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC **4 Credits**
- ECET 4530 - Industrial Motor Control **4 Credits**
- ECET 4540 - Introduction to Power Electronics **4 Credits**
- ECET 4560 - Electric Drives **4 Credits**

Telecommunications

- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

Renewable Energy Engineering Technology Minor

Renewable Energy Engineering Technology Minor

Required Course

- REET 3550 - Introduction to Alternate Energy **4 Credits**

Plus four additional courses from the following:

- REET 2020 - Engery Conversion **4 Credits**
- REET 3030 - Energy Storage Systems **3 Credits**
- REET 4100 - Solar Photovoltaics **3 Credits**
- REET 4110 - Solar Thermal Systems **3 Credits**
- REET 4200 - Wind Power Generation **3 Credits**
- REET 4210 - Oceanic and Hydropower Generation **3 Credits**
- REET 4500 - Environmental Aspects of Power Generation **3 Credits**
- REET 4510 - Sustainable Transportation Systems **3 Credits**

Minor Program Total: 16-17

Note:

An overall GPA of 2.0 is required in the courses for the Renewable Energy Engineering Technology (REET) Minor.

Telecommunications Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ECET 1101 - Circuits I **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Major Courses

- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4830 - Telecommunications Management **3 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits** **
- TCET Electives **6 Credits**

Degree Program Total: 128

Note:

* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

TCET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

TCET Electives

Students may take any *non-required* 3000 or 4000 level ECET or MGNT course to satisfy the TCET elective requirement of 6 credit hours.

Industrial Engineering Technology

Industrial Engineering Technology

Offering:

Bachelor of Science in Industrial Engineering Technology

Who manages the flow of people at theme parks or airports? Decides what kind of training employees need before they work with new equipment? Explains to accountants why the cost of a facility upgrade has changed? Determines where to add people or machinery for maximum impact? If you like to be at the center of the action, designing creative solutions that make business and industry work safer, faster, and leaner, the career for you is industrial engineering technology.

The Industrial Engineering Technology program prepares students to help organizations to be more efficient, productive, and cost-effective through project-based learning experiences in the classroom.

Who makes a good industrial engineering technology student? Those who are organized, analytical, and detail oriented, yet who can think of creative solutions to resolve problems. Since you work with people from many different areas, you need to enjoy interacting with diverse specialists. Excellent communication skills are crucial, too, as you translate engineering requirements to non-engineers and explain technical information to managers.

IET graduates manage quality, resources, and systems in a wide range of workplaces, using skills they learned in quality assurance, facility design, time studies, simulation software, and project management. Employers such as Nissan, Shaw Industries, Milliken, General Electric, AT&T, UPS and Lockheed Martin appreciate our students' professionalism and application of their learned skills.

Traditionally IET graduates have pursued careers in manufacturing environments, but increasingly they hold positions in logistics, banking, healthcare, and transportation. Our student organization—Institute of Industrial Engineers (IIE)—puts you in contact with professional networks before graduation.

Career opportunities involve problem solving in the fields of:

- Process Engineer

- Process Improvement
- Quality Engineer
- Logistics and Supply Chain Management
- Systems Simulation
- Workplace Design
- Project Management
- Economic Analysis/Cost Control

Program Educational Objectives:

Graduates of the Industrial Engineering Technology Program will:

- Meet industry expectations for design, improvement, and installation of integrated systems of people, machines, materials, information, energy and logistics;
- Possess a balance of knowledge that encompasses the specialties in the industrial engineering spectrum;
- Be capable of combining the knowledge and practice of engineering technology with the science of decision making in business, m anufacturing, and service;
- Be capable of using the sciences together with methods of engineering analysis and design to evaluate, specify, and predict the results to be obtained from integrated systems;
- Be capable of career advancement with increasing responsibilities;
- Understand legal, political, social and ethical issues to increase their sense of responsibility, membership, and awareness in society; and
- Possess the necessary interpersonal skills to communicate and work effectively in teams and adapt to change.

Student Outcomes:

Graduates of the Industrial Engineering Technology Program will demonstrate the following:

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
- An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
- An ability to function effectively as a member or leader on a technical team;
- An ability to identify, analyze, and solve broadly-defined engineering technology problems;
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- An understanding of the need for and an ability to engage in self-directed continuing professional development;
- An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
- A knowledge of the impact of engineering technology solutions in a societal and global context;
- A commitment to quality, timeliness, and continuous improvement;

- An ability to accomplish the integration of systems using appropriate analytical, computational and application practices and procedures; and
- An ability to apply knowledge of probability, statistics, engineering economic analysis and cost control and other technical sciences and specialities necessary in the field.

The Bachelor of Science in Industrial Engineering Technology program is accredited by the Engineering Technology Accreditation Commission of ABET, www.abet.org.

The Faculty:

Robert W. Atkins, *Professor*
Bill Bailey, Assistant Professor
Thomas Ball, *Assistant Professor and Department Chair*
E. Lester Dollar, III, *Associate Professor*
Ruston M. Hunt, *Professor and Dean of Extended University*
Kenneth W. Jackson, *Associate Professor*
Robert Keyser, *Assistant Professor*
Christina R. Scherrer, *Associate Professor*
Gregory Wiles, *Assistant Professor*
Rhonda Freeman, *Part Time Faculty*
Mark Kyle, *Part Time Faculty*
Walter Thomas, *Part Time Faculty, Professor Emeritus*

BAS Manufacturing Operations

Offering:

Bachelor of Applied Science

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered online through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, AT&T, Nissan, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

BAS Supply Chain Logistics

Offering:

Bachelor of Applied Science

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered online through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, AT&T, Nissan, Mohawk Industries, Lockheed Martin and UPS.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Industrial Engineering Technology Department Certificate in Logistics

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

Admission Requirements:

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

Industrial Engineering Technology Department Certificate in Production Design

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities.

Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Industrial Engineering Technology Department Certificate in Quality Principles

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3– 4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Apparel Textile Technology-Fashion Design & Product Development

Offering:

> Fashion Design and Product Development
> Bachelor of Apparel and Textiles

Fashion is clothing that is in style at a particular time. The focus of the Fashion Design and Product Development program is the "concept to distribution" design and development of fashions for the ready-to-wear clothing market. Men's wear, women's wear, active and leisure apparel, children's wear and many other sewn products are all part of the fashion/apparel industry, one of the largest and most important industries in the United States. Excellent starting salaries, rapid advancement, job diversity, and travel are just some of the benefits to graduates of this program. The industry offers employment in all 50 states, and many opportunities around the world. Graduates work with technologies, computers and software to design and create quality products in a fast-paced, ever changing fashion environment.

The Faculty:

Thomas Ball, *Assistant Professor and Department Chair*
Keely Clay, *Assistant Professor*
Walter Thomas, *Part Time Faculty and Professor Emeritus*

Program Educational Objectives

- To prepare graduates with the fundamental understanding of concept, product development, sourcing, marketing and merchandising of the ready-to-wear apparel industry;
- To provide graduates with an understanding of the political and ethnical aspects pertaining to global product development;
- To prepare graduates with the basic knowledge for various entry level positions in the fashion/apparel industry; and
- To provide a challenging curriculum consistent with industry needs.

Program Outcomes

Graduates of the program should be able to:

- Demonstrate a conceptual knowledge of the fashion/apparel industry;
- Communicate effectively in written and presentation skills;
- Demonstrate an ability to plan, execute and critique their concepts and ideas;
- Identify, critique and evaluate emerging technologies and concepts applicable to their chosen field;
- Demonstrate sound business principles and practices of the fashion/apparel industry;
- Demonstrate the ability to perform effectively in team environments; and
- Recognize the need for life long learning.

Areas of Study

Apparel and Textiles Minor

To be eligible for a minor in Apparel and Textile Technology, the student must complete 15 credit hours from the following courses with at least 9 hours of upper division course work.

Requirements

- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Minor Program Total: 15

Apparel and Textiles, BAT

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- C1 - Literature of the World **3 Credits**
- C2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Two Area D Lab Science Courses **8 Credits**
- Math - One Area D Math Course **4 Credits**

Note: A student cannot receive credit towards the ATT degree for both MATH2260 and IET2227

Area E

- E1 - US History **3 Credits**
- E2 - World History **3 Credits**
- E3 - Behavioral Science **3 Credits**
- E4 - Cultures and Societies **3 Credits**

Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
  One credit from MATH 1113 will be added to Area F to complete the 18 hour requirement.

Major Courses

- ATT 1000 - Orientation **1 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**
- ATT 4840 - Textile/Apparel Business Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

ATT Related Electives: Select four courses: * 12

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ATT 4820 - Senior Internship **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- Free Electives **6 Credits**
  Note: A student cannot receive credit towards the ATT degree for both MATH2260 and IET2227

Degree Program Total: 120

* At least six hours of Related Elective must be upper level courses

Apparel Product Development Certificate

The Fashion Design and Product Development program offers a Certificate in Apparel Product Development. The objective is to provide training and education to members of the apparel industry, graduates of fashion and design schools and other interested parties seeking to improve their skills. The courses may also be applied toward completing the Bachelor of Apparel and Textiles degree. All requirements for normal admissions are applicable. Certificate students must complete five courses from the following list:

Requirements

Certificate students must complete five classes from the following list:

- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Certificate Program Total: 15

Industrial Engineering Technology Minor

To be eligible for a minor in Industrial Engineering Technology,

Students must complete the following three courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**

And choose two courses from the following list:

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**

Minor Program Total: 16-18

Note:

An overall 2.0 GPA is required in the courses for the IET Minor (excluding the international studies minor courses).

Industrial Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Science* Note 1 **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits** * Note 2
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Major Courses

- IET 1000 - Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3433 - Product and Process Costing **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4451 - Systems Simulation **3 Credits**
- IET 4475 - Senior Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**

- MGNT 4151 - Operations Management **3 Credits**
- Free Electives **6 Credits**

IET Electives (9 semester hours from the list below)

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4111 - Design of Experiments **3 Credits**
- IET 4121 - Advanced Topics in Quality Assurance **3 Credits**
- IET 4478 - Senior Internship **3 Credits**

Degree Program Total: 128

Note 1 - Physics I and Physics II are preferred Area D Sciences, however, any Lab Sciences from the approved list is permissible.

Note 2 – Chemistry I is the preferred Area F Science, however, any Lab Science from the approved list is permissible.

A grade of "C" or better is required in all courses used in the major prescribed for the bachelor degree program.

Concentration in Logistics

The primary objective of the Concentration in Logistics is to provide training and education to students interested in entering the Supply Chain industry.

Required Courses

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**

- IET 3511 - Sustainability Engineering **3 Credits** or
- IET 3620 - Warehousing Systems **3 Credits**

- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

Concentration in Quality Principles

The primary objective of the Concentration in Quality Principles is to provide training and education to students interested in quality system principles, methodology, elements and standards.

Required Courses:

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

Logistics Certificate

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

Admission Requirements:

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

Logistics Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

Manufacturing Operations, BAS

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website iet.spsu.edu/BAS.html outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Technical Electives

Choose any two courses

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 120

Production Design Certificate

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 20

Quality Principles Certificate

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3–4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

Quality Principles Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

Supply Chain Logisitics, BAS

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website iet.spsu.edu/BASSC.html outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Degree Program Total: 120

Mechanical Engineering Technology

Offering:

Offering: Bachelor of Science in Mechanical Engineering Technology

Mission Statement

The Mechanical Engineering Technology Program at Southern Polytechnic State University prepares graduates with the necessary knowledge and skills to perform in professional positions in mechanical engineering. Positions include careers in the design, development, implementation, analysis, manufacturing, testing, evaluation, sales, or maintenance of mechanical systems. Graduates will possess knowledge in math, basic sciences, the traditional engineering sciences, engineering graphics, manufacturing processes, and principals of automation. Students will develop skills in problem solving; written and oral communications; and the use of computer tools. Graduates will apply this knowledge in the design and analysis, development, selection, implementation and control of mechanical systems.

Employers

SPSU's MET graduates work for top companies such as Lockheed Martin, General Electric, Gerdau Ameristeel, Kubota, Caterpillar, Club Car, Newell Rubbermaid, Annheuser Busch, Shaw Industries and many others

SPSU's MET graduates are leaders. They build their own companies and show leadership as professional engineers, chief engineers, and presidents. ATS (Applied Technical Services), Marietta NDT, Automated Logic, and Werner Machine are some of the international and local companies started by MET alumni.

SPSU's MET graduates have industry-ready skills employers are looking for. Many of our students are employment-ready before graduation and receive internships, co-op positions and part time jobs.

Engineering Tools

The tools of the engineer have changed and SPSU's MET graduates are grounded in fundamental engineering principles and prepared to lead in the application of the latest engineering technologies. Students are thoroughly trained in the latest CAD software from geometric modeling to simulations and engineering analysis. They use MATLAB to write code and perform advanced engineering calculations. Students not only create designs but build what they design using traditional methods including: welding, sheet metal forming, manual machining, and plasma cutting. CAD/CAM, (Computer-Aided Design,and Computer-Aided Manufacturing) programs are written and run on the latest CNC machining and turning centers. In hands-on labs students perform mechanical testing, fluids testing, and wind tunnel testing. Automation skills are developed with PLC (Programmable Logic Controller) programming. Additive manufacturing is applied using Fused Deposition Modeling or Ink jet technology, otherwise known as 3D printing. 3D scanning and instrumentation is used for metrology and reverse engineering applications. MET graduates apply time tested engineering principles using the latest technologically advanced engineering tools to solve real world problems.

Educational Objective

Graduates of the mechanical engineering technology program will:

- Be prepared for applied mechanical engineering positions that require specialized knowledge and skills in a particular area of mechanical engineering, such as mechanical design; manufacturing and automation; plant engineering; or heating, ventilation, air conditioning, and refrigeration (HVAC-R)
- Be aware of the impacts of their decisions on the health and safety of workers and on the environment, and of ethical and societal concerns
- Solve problems that require critical thinking, use of teamwork, research, and communication skills
- Understand the need for lifelong learning and continued professional development, including Professional Engineer registration

Outcomes

Graduates of the Mechanical Engineering Technology program will demonstrate:

- an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities
- an ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies

- an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes
- an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives
- an ability to function effectively as a member or leader on a technical team
- an ability to identify, analyze, and solve broadly-defined engineering technology problems
- an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature
- an understanding of the need for and an ability to engage in self-directed continuing professional development
- an understanding of and an commitment to address professional and ethical responsibilities including a respect for diversity
- a knowledge of the impact of engineering technology solutions in a societal and global context
- a commitment to quality, timeliness, and continuous improvement

The Faculty

Jeffrey Ray, *Professor and Dean*

John F. Sweigart, *Associate Professor and Department Chair*

Joseph A. Como, *Lecturer*

Gregory M. Conrey, *Associate Professor*

Puttagounder S Dhanasekaran, *Assistant Professor*

Randall Emert, A*ssistant Professor*

Donald D. Horton, *Associate Professor*

Ali Khazaei, *Associate Professor*

Simin Nasseri, *Associate Professor*

Norman A. Russell, *Associate Professor*

Accreditation

The Bachelor of Science in Mechanical Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, www.ABET.org.

Areas of Study

Mechanical Engineering Technology, BS

Concentrations

Mechanical Engineering Technology is a broad discipline. However, with the appropriate selection of elective courses, any one concentration can be completed within the hours required for the MET degree. Students at Southern Polytechnic State University may obtain a concentration in one of the following areas:

- Aerospace
- Energy
- Engineering Design Graphics
- General
- Machine Design
- Manufacturing

Aerospace Concentration:

The Aerospace concentration is designed to provide students with sufficient knowledge and skills to allow them to operate as a competent practitioner within the field of aerospace engineering. Students will develop not only technical know-how but also a practical and analytical approach to problem-solving that will allow them to address a range of aerospace engineering challenges.

The Aerospace Concentration requires the following course:
MET 3123 Dynamics of Machines

Select three additional courses which count toward the MET Major Electives from the following:
SYE 3801 Aerodynamics
SYE 3802 Aircraft Design and Performance
SYE 4801 Aircraft Propulsion
SYE 4802 Helicopter Theory
SYE 4803 Senior Design (Aeronautics)

Energy Concentration:

Energy is the fundamental industry that supports all others. Students who choose this concentration may work in the heating, ventilating, and refrigeration area or work with internal combustion engines, steam turbines, boilers, air compressors, pumps, and fans.

Graduates with this concentration are employed as system designers in architectural companies; as process engineers in the petrochemical and pulp and paper industries; as power generation plant engineers; and as sales representatives for manufacturers.

The Energy Concentration requires the following course:
MET 3402 Thermodynamics II

Select three additional courses which count toward the MET Major Electives from the following:
MET 4341 Automation Systems and Controls
MET 4411 Refrigeration
MET 4412 Air Conditioning
MET 4431 Plant and Power Applications
MET 4401 Heat Transfer

Engineering Design Graphics:

Mechanical Engineering Technology graduates with an Engineering Design Graphics concentration may obtain employment as Product Design Engineers, Machine Design Engineers, Project Engineers, CAD/CAE Application Engineers, Biomedical Engineers, and Mechanical Engineers. Students with this concentration specialize in CAD systems performing geometric and solid modeling, CAD animations and simulations, Computer Aided Engineering Analysis, surface modeling, sheet metal and weldment design, and CAD customization and standards.

The Engineering Design Graphics Concentration requires the following course:
MET 4112 Computer Aided Engineering & Analysis

Select three additional courses which count toward the MET Major Electives from the following:
EDG 3112 Advanced Engineering Graphics
EDG 4111 Surface Modeling
EDG 4222 CAD Customization and Standards
EDG 4224 Engineering Graphics for Manufacturing
MET 3332 Rapid Design and Manufacturing

General Concentration:

The MET bachelor degree with a general concentration offers the student the opportunity to explore courses in any of the other four concentration areas listed. In order to obtain this concentration a student will take one of the following courses:

MET 3123 Dynamics of Machines
MET 3331 Tool Design
MET 3402 Thermodynamics II
MET 4112 Computer Aided Engineering & Analysis

Select three additional courses from any of the other concentration areas, which count toward the MET Major Electives (extra courses from the list above can be used as major elective):
See Energy Concentration Courses
See Engineering Design Graphics Concentration Courses
See Machine Design Concentration Courses
See Manufacturing Concentration Courses

Machine Design Concentration:

The Machine Design concentration is concerned with the application of fundamental principles of design to new and existing machines, machine parts and mechanical structures; the fabricating, testing and assembly of components into production of mechanical systems; and the operation of machines and mechanical equipment.

Graduates with a Machine Design concentration may be employed as designers of machinery and/or machine parts for the improvement of production operations and cost; supervisors of fabricating facilities, manufacturing plants, maintenance and repair shops; sales and service representatives of industrial and manufacturing firms.

The Machine Design Concentration requires the following course:
MET 3123 Dynamics of Machines

Select three additional courses which count toward the MET Major Electives from the following:
MET 3332 Rapid Design and Manufacturing
MET 4112 Computer Aided Engineering & Analysis
MET 4124 Vibration and Advanced Dynamics

MET 4133 Advanced Engineering Materials
MET 4142 Mechanical Systems Design
MET 4341 Automation Systems and Controls

Manufacturing Concentration:

The Manufacturing concentration is concerned with both traditional manufacturing processes and advanced additive manufacturing technology. Students may obtain industry ready skills in CNC machining, tool design, 3D printing, 3D scanning, rapid tooling, PLC's, and automation.

Graduates may be employed in manufacturing industries such as: aircraft, automotive, biomedical, racing, heavy equipment, steel production and fabrication, plastics production, injection molding, and aluminum production. Titles for graduates may be: Manufacturing Engineer, Project Engineer, Tool Designer, Tooling Engineer, Process Engineer, Mold Designer, PLC programmer, and Automation Engineer.

The Manufacturing Concentration requires the following course:
MET 3331 Tool Design

Select three additional courses which count toward the MET Major Electives from the following:
MET 3332 Rapid Design and Manufacturing
MET 4133 Advanced Engineering Materials
MET 4341 Automation Systems and Controls
MET 4342 Numerical Control of Machines
MGNT4135 Project Management

Engineering Design Graphics Minor

Students who wish to receive a minor in Engineering Design Graphics must take:

- EDG 1212 - Engineering Graphics II **4 credits**

Select four additional courses from the following:

- EDG 3112 - Advanced Engineering Graphics **3 credits**
- EDG 4111 - Surface Modeling **3 credits**
- EDG 4222 - CAD Customization and Standards **3 credits**
- EDG 4224 - Engineering Design Graphics for Custom Manufacturing **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 credits**
- OR
- ME 4250 - Computer Aided Engineering **3 credits**

Minor Program Total: 16

Not available to MET students with a concentration in Engineering Design Graphics.

Manufacturing Engineering Technology Minor

Students who wish to receive a minor in Manufacturing Engineering Technology must take the following two courses:

- MET 1311 - Manufacturing Processes **3 credits**

- MET 2322 - Metrology and CNC Machining **3 credits**

Select three additional courses from the following:

- EDG 4224 - Engineering Design Graphics for Custom Manufacturing **3 credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 credits**
- MET 3331 - Tool Design **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4342 - Numerical Control of Machines **3 credits**
- MGNT 4135 - Project Management **3 credits**

Minor Program Total: 15

Note: Not available to MET students with a concentration in Manufacturing

Mechanical Engineering Technology, BS

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended for Area E-3)
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (the extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EDG 1212 - Engineering Graphics II **4 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- MET 3126 - Engineering Dynamics with Applications **3 Credits**

- ENGR 3122 - Dynamics **3 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**

- ENGR 3132 - Strength of Materials Lab **1 Credits**

- ENGR 3131 - Strength of Materials **3 Credits**
- MET 3101 - Fluid Mechanics Principles & Applications **4 Credits**
- MET 1000 - Mechanical Engineering Technology Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 1321 - Machining and Welding **2 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- MET 3132 - Engineering Materials **4 Credits**
- MET 3401 - Thermodynamics I **3 Credits**
- MET 4141 - Machine Design I **4 Credits**
- MET 4421 - Instruments and Controls **4 Credits**
- MET 3501 - Engineering Computation Using MATLab **3 Credits**

Select one of the following four courses (3 Credits)

- MET 3123 - Dynamics of Machines **3 Credits**
- MET 3331 - Tool Design **3 Credits**
- MET 3402 - Thermodynamics II **3 Credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 Credits**
- MET XXXX - Major Electives (For Concentration) **12 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129

Note:

Note 1. MET majors are required to earn an overall 2.0 average in all courses designated as MET and ENGR.

Note 2. PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L may be substituted for PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L .

Note 3. The Free Elective may not be MATH 1111 .

Programs of Study

Major

Apparel and Textiles, BAT

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- C1 - Literature of the World **3 Credits**
- C2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Two Area D Lab Science Courses **8 Credits**
- Math - One Area D Math Course **4 Credits**

Note: A student cannot receive credit towards the ATT degree for both MATH2260 and IET2227

Area E

- E1 - US History **3 Credits**
- E2 - World History **3 Credits**
- E3 - Behavioral Science **3 Credits**
- E4 - Cultures and Societies **3 Credits**

Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
  One credit from MATH 1113 will be added to Area F to complete the 18 hour requirement.

Major Courses

- ATT 1000 - Orientation **1 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**
- ATT 4840 - Textile/Apparel Business Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

ATT Related Electives: Select four courses: * 12

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ATT 4820 - Senior Internship **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- Free Electives **6 Credits**
  Note: A student cannot receive credit towards the ATT degree for both MATH2260 and IET2227

Degree Program Total: 120

* At least six hours of Related Elective must be upper level courses

Architecture, BARCH

[5 Year Professional Degree]

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Sciences - Lab Science - Any Lab Science **4 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 American Context , One Course **3 Credits**
- Group 2 World History , One Course **3 Credits**
- Group 3 Behavioral Science , One Course **3 Credits**
- Group 4 Cultures and Societies , One Course **3 Credits**

Area F

- ARCH 1001 - Design Foundation I **4 Credits**
- ARCH 1002 - Design Foundation II **4 Credits**
- ARCH 1241 - Design Communication I **2 Credits**
- ARCH 2003 - Design Foundation III **4 Credits**

- ARCH 2242 - Design Communication II **2 Credits**
  One credit from MATH 1113 and one credit from MATH 2253 will be added to Area F.

Requirements

Architecture

- ARCH 1000 - Orientation to Architecture **2 Credits**
- ARCH 2111 - Architecture Culture I: Early Civilizations & Medieval **3 Credits**
- ARCH 2004 - Design Foundation IV **4 Credits**
- ARCH 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- ARCH 2211 - Architecture Structures I - Introduction to Structures **3 Credits**
- ARCH 2311 - Environmental Tech I - Systems Selection and Materials **3 Credits**
- ARCH 3011 - Architecture Studio V **4 Credits**
- ARCH 3012 - Architecture Studio VI **4 Credits**
- ARCH 3113 - Architecture Culture III - 1850 through 1945 **3 Credits**
- ARCH 3116 - Urban Planning and Design Theory **3 Credits**
- ARCH 3211 - Architecture Structures II: Steel and Wood **4 Credits**
- ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads **3 Credits**
- ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems: **3 Credits**
- ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation: **3 Credits**
- ARCH 4013 - Architecture Studio VII **4 Credits**
- ARCH 4014 - Architecture Studio VIII **4 Credits**
- ARCH 4114 - Architecture Cultures IV: 1945-Current **3 Credits**
- ARCH 4224 - Professional Practice I - Codes and Technical Documents **3 Credits**
- ARCH 5412 - Professional Practice II - Cost Control **2 Credits**
- ARCH 5413 - Professional Practice III - Practice and Ethics **3 Credits**
- ARCH 5593 - Thesis Prep **2 Credits**
- ARCH 5998F - Focus Studio **4 Credits**
- ARCH 5999R - Thesis Research S/U **1 Credits**
- ARCH 5999T - Thesis Studio **4 Credits**
- Electives **17 Credits**
- ARCH 39X1 - Special Topics **1 to 4 Credits**
- ARCH 49X1 - Directed Study **1 to 4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Degree Program Total: 153

Biology, B.S.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
  Take any 2 of the courses below (with labs) for a total of 8 hours:
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

Note:

PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Take any 4 courses (with labs) from the list below for a total of 18 hours*. (*Includes 2 carry-over credits from Area A and Area D.) Courses used as Area D requirements may not be selected.

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

Note:

PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L

Common Biology Major Requirements

A grade of "C" or better must be earned in all courses (excluding core areas A-E and free electives).

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Biology major must complete one program track (see below).

General Biology Track Requirements

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- At least 5 additional BIOL or BIOC courses above 2199 (excluding track requirements), with **at least one course** from each of the **Cellular Form and Function group** and the **Organismal Form and Function group 17-21 Credits**
- Free Electives **9-13 Credits**

Cellular Form and Function group

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4410 - Immunology **3 Credits**
- BIOL 4470 - Plant Physiology **3 Credits**

Organismal Form and Function group

- BIOL 3700K - Ichthyology **4 Credits**
- BIOL 4100K - Entomology **4 Credits**
- BIOL 4110 - Parasitology **3 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**

Biochemistry & Molecular Biology Track Requirements

- BIOL 3200K - Applied Molecular Biology Laboratory **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOC 3112K - Biochemistry II **4 Credits**
- At Least 4 additional BIOL or BIOC courses above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives 9 – **13 Credits**

Bioinformatics Track Requirements

- BIOL 2500K - Bioinformatics I - Tools & Databases **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 4510K - Bioinformatics II **4 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- At least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9 – 12 Credits**
- Free Electives **2 – 5 Credits**

Biotechnology Track Requirements

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4350K - Cell and Tissue Culture **4 Credits**
- BIOL 4600K - Biotechnology **4 Credits**
- At Least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9-11 Credits**
- Free electives **6-8 Credits**

Pre-Health Professional Track Requirements

- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- At Least 4 additional BIOL or BIOC Courses Above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **9-13 Credits**

Degree Program Total: 120

Biology, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of

students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**

- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
  Elective Credits **8 Credits** (Choose 2 from following)
- BIOL 3310K - Molecular Biology
- BIOL 4400K - Human Physiology
- BIOL 4460K - Human Anatomy
- BIOL 4600K - Biotechnology

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 126

Chemistry, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
  Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- NOTE: 1 credit each from Area A and Area D Math will be used to add to the 18 hours required in Area F.

Chemistry Major Requirements

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CHEM 2601 - Chemical Literature **2 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Chemistry major must complete one program track (see below).
- 1 Hour from Area A Math and Area D Math will be added to the total hours in the major.

General Chemistry Track

- Four additional BIOC, CHEM, MATH, or Science electives at the 3000 level or higher. **12-16 Credits**
- Free electives **11-15 Credits**

Materials Science Track

- MSCI 3101K - Introduction to Material Science **4 Credits**
- CHEM 4412 - Main Group Inorganic Chemistry **3 Credits**

- CHEM 4415 - Solid State Chemistry **3 Credits**
- Upper-level CHEM elective **3-4 Credits**
- Free electives **13-14 Credits**

Total Hours: 120 Hours

Chemistry, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits***
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

*NOTE

The following Physics sequences are recommentend to satisfy AREA D

     PHYS 1111 /PHYS 1111L & PHYS 1112 /PHYS 1112L OR

     PHYS 1211/PHYS 2211L & PHYS 2212 /PHYS 2212L

Civil Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*Note: 1 hour from Area A MATH 1113 will be used to satisfy Area F 18 hour requirement.

- CET 2110 - Problem Solving Methods in CET **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- SURV 2221 - Surveying I **4 Credits**

Requirements

- CET 1001 - Orientation to the Civil ET, Environmental ET, and Geospatial Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 3510L - Traffic Analysis and Road Design Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3430L - Site Exploration and Field Testing Lab **1 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- CET 4130 - Special Inspections **2 Credits**
- CET 4240L - Structural Detailing Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**
- ENGT 3124L - Strength of Materials Lab **1 Credits**
- CET Electives **9 Credits**
- MATH 2253 (Area D Carryover) **1 Credit**

Degree Program Total: 124

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

Civil Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- MATH 2254 - Calculus II **4 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**

Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ENVS 2202 - Environmental Science (ECORE) **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **3 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3202 - Design of Concrete Structures **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3708 - Geotechnical Engineering Lab **1 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 3703 - Environmental Engineering II **3 Credits**
- CE 3704 - Environmental Engineering Lab I **1 Credits**
- CE 4103 - Design of Steel Structures **3 Credits**
- CE 4105 - Foundation Design **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4179 - Transportation Engineering Lab **1 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CE XXXX Technical Electives **6 Credits**

Degree Program Total: 130

The Civil Engineering degree requires a grade of "C" or better in all CE, SURV, and ENGR courses applied to degree requirements.

CE Technical Electives: (6 hrs)

- CE 4704 - Engineering Hydraulic Analysis and Design **3 Credits**
- CE 4705 - Advanced Soil Mechanics **3 Credits**
- CE 4706 - Pavement Engineering **3 Credits**
- CE 4707 - Design of Wood Structures **3 Credits**
- CE 4708 - Hazardous Waste Engineering **3 Credits**
- CE 4709 - Advanced Structural Analysis **3 Credits**

Computer Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ECET 1101 - Circuits I **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
  Note that the carryover credits from Area A Math and Area D Math will be added to Area F to total 18 hours.

Major Courses

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits ****
- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 3710 - Hardware Programming and Interfacing **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4610 - Control Systems **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- CpET Electives **11**

Degree Program Total: 129

Note:

* PHYS 1111/PHYS 1111L and PHYS 1112 /PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

CpET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

CpET Electives

Embedded Systems (take 2 of the following courses)

Graduate will specialize in the design and implementation of smart devices used in products ranging from audio to medical to security systems. Both hardware design and programming at the system level will be stressed. The specialist will gain resume skills such as DSP and VHDL design, embedded micro-controller and embedded PC interfacing and programming.

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

Networks (take 2 of the following courses)

Graduate will specialize in the development and implementation of networks of computers and micro-controllers. Applications include Telemedicine, factory automation systems, point-of-sales systems, and robotics. There will be heavy emphasis of high-level programming using C, Visual C++, JAVA, Visual BASIC, HTML, Windows, LINUX, TCP/IP, etc. Hardware will emphasize PCs and embedded PCs, smart devices, LAN technologies, and remote sensing and control.

- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 48XX - BS Telecom 3000-4000 course
- ECET 48XX - BS Telecom 3000-4000 course
  Note: *ECET 4830 cannot be used as an elective.*

Computer Game Design and Development, BS

Students must earn a C or better in all the major courses (CSE, CS, SWE, and CGDD).

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2254 - Calculus II
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112K - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
  One credit from MATH 2253 & MATH 2254 will be added to Area F to complete the 18 hour requirement.

Requirements

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
  Advanced Topics:
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4303 - Educational and Serious Game Design **3 Credits**
- CGDD 4803 - Studio **3 Credits**
- CGDD 4814 - Capstone **4 Credits**
- Free Electives **6 Credits**
- Concentration (listed below): **9-10 Credits**

Note:

Students are strongly recommended to take at least one Physics course for their Area D because some later courses in this program (in particular the CGDD 4113 and CGDD 4603) may rely upon Physics. Students who are interested in the Simulation-Informatics concentration (see below) may find Biology or Chemistry beneficial instead of Physics.

Students taking the Educational-Serious or Planning Management concentration should consult with their advisor to ensure they have the required prerequisite courses needed (using free elective) since some of these concentration courses require specific electives that must be taken prior to the concentration courses.

BS CGDD Upper-level Concentration

While the required courses in the degree ensure students are exposed to the breadth of the field of computer game design and development, it is also imperative that students are given flexibility to customize their experience and apply the knowledge gained in their required courses. To this end, the degree requires students select a concentration in which they may gain a depth of knowledge within their chosen area.

The following are suggested concentrations, but students may select a customized plan of study and set of courses under with their advisor's approval.

Media-Production

- MATH 3312 - Linear Algebra **4 Credits**
- CGDD 4113 - 3D Modeling and Animation **3 Credits**

- CGDD 4603 - Production Pipeline and Asset Management **3 Credits**

Distributed-Mobile

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**

Educational-Serious

- 6 hours of approved TCOM courses
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**

Planning-Management (pick 3 of 4)

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 4663 - Software Project Management **3 Credits**

Simulation-Informatics

- CSE 3153 - Database Systems **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

BS CGDD Program Objectives

Meet the educational needs of students and prepare them for careers within the discipline

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

Create a strong community of students and alumni

Serve the community and industry

BS CGDD Learning Outcomes

Upon graduation, students will be able to:

- Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
- Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
- Utilize mathematics and science in game design and development
- Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
- Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
- Demonstrate an understanding of social, professional global, and ethical issues related to computing
- Work effectively in teams on system development projects
- Demonstrate effective oral and written communication skills

Degree Program Total: 121

Computer Science, BA

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
- Take any 2 of the courses below (with labs):

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- Free Elective **(1 credit hour)**
- 1 hour each from Areas A & D **(2 credit hours)**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**

- SWE 3613 - Software System Engineering **3 Credits**
- Upper-Level CS Elective (or Approved UL CGGD/SWE/IT Elective) **4 Credits**
- Upper-Level Free Electives (UL CS must be at least 4 hours, and the total of CS UL and UL free electives is 10 hours) **6 Credits**
- Approved Minor **15 Credits**
- Free Electives **5 Credits**

Degree Program Total: 123

Computer Science, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2253 - Calculus I **4 Credits**
  Take any two courses (plus labs) from the following for a total of 8 hours:
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**

- PHYS 2212 - Principles of Physics II **3 Credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- 1 hour each from Areas A & D **(2 credit hours)**
- Free Elective **(1 credit hour)**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
  OR
- MATH 1401 - Intro to Statistics **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4893 - Computer Science Capstone **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Approved Math Elective (MATH 2255, 2306, 2335, 3000 level or 4000 level) **3 Credits**
- Upper Level CS Electives (See approved list below) **9 Credits**
- Free Electives (Except MATH 1111) **5 Credits**

Approved Courses for CS Upper Level Electives

- IT 4153 - Advanced Database **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- SWE 3843 - Embedded Systems Construction and Testing **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4633 - Component-Based Software Development **3 Credits**
- SWE 4743 - Object-Oriented Development **3 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

Degree Program Total: 122

Construction Engineering, BS

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Cultures and Societies **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **3 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- CM 3160 - Construction Equipment **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CE 4202 - Steel and Concrete Design **4 Credits**
- CM 4710 - Construction Safety **4 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**

Degree Program Total: 130

The Construction Engineering degree requires a grade of "C" or better in all CE, SURV, ENGR and CM courses applied to degree requirements.

Construction Management, BS

Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C:

- Group 1 - Take One Course from the Literature Group **3 Credits**
- Group 2 - Take One Course from the Art and Culture Group **3 Credits**

Area D: Laboratory Sciences

- Group 1 - Any Two Lab Sciences (PHYS 1111, PHYS 1111L required and CHEM 1211, CHEM 1211L recommended) *See Note 2 for PHYS 1111, PHYS 1111L **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits** recommended for Area D– **See Note 2**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Group 2 - MATH 2240 - Survey of Calculus **3 Credits**

Area E: Social Sciences

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** recommended for Area E– **See Note 1**
- Group 4 - Cultures and Societies **3 Credits**

Area F:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- SURV 2200 - Construction Measurements **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**

Major-CM Courses

- ECON 1101 - Introduction to Economics **3 Credits** (if needed)
- PHYS 1111 - Introductory Physics I **3 Credits** (If Needed)
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits** (If Needed)
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- CM 1000 - Orientation to Construction and Development **2 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
- CM 3040 - Building Information Modeling Applications I **3 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3180 - Mechanical and Electrical Building Systems **4 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3500 - Building Codes **2 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4710 - Construction Safety **4 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**
- CM 4900 - Capstone Project **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- Concentration required (see choices below) **21-22 Credits**

General Concentration

- CM 3210 - Applied Structures **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Management Technique **3 Credits**

Land Development Concentration

- CM 3310 - Introduction to Development **3 Credits**

- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 4620 - Development Process II **3 Credits**

Specialty Concentration

- CM 3280 - Building Mechanical and Electrical Codes and Loads **4 Credits**
- CM 3480 - Mechanical and Electrical Systems Estimating **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 3190 - Sustainable Construction **3 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**

Facilities Management

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3290 - Facilities Management **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4190 - Sustainable Operation & Maintenance **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Heavy Construction Management Concentration

- CM 3160 - Construction Equipment **3 Credits**
- CM 3170 - Heavy Construction Practices **4 Credits**
- CM 3230 - Heavy Materials & Temporary Structures **4 Credits**
- CM 3440 - Heavy Estimating **4 Credits**
- CM 4230 - Soils & Earthmoving **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**

Degree Program Total: 128

Note:

Note 1: *If ECON 1101 was taken to satisfy Area E, Group 3, a 3-hour Construction Elective can be substituted.*

Note 2: *If PHYS 1111 , PHYS 1111L were taken to satisfy Area D, Lab Science, a 4-hour Construction Elective can be substituted.*

Electrical Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
  or
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits** and
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
  or
- BIOL 2107 - Principles of Biology I **3 Credits** and
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**

Major Courses

- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3500 - Survey of Electric Machines **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3620 - Signals and Systems Analysis **4 Credits**
- ECET 4610 - Control Systems **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits** **
- EET Electives **13 Credits**

Degree Program Total: 128

Note:

* PHYS 1111, PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L*

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.*

EET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

EET Electives

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below:

Biomedical

- ECET 3020 - Biomedical Instrumentation **4 Credits**
- ECET 3030 - Biomechanics **4 Credits**
- ECET 4010 - Virtual Biomedical Instrumentation **4 Credits**
- ECET 4020 - Biomedical Imaging **4 Credits**
- ECET 4030 - Bioinformatics and Telemedicine **4 Credits**
- ECET 4040 - Biometrics **4 Credits**
- ECET 4050 - BMET Capstone **4 Credits**

Communications

- ECET 4320 - Active Filters **4 Credits**
- ECET 4330 - Audio Technology **4 Credits**
- ECET 4420 - Communications Circuit Applications **4 Credits**
- ECET 4431 - Wireless Communications Systems **4 Credits**
- ECET 4432 - Fiber-optic Communications Systems **4 Credits**
- ECET 4450 - RF Electronics **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

Digital

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

Power

- ECET 4510 - Power System Analysis **4 Credits**
- ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC **4 Credits**
- ECET 4530 - Industrial Motor Control **4 Credits**
- ECET 4540 - Introduction to Power Electronics **4 Credits**
- ECET 4560 - Electric Drives **4 Credits**

Telecommunications

- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

Electrical Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- MATH 2254 - Calculus II **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- One hour from Area A Math
- One hour from Area D Math

Requirements

- EE 1000 - Foundations of Electrical Engineering **2 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- EE 2302 - Circuit Analysis II **3 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EE 3501 - Embedded Systems **4 Credits**
- EE 3605 - Electromagnetics **3 Credits**
- EE 3701 - Signals and Systems **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 3702 - Communication Systems **3 Credits**
- EE 3601 - Electric Machines **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- EE 4701 - Professional Practice **3 Credits**
- EE 3/4XXX - Technical Electives **9 Credits**
- EE 3/4XXX - Engineering Science Elective **3 Credits**
- EE 4800 - Senior Project **4 Credits**
- Math Elective - Math above 2335 **3 Credits**

Degree Program Total: 129

The Electrical Engineering degree requires a grade of "C" or better in all EE and ENGR courses applied to degree requirements.

English and Professional Communication, BA

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Science **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  Or
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Course in Behavioral Science **3 Credits**
- Group 4- Course in Cultures and Societies **3 Credits**

Area F

Required Courses, 12 Credits
- COMM 2170 - Introduction to Media Studies **3 Credits**
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
- ENGL 2500 - Language and Meaning **3 Credits**
  Choose Two Courses, 6 Credits
- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- Other coursework, as approved by the Department (6 Credits Max)
- Any Foreign Language, 2001 or higher (6 Credits Max)

Upper Level Required Courses (19 Credits)

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- ENGL 4110 - Writing in Collaborative Environments **3 Credits**
- ENGL 4800 - Project Portfolio **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**

Upper Level Area Distribution (27 Credits)

- A minimum of 6 credit hours must be taken in each of the three tag areas.
- No more than 6 credits may be at the 2000 level.
- Up to 6 credits outside of courses listed below, with departmental approval.

1. **Textual Production Area**

   COMM 2000 - Business Communication
   COMM 3250 Newspaper Practicum
   ENGL 3081 Studies in Genre
   ENGL 3082 Science and Literature
   ENGL 3010 Science Writing
   ENGL 3025 Creative Writing Workshop
   ENGL 3040 Article and Essay Workshop
   ENGL 3045 New Media Writing
   TCOM 3015 Environmental Writing
   TCOM 3020 Grant and Proposal Writing
   TCOM 4000 Professional Editing

2. **Visual Production Area**

   ARTS 2010 Intro to Drawing
   ARTS 3010 Drawing for New Media
   ARTS 3000 Visual Thinking
   ARTS 3170 Digital Photography

TCOM 3430 Foundations of Graphics
TCOM 4040 Applied Graphics
TCOM 4170 Film and Video Production
TCOM 4400 Advanced Design for the Web

3. **Media & Cultural Studies Area**

ENGL 3180 Film as Literature
ENGL 4010 Publishing for New Media
ENGL 4170 Media and Narrative
COMM 3060 Media, Culture, and Society
COMM 3065 International Communication
TCOM 4045 Foundations of Multimedia
TCOM 3145 Social Media Integration

Free Electives (15 credits)

Degree Program Total: 121

For additional information about the B.A. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Environmental Engineering Technology, BS

Requirements

Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C:

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E:

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F:

Core related to major.

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

Additional Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CET 2200 - Introduction to Structures **4 Credits**

- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- CET 4320 - Unit Operations in Environmental Engineering **4 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- MATH MAJOR COURSES: Excess from AREA A AND D **2 Credits**
- CM 4710 - Construction Safety **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

Major Electives:

Take minimum of 6 hours from major electives listed below:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MET 3400 - Thermodynamics and Heat Transfer **3 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- BIOL 3300K - Ecology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- CET 4340 - Air Pollution Control **3 Credits**

Degree Program Total: 123

EvET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

Environmental Science, B.S.

Core Requirements

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

Environmental Science majors MUST take the courses listed below to satisfy prerequisites for the major courses.

- MATH 2253 - Calculus I **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Environmental Science Major Requirements

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 4200K - Zoology OR BIOL 4440K - Botany **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- ENVS 4300 - Environmental Ethics **3 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 4500 - Environmental Science Internship **3 Credits**
- Environmental Science Electives (see approved courses below) **12 Credits**

Environmental Science Electives (12 semester hours from the list below)

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3250K - Ecosystem Ecology **4 Credits**
- BIOL 3500 - Biostatistics **3 Credits**
- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3700K - Ichthyology **4 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3200K - Atmospheric Chemistry **3 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

- ENVS 3150K - Environmental Toxicology **4 Credits**
- ENVS 3250 - Natural Resource Management **3 Credits**
- ENVS 3450 - Conservation Biology **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 121

Industrial Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Science* Note 1 **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits** * Note 2
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Major Courses

- IET 1000 - Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3433 - Product and Process Costing **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4451 - Systems Simulation **3 Credits**
- IET 4475 - Senior Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- Free Electives **6 Credits**

IET Electives (9 semester hours from the list below)

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**

- IET 4111 - Design of Experiments **3 Credits**
- IET 4121 - Advanced Topics in Quality Assurance **3 Credits**
- IET 4478 - Senior Internship **3 Credits**

Degree Program Total: 128

Note 1 - Physics I and Physics II are preferred Area D Sciences, however, any Lab Sciences from the approved list is permissible.

Note 2 – Chemistry I is the preferred Area F Science, however, any Lab Science from the approved list is permissible.

A grade of "C" or better is required in all courses used in the major prescribed for the bachelor degree program.

Concentration in Logistics

The primary objective of the Concentration in Logistics is to provide training and education to students interested in entering the Supply Chain industry.

Required Courses

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**

- IET 3511 - Sustainability Engineering **3 Credits** or
- IET 3620 - Warehousing Systems **3 Credits**

- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

Concentration in Quality Principles

The primary objective of the Concentration in Quality Principles is to provide training and education to students interested in quality system principles, methodology, elements and standards.

Required Courses:

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

Information Technology, BAS

This program is designed for students who have completed an AAS or AAT degree from a two year technical college in a computing discipline.

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

AREA C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 1113 - Pre-calculus **(3 credits - 1 hour to Area F)**
Take any 2 of the courses below (with labs) for a total of 8 hours:

- ASTR 1000K - Introduction to the Universe **4 credits**
- BIOL 2107K - Principles of Biology I **4 Credits**
- BIOL 2108K - Principles of Biology II **4 Credits**
- CHEM 1211K - Principles of Chemistry I **4 Credits**

- CHEM 1212K - Principles of Chemistry II **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credit**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credit**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory **1 credit**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credit**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Students who do not have enough hours from their technical block and general education hours to equal 60 semester hours, may receive "elective" credit hours to make up the deficient number of hours.

    Technical Block Course **(3 credit hours)**
    Technical Block Course **(4 credit hours)**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- Area D Carryover credit **1 credit**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- Technical Block Remainder Courses from AAS **(30 credit hours)**
- Directed Electives - Choose 2 from the course list below. **6 credits**

Directed Electives

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**

Degree Program Total: 122

All IT, CS, CSE and SWE designator courses must have a grade of 'C' or better.

Information Technology, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

AREA C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2240 - Survey of Calculus or MATH 2253 - Calculus I **3 Credits**
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112K - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits** OR
- IET 2227 - Introduction to Statistics **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits** OR
- MATH 2345 - Discrete Mathematics **3 Credits**
- Carryover credit from Area A Math **1 Credit**

Requirements

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**

- IT 4423 - Unix/Linux **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4983 - IT Capstone **3 Credits**
- Free Electives **7 Credits**
- Concentration or Technical Electives (see listing below) **12 Credits**

Degree Program Total: 122

Tracks

Choose one of the tracks below and complete 3 of their courses. The 4th elective can be from the same or different track.

Enterprise Systems Track

- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4673 - Virtual IT Systems **3 Credits**
- IT 4713 - Business Intelligence Systems **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Information Assurance & Security Track

- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Health Information Technology Track

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4513 - Electronic Health Record Systems **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Mobile and Web Track

- CSE 3203 - Overview of Mobile Systems **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4213 - Mobile Web Development **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Information Technology, BS (Online) WebBSIT

WebBSIT Curriculum

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

Area F (18 Credits)

- WBIT 1100 - Introduction to Information Technology **3 Credits**
- WBIT 1310 - Programming and Problem Solving **3 Credits**
- MATH 1401 - Intro to Statistics **3 Credits** (Available from WebBSIT participating institutions or through eCore®)
- WBIT 2000 - The Enterprise and IT **3 Credits**
- WBIT 2300 - Discrete Mathematics for IT **3 Credits**
- WBIT 2311 - Programming and Problem Solving II **3 Credits**

Required Core Courses (42 Credits)

- WBIT 3010 - Technical Communication **3 Credits**
- WBIT 3110 - Systems Analysis and Design **3 Credits**
- WBIT 3111 - Information Technology Project Management **3 Credits**
- WBIT 3200 - Database Design, Development and Deployment **3 Credits**
- WBIT 3400 - Introduction to Multimedia **3 Credits**
- WBIT 3410 - Web Applications Development **3 Credits**
- WBIT 3500 - Architecture and Operating Systems **3 Credits**
- WBIT 3510 - Data Communications and Networking **3 Credits**
- WBIT 3600 - Introduction to E-Commerce **3 Credits**
- WBIT 4020 - Professional Practices and Ethics **3 Credits**
- WBIT 4030 - Senior Project **3 Credits**
- WBIT 4112 - Systems Acquisition, Integration and Implementation **3 Credits**
- WBIT 4120 - Human-Computer Interaction **3 Credits**
- WBIT 4520 - Information Security **3 Credits**

Concentration/Electives (18 Credits)

- WBIT 4601 - Customer Relationship Management **3 Credits**
- WBIT 4602 - IT Strategy Seminar **3 Credits**
- WBIT 4610 - IT Policy and Law **3 Credits**
- Free Electives (not within the WebBSIT) - **9 Credits**

Total Required Hours: 120 Credits

International Studies, BS

By offering an International Studies degree with a required minor, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess field-specific skills and knowledge that will allow them to deal with the new demands of the global economy. Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function. The International Studies degree will prepare graduates for graduate study in a number of possible fields and for employment in:

- Government
- Intelligence
- International business
- Pre-law
- Public policy
- The military
- The non-profit sector
- The transportation industry

- The travel industry

Requirements

Core Areas A through E

Area A: Essential Skills (9 credits)

Grade of C or better requied in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:
- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**

- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following (language course recommended):
- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture = 3 credits; lab = 1 credit; K-course=4 credits, including lab).

Choose TWO science courses with lab:
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:
- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**

- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits):

Take ALL of the following:
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
  Or 6 credit hours of any non-English language at an equivalent level.
- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

Required Courses in Major (29 credits):

Grade of C or better required. Take ALL of the following:

- IS 1000 - International Studies Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
  Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
  To be taken in one of the last two terms before graduation (taught Spring only):
- IS 4800 - International Studies Capstone **3 Credits**

Directed International Electives (9 credits):

Grade of C or better required. Choose THREE of the following:

Take THREE of the following:

- ECON 2106 - Principles of Microeconomics **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4000 - Regional Studies - General **3 Credits**
  or any Regional Studies (IS 400X) not used to satisfy Required Courses in the Major
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
  or any 3000- or 4000- level SPAN
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  OR any IS special topics course. Special topics courses in HIST, POLS, PSYC may be used with topic-specific departmental approval.

Minor 15-18 Hours

International Studies majors must complete at leat one of the minors offered at SPSU (in any department or program). Department policy requires that at least 9 hours in a minor not be used to meet any other reqirement *except free electives*. University policy requires that no hours used in Core Areas A-E may used toward any other requirement.

Free Electives

Additional credit hours to bring the minimum total credits to bring the total hours up to the 120 required for graduation. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Degree Program Total: 120

Manufacturing Operations, BAS

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website iet.spsu.edu/BAS.html outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Technical Electives

Choose any two courses

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 120

Mathematics, BS

Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- CSE 1302 - Computer Science II **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Mathematics Electives (9 Credits)

Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.

Guided Electives (20 Credits)

May include additional mathematics courses or other courses chosen in consultation with an advisor. May not include mathematics courses numbered less than 2000, or courses for which dual credit is not allowed.

Degree Program Total: 121

Mathematics Second Major

A student completing the B.S. degree in a field other than Mathematics may receive a second major in Mathematics at the same time to accompany that degree by completing the following courses. Note that additional courses, which are the prerequisites to these courses, are required by implication.

Mathematics Second Major Requirements

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Second Degree in Mathematics

Students who receive a degree from SPSU in a field other than Mathematics may receive a B.S. with a major in Mathematics by completing all the requirements for the Mathematics degree. The same courses may be used to fulfill requirements for both degrees, but there must be at least 30 semester hours used to fulfill the requirements for the Mathematics degree which are not used to fulfill the requirements for any other degree.

Mathematics, Education Track, BA

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
  CSE 1301 **3 Credits** (Choose from following)
- CSE 1301C - Programming & Problem Solving I
- CSE 1301E - C++ Programming for Engineers
- CSE 1301J - Programming & Problem Solving I

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**

- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 3696 - Geometry **3 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH Electives **3 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- MAED 2010 - Functions and Modeling **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 123

Mechanical Engineering Technology, BS

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended for Area E-3)
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (the extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**

- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EDG 1212 - Engineering Graphics II **4 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- MET 3126 - Engineering Dynamics with Applications **3 Credits**

- ENGR 3122 - Dynamics **3 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**

- ENGR 3132 - Strength of Materials Lab **1 Credits**

- ENGR 3131 - Strength of Materials **3 Credits**
- MET 3101 - Fluid Mechanics Principles & Applications **4 Credits**
- MET 1000 - Mechanical Engineering Technology Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 1321 - Machining and Welding **2 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- MET 3132 - Engineering Materials **4 Credits**
- MET 3401 - Thermodynamics I **3 Credits**
- MET 4141 - Machine Design I **4 Credits**
- MET 4421 - Instruments and Controls **4 Credits**
- MET 3501 - Engineering Computation Using MATLab **3 Credits**

Select one of the following four courses (3 Credits)

- MET 3123 - Dynamics of Machines **3 Credits**
- MET 3331 - Tool Design **3 Credits**
- MET 3402 - Thermodynamics II **3 Credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 Credits**
- MET XXXX - Major Electives (For Concentration) **12 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129

Note:

Note 1. MET majors are required to earn an overall 2.0 average in all courses designated as MET and ENGR.

Note 2. PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L may be substituted for PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L .

Note 3. The Free Elective may not be MATH 1111 .

Mechanical Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World - 3 credits
- Group 2 - Art and Culture of the World - 3 credits

Area D

- MATH 2254 - Calculus II **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits   *ECON 2107 is recommended**

- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Major Courses

- ME 1001 - Introduction to Mechanical Engineering **2 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ME 1311 - MATLAB for Engineers with Applications **3 Credits**
- Math or Science Electives **3-4 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ME 3101 - Materials Science and Engineering **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ME 4250 - Computer Aided Engineering **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- ME 4403 - Heat Transfer and Thermodynamics Lab **1 Credits**
- ME 3410 - Thermodynamics **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ME 3440 - Heat Transfer **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 4141 - Machine Design I **3 Credits**
- ME 4201 - Senior Design I **1 Credits**
- ME 4202 - Senior Design II **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**
- MATH 2255 - Calculus III **4 Credits**
- Approved Technical Electives **9 Credits**

Degree Program Total: 130

The Mechanical Engineering degree requires a grade of "C" or better in all ME and ENGR courses applied to degree requirements.

Technical Electives

Technical Electives can be any non-required 3000 and/or 4000 level courses from ME, including Special Topics (ME 3903 or ME 4903) and Undergraduate Research (ME 4801, ME 4802, and ME 4803). Additionally MTRE 3710 and SYE 3320 are allowed. Students may focus their technical electives in Aerospace Engineering (SYE 3801, SYE 3802, SYE 3803, SYE 4801, SYE 4802, SYE 4803) or Nuclear Engineering (SYE 3501, SYE 3502, SYE 4501, SYE 4502, or SYE 4503).

Some ENGR, EE, MTRE, or SYE may be approved for technical electives by the program coordinator or the department chair.

**If student does not take ECON 2107 for Core E-3, the student must take SYE 3320 - Engineering Economics and Decision Analysis as a Technical Elective.

Mechatronics Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- MATH 2254 - Calculus II **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

One hour from Area A Math

One hour from Area D Math

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**

Requirements

- MTRE 1000 - Introduction to Mechatronics Engineering **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- Math Elective **3 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- MTRE 2610 - Engineering Algorithms and Visualization **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- MTRE 3710 - Mechatronics Engineering Fundamentals **4 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended Area E-3)
- EE 4201 - Control Systems **4 Credits**
- MTRE 4000 - Advanced Controls **3 Credits**
- MTRE 4200 - Robotics Analysis and Synthesis **4 Credits**
- MTRE 4400 - Mechatronics System Design **4 Credits**

Degree Program Total Hours: 131

The Mechatronics Engineering degree requires a grade of "C" or better in all MTRE, EE, ME and ENGR courses applied to degree requirements.

New Media Arts, BA

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  OR
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**

- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

Required Courses 6 Credits
- ARTS 2020 - History and Principles of Design **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**

Studio Courses, Choose Three- 9 Credits
- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 2110 - Painting and Mixed Media **3 Credits**
- ARTS 2220 - 2D and 3D Design **3 Credits**
- ARTS 2903 - Music Theory **3 Credits**

Choose One- 3 Credits
- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

MAJOR REQUIREMENTS

Basic Required Courses in the Major (24 Credits)

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3100 - History of New Media Arts **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ARTS 4100 - Media Arts Studio **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- ARTS 4800 - Senior Portfolio **3 Credits**

Additional Courses in the Major (18 Credits; Choose 6)

- ARTS 3010 - Drawing for New Media **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- ARTS 4270 - Advanced Digital Video **3 Credits**
- ARTS 4600 - Directed Study **3 Credits**
- ARTS 4700 - Internship **3 Credits**
- ARTS 4903 - Special Topics **3 Credits**

- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 4040 - Applied Graphics **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

Free Electives

Free Electives 18 Credits

Degree Program Total: 121

For additional information about the B.A. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Physics, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Choose One Course from the Literature Group **3 Credits**
- Group 2- Choose One Course from the Art and Culture Group **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
  Choose Any Two Lab Science Courses for a total of **8 Credits**
- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science   **3 Credits**
- Group 4- Cultures and Societies   **3 Credits**

Area F

- PHYS 1211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**

- PHYS 4430 - Capstone Physics Project **1 Credits**
- PHYS 4250 - Quantum Theory of Two-State Systems **2 Credits**
- Directed Electives approved by the program **9 - 15 Credits**
- Upper Division Physics Electives/Concentrations **4 - 10 Credits**

Degree Program Total: 121

A Second Degree in Physics

Students who are earning B.S. degrees in other fields at Southern Polytechnic State University may also earn a second major in Physics.

SPSU students who wish to earn a second major in physics will be required to take the following 22 hours of course work:

Second Degree Requirements

- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K - **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**

Physics, Electrical Engineering Concentration, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- PHYS 1211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EE 3301 - Circuits Analysis I **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**

- EE 3705 - Signals and Systems **3 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- Free Electives **4 Credits**

Degree Program Total: 121

Physics, Mechanical Engineering Concentration, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- Free Electives **2 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

Degree Program Total: 121

Concentration in Mechanical Engineering

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

Physics, Teacher Education Concentration, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410 - Electronics Laboratory **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**
- Physics Electives **4 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

Political Science, BS

There is a growing need for graduates in political science. The acquisition of methodological skills, coupled with an understanding of the political process at local, state, national and international levels, allows for employment in a variety of public and private venues where research techniques are highly prized. As well, the communication, analysis, and critical reasoning skills that our graduates obtain place them well in a competitive job market, where continual learning is essential and interpersonal and cross-cultural competencies are greatly needed.

While there are other political science programs offered in Georgia, SPSU's program will be unique in several respects:

- The SPSU program is highly quantitative in focus, offering students three additional quantitative courses in political science research methods and analysis beyond the norm required in other political science programs.
- The SPSU program offers students various inter-disciplinary course options through its Directed International Electives module.
- The SPSU program further establishes a strong international focus by encouraging students to become proficient in a second language.

Students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace. Graduates with a bachelor's degree in political science find positions as committee staffers, budget analysts, communications consultants, research/policy analysts, corporate public affairs advisors, foreign service officers, writers/authors/political commentators, journalists, foundation staffers, lobbyists, marketing analysts, or public opinion analysts. Additionally, SPSU's program's training in the development of research, critical thinking, and communication skills will open opportunities in for-profit/non-profit business settings, international and U.S.-based non-governmental organizations and foundations. Graduates of SPSU's BS in Political Science will be more than qualified to take advantage of the local, regional, national, and international employment opportunities offered by metro Atlanta and the State of Georgia, as well as to pursue post-baccalaureate educational opportunities in either political science or the field of law.

Requirements

All students must take:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Core Areas A-E

Area A: Essential Skills (9 credits)

Grade of C or better required in courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following (language recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

Area D: Science and Math (12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (Minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG *may* need to take HIST 2911: U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation. Please check with your advisor.

Choose ONE of the following (POLS 1101 American Government is required in Area F and may not be used here):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**

- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits)

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
  or 6 credits of any non-English language at an equivalent level
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 1101 - American Government **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

Required Courses in Major (36 credits):

Grade of C or better required.

- POLS 3001 - Comparative Politics **3 Credits**
- POLS 2800 - Research Design **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**
- POLS 3801 - Political Behavior **3 Credits**
- POLS 4100 - Applied Methodology **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
  Choose ONE of the following:
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
  Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
  In one of final two semesters:
- POLS 4801 - Capstone: Political Science Practicum **3 Credits**

Directed International Electives: (12 credits)

Grade of C or better required. Take any FOUR of the following courses:

- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  Up to 6 additional credits in Regional Studies:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

Free Electives (12 credits):

Any college-level credit not used above may be applied here. *Free electives may be used toward a minor and are exempt from the 9 hour rule.*

Degree Program Total: 121

Psychology, BS

Southern Polytechnic State University's Bachelor of Science degree in Psychology provides students a program of study in modern psychology. Specifically, the program embraces a strong international component with a multi-disciplinary curriculum that provides a balanced, career-based education in psychology with a wide range of skills and practical knowledge. The concentrations offered cover the subject matter from seventeen major subfields coupling science and practice. This broad spectrum provides a rich context so that students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace.

Career opportunities for graduates with a B.S. in Psychology include: employment counselors, corporate counselor trainees, interviewers, personnel analysts, systems analysts, rehabilitation assistants, mental health assistants, probation officers and writers. Additionally, training in the development of research and writing skills will open opportunities in profit/non-profit business settings, public affairs, public health, sales and administrative support.

The concentrations offered are:

- Engineering Psychology (involves the science of applying an understanding of human behavior interacting with the design of systems and products that improve human performance)
- Industrial/Organizational Psychology (involves the science of applying an understanding of human behavior with improving productivity and the workplace quality)
- Clinical and Counseling Psychology (involves the science of applying an understanding of human behavior with an emphasis on mental disorders and their treatment)

Requirements

Core Areas A-E

Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K courses=4 credits, including lab). Biology recommended.

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (Minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

 Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE course (sociology recommended):

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits)

- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- PSYC 2273 - Foresic Psychology **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
  (or 3 hours of PSYC 1XXX or 2XXX elective credit if PSYC 1101 has been used in Area E-3)
- PSYC 2011 - Cognitive Psychology **3 Credits**
- PSYC 2270 - Engineering Psychology **3 Credits**
- PSYC 2271 - Clinical and Counseling Psychology **3 Credits**

Required Courses in Major (32 credits):

Grade of C or better required; take all of the following:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- PSYC 1000 - Orientation to Psychology **2 Credits**

- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 2401 - Psychology of Diversity **3 Credits**
- PSYC 3000 - Junior Seminar **3 Credits**
- PSYC 3020 - Physiological Psychology **3 Credits**
- PSYC 3031 - Experimental Psychology **4 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4050 - History and Systems of Psychology **3 Credits**
- PSYC 4800 - Psychology Capstone Seminar **3 Credits**

Concentrations

Choose and complete one of the concentrations below:

Engineering Psychology (28 credits)

Required Courses (22 credits):

Grade of C or better required; take all of the following:

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
  The following must be taken in the order listed:
- CSE 1301J - Programming & Problem Solving I **4 Credits**
  (be sure it's 1301**J**)
- IT 1324 - Advanced Programming Principles **4 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**

Free Electives (6 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Industrial / Organizational Psychology (28 credits)

Required Courses (12 credits):

Grade of C or better required; take all of the following:

- MGNT 4115 - Human Resource Management **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**

- PSYC 4600 - Conflict Resolution **3 Credits**

Concentration Electives (9 credits):

Grade of C or better required; choose THREE of the following:

- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**

Free Electives (7 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Clinical and Counseling Psychology (28 credits)

Required Courses:

Grade of C or better required; take all of the following:

- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3230 - Abnormal Psychology **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**

Concentration Electives (9 credits):

Grade of C or better required; choose THREE from the following:

- PSYC 2273 - Foresic Psychology **3 Credits**
- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 3305 - Developmental Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

Free Electives (10 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Degree Program Total: 120

Software Engineering, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2254 - Calculus I **4 Credits**
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**
- PHYS 2211 - Principles of Physics I **3 credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 credit**
- PHYS 2212K - Principles of Physics II **3 credits**

- PHYS 2212L - Principles of Physics Laboratory II **1 credit**

NO CREDIT FOR PHYS 1111K or PHYS 1112K.

In lieu of PHYS 2211, 2211L, an additional lab science course may be taken to form a sequence with one of the science courses in area D.

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 credits** (Note: If area E is transferred, student must take ECON 2107 in lieu of free electives.)
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Required Courses

- TCOM 2010 - Technical Writing **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** (see note below)
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Sciences **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301C or CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C or CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**

- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4663 - Software Project Management **3 Credits**
- SWE 4713 - SWE Application Domain **3 Credits**
- SWE 4724 - Software Engineering Project **4 Credits**
- SWE Upper Level Electives - Choose 2 courses from the approved list, at least one must be an SWE course **6 Credits**
- Free Electives - (Excludes MATH 1111, PHYS 1111, 1111L and PHYS 1112, 1112L) **5 Credits**

Free Electives

Excludes Math 1111, PHYS 111K and PHYS 1112K.

Note:

A grade of "C" or better must be earned in all CSE, CS, SWE, CGDD, and IT courses applied to degree requirement.

Upper Level Electives

Choose any 2 courses - at least one must be an SWE course.

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- SWE 3843 - Embedded Systems Construction and Testing **3 Credits**
- SWE 4633 - Component-Based Software Development **3 Credits**
- SWE 4743 - Object-Oriented Development **3 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**
- CS 4243 - Systems Programming **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**
- CS 4283 - Real-Time Systems **3 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- CS 4533 - Digital Image Processing **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**

Degree Program Total: 127

Supply Chain Logisitics, BAS

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website iet.spsu.edu/BASSC.html outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Sciences **8 Credits**

- MATH 1113 - Pre-calculus **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Degree Program Total: 120

Surveying and Mapping, BS

Requirements:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math Elective - **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits** or

- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4410 - Surveying Computations and Adjustments **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- SURV 4415 - Geodetic Surveying Methods **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV Electives **4 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129 hours

Note:

Surveying students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

PHYS 1111 and PHYS 1112 are required.

If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 1-2000 level courses or any Lab Science to fulfill the Area F requirement.

If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 3-4000 level courses or any Lab Science to fulfill the major requirement.

Systems Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World - **3 credits**
- Group 2 - Art and Culture of the World - **3 credits**

Area D

- MATH 2254 - Calculus II **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**

- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- CSE 1302E - Object Oriented C++ Programming for Engineers **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Systems Engineering Major

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
  or
- ME 3410 - Thermodynamics **3 Credits**
- SYE 2100 - Systems Analysis and Design **3 Credits**
- SYE 3320 - Engineering Economics and Decision Analysis **3 Credits**
- SYE 2600 - Applications of Probability **3 Credits**
- SYE 3100 - Systems Reliability and Maintainability **3 Credits**
- SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture **3 Credits**
- SYE 3200 - Human Machine Systems **3 Credits**
- SYE 3300 - Program Management **3 Credits**
- SYE 3400 - Engineering Optimization I: Deterministic Decision Models **3 Credits**
- SYE 3600 - Statistics with Applications **3 Credits**
- SYE 3700 - Manufacturing and Production Systems **3 Credits**
  or
- SYE 3710 - Logistics and Supply Chain Systems **3 Credits**
- SYE 4400 - Engineering Optimization II: Stochastic Decision Models **3 Credits**
- SYE 4500 - System Modeling and Simulation **3 Credits**
- SYE 4900 - System Design Project **3 Credits**
  or
- SYE 4803 - Aeronautics Project **3 Credits**
  Approved Technical Electives: **12 Credits**

Technical Electives

Technical Electives can be 3000 and/or 4000 level courses from SYE, SWE, MTRE, ME, CE, EE or MATH. Other courses may be approved by the department chair. Students may focus their technical electives in Aerospace Engineering or Nuclear Engineering.

Degree Program Total: 129

The Systems Engineering degree requires a grade of 'C' or better for any course with an ENGR or SYE prefix and ENGL 1101. A 'D' or better is required for any other course.

Technical Communication, BS

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  OR
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**

- Group 2- World History   **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4-Cultures and Societies **3 Credits**

Area F

Required Courses- 9 Credits
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
- TCOM 2030 - Research in Technical Communication **3 Credits**
Choose Three- 9 Credits
- ARTS 2010 - Introduction to Drawing **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
  Any programming language (recommended CSE 1301J)

Major Requirements

Upper Level Required Courses in the Major (18 Credits)

- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- ENGL 4110 - Writing in Collaborative Environments **3 Credits**
- TCOM 3120 - Technical Communication: Theory and Practice **3-0-3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 4800 - Project Portfolio **3 Credits**

Additional Courses in Major (12 Credits)

- Take any ARTS, COMM, ENGL, or TCOM Course
- No more than 6 credits may be at the 2000 level.
- Up to 6 credits outside of the Department with departmental approval.
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Major Concentrations

Choose one concentration from the following: (Information Design or Digital Media and Graphics)

Information Design (15 Credits)

- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 3030 - Instructional Design **3 Credits**
- TCOM 3045 - Fundamentals of Information Design **3 Credits**
- TCOM 3070 - User Assistance **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 3245 - Analytics and Search Engine Optimization (SEO) for Communicators **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4120 - Usability Testing **3 Credits**

Digital Media and Graphics (15 Credits)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4040 - Applied Graphics **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

Degree Program Total: 121

For additional information about the B.S. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Telecommunications Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ECET 1101 - Circuits I **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Major Courses

- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4830 - Telecommunications Management **3 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**

- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits** **
- TCET Electives **6 Credits**

Degree Program Total: 128

Note:

* PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

TCET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

TCET Electives

Students may take any *non-required* 3000 or 4000 level ECET or MGNT course to satisfy the TCET elective requirement of 6 credit hours.

Minor

Aerospace Engineering Minor

Requirements

- SYE 3801 - Aerodynamics (Aeronautic Elective) **3 Credits**
- SYE 4803 - Aeronautics Project **3 Credits**

Choose 3 courses from the following:

- SYE 3802 - Aircraft Design and Performance (Aeronautic Elective) **3 Credits**
- SYE 3803 - Fundamentals of Avionics **3 Credits**
- SYE 4801 - Aircraft Propulsion **3 Credits**
- SYE 4802 - Helicopter Theory **3 Credits**

Minor Program Total: 15

Apparel and Textiles Minor

To be eligible for a minor in Apparel and Textile Technology, the student must complete 15 credit hours from the following courses with at least 9 hours of upper division course work.

Requirements

- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Minor Program Total: 15

Architecture Minor

Minor in Architecture for non-architecture majors, provides a focused exposure to the varied dimensions of design, critical thinking and application while exercising restraint on time to complete. Students who change their major from Architecture to another major or discipline of their choice can get a Minor in Architecture after fulfilling it's course requirements. Students complete a major in a Program to be awarded with a Minor in Architecture. Minor in Architecture will not be substituted with Certificate in Architectural Studies. All studio and lecture courses must be passed with a minimum grade of "C". All studios should be taken in sequence.

Architecture Minor

- ARCH 1001 - Design Foundation I **4 Credits**
- ARCH 1002 - Design Foundation II **4 Credits**

- ARCH 1241 - Design Communication I **2 Credits**
- ARCH 2003 - Design Foundation III **4 Credits**
- ARCH 2004 - Design Foundation IV **4 Credits**
- ARCH 2242 - Design Communication II **2 Credits**
- ARCH 2311 - Environmental Tech I - Systems Selection and Materials **3 Credits**
- ARCH 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- ARCH 2211 - Architecture Structures I - Introduction to Structures **3 Credits**

Minor Program Total: 29

Biology Minor

To be eligible for a minor in Biology, the student must complete:

- A minimum of 18 semester hours of BIOL or BIOC coursework
- 9 of the 18 hours in BIOL/BIOC must be above the 2199 level
- Students who use BIOL 2107/BIOL 2107L and/or BIOL 2108/BIOL 2108L to satisfy Core D requirements cannot use these courses to satisfy requirements of the minor

Chemistry Minor

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- 10 additional hours of upper division (3000 level or higher) Chemistry or Biochemistry courses.

Total Hours: 26

Computer Game Design and Development Minor

To be eligible for a minor in Computer Game Design and Development, the student must complete the following courses with a grade of "C" or better. Any upper level (3000+) courses that are required in the major may not be used as credit for the minor. Other upper level CGDD courses may be used as substituted. Students must have at least 9

upper level CGDD hours not required for their major (CGDD courses taken as electives for your major bachelor degree can be used to complete the minor).

Minor in Game Design and Development Program Objectives:

- Provide students with game design and development knowledge that can be applied in their major area of study
- Provide students with fundamental game design and development skills

Minor in Game Design and Development Learning Outcomes

- Demonstrate skills fundamental to game design and development
- Demonstrate knowledge in at least two subfields of game design and development

Required Courses

- CSE 1301 -Any 1301 courses (C, J or E) Programming and Problem Solving 1 **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- Three additional upper-level CGDD courses **9+ Credits**

Minor Program Total: 18+ Credits

Computer Science Minor

To be eligible for a minor in Computer Science, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level CS hours out of the 18 required credit hours.

Requirements:

- CSE 1301 - Any CSE 1301 (C, J or E) Programming & Problem Solving I **4 credits**
- CSE 1302 - Any CSE 1302 (C, J or E) Programming & Problem Solving II **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- Two additional upper-level CS courses 6+
  NOTE: CS 3424 requires MATH 2345 - Discrete Mathematics as a pre-requisite.

Total Hours: 18 Credits

Construction Management Minor

Requirements

To be eligible for a minor in Construction Management, the student must complete the following courses:

- CM 2000 - Construction Graphics **3 Credits** *
- CM 3000 - Computer Applications in Construction **3 Credits** *
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

Total Hours: 15 Credits

NOTE: Students who have the prerequisite knowledge in these courses may substitute courses of greater or equal credit from the following list with the consent of the CM Department Chair:

- CM 3411 - Construction Estimating Software **2 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4511 - Construction Scheduling Software **2 Credits**
- CM 4560 - Construction Project Management **3 Credits**

Engineering Design Graphics Minor

Students who wish to receive a minor in Engineering Design Graphics must take:

- EDG 1212 - Engineering Graphics II **4 credits**

Select four additional courses from the following:

- EDG 3112 - Advanced Engineering Graphics **3 credits**
- EDG 4111 - Surface Modeling **3 credits**
- EDG 4222 - CAD Customization and Standards **3 credits**
- EDG 4224 - Engineering Design Graphics for Custom Manufacturing **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 credits**
- OR
- ME 4250 - Computer Aided Engineering **3 credits**

Minor Program Total: 16

Not available to MET students with a concentration in Engineering Design Graphics.

Environmental Science Minor

Requirements

- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3300K - Ecology **4 Credits**

Electives - Choose 7+ credits from the list below

- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3650 - Marine Biology **3 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 3350 - Oceanography **3 Credits**
- ENVS 3000 - Environmental Science Seminar **1 Credits**
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- ENVS 4300 - Environmental Ethics **3 Credits**

Minor Program Total: 15-18 Credits

Geographical Information Systems Minor

Minor in Geographical Information Systems

Required Courses

- SURV 2110 - Introduction to Mapping **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**

Total Hours: 16 Credits

History Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

World History (3 credits):

Choose ONE course not used to satisfy core Area E-2:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

US History (6 credits):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
  If HIST 2111 or HIST 2112 has been used to satisfy Core Area E-1, any 3-hour HIST course may be substituted.

Upper-Division History courses (9 credits):

Any **9 credits** of 3000- or 4000-level HIST courses.

Total Program Hours: 18

Industrial Engineering Technology Minor

To be eligible for a minor in Industrial Engineering Technology,

Students must complete the following three courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**

And choose two courses from the following list:

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**

Minor Program Total: 16-18

Note:

An overall 2.0 GPA is required in the courses for the IET Minor (excluding the international studies minor courses).

Information Technology Minor

To be eligible for a minor in Information Technology, the student must complete the following courses with a grade of "C" or better:

Information Technology Minor Requirements

- IT 1324 - Advanced Programming Principles **4 Credits** or
  CSE 1302J - Programming & Problem Solving II **4 credits**

- IT 3123 - Hardware/Software Concepts **3 Credits** or
- CS 3224 - Computer Organization & Architecture **4 Credits**

- IT 3203 - Introduction to Web Development **3 Credits** or
- CSE 3153 - Database Systems **3 Credits**

And one of the Following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**

Total Hours: 14-15 Credits

International Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives.* No courses used to satisfy Core Areas A-E may be used in a minor.

Regional Studies (3 credits):

Choose ONE of the following:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

Language Requirement:

Student must complete FREN 1002, GRMN 1002, or SPAN 1002 OR demonstrate proficiency in a non-English langage at an equivalent level.

Electives (12 credits):

Choose FOUR courses from the following list NOT used to satisfy core requirements in Areas A-E. No more than TWO may be numbered below 3000.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
  Any regional studies course NOT used to satisfy the Regional Studies requirement above.

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  Special topics courses in HIST, POLS, PSYC may be used as electives with topic-specific departmental approval.

Total Program Hours: 15

Latin American Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- ES 1100 - Ethnic Studies **3 Credits**
  Latino / Hispanic Ethnic Studies ONLY; may not also be used to satisfy E-4 core
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**

Total Program Hours: 15

Logistics Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

Manufacturing Engineering Technology Minor

Students who wish to receive a minor in Manufacturing Engineering Technology must take the following two courses:

- MET 1311 - Manufacturing Processes **3 credits**
- MET 2322 - Metrology and CNC Machining **3 credits**

Select three additional courses from the following:

- EDG 4224 - Engineering Design Graphics for Custom Manufacturing **3 credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 credits**
- MET 3331 - Tool Design **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4342 - Numerical Control of Machines **3 credits**
- MGNT 4135 - Project Management **3 credits**

Minor Program Total: 15

Note: Not available to MET students with a concentration in Manufacturing

Mathematics Minor

To obtain a minor in Mathematics, the student must complete:

- MATH 2255
- An additional 14 semester hours of Mathematics courses at the 2300 level or higher

At least 9 of these additional 14 hours must be at the 3000 level or higher.

Courses used to fill other requirements at SPSU (excluding core areas A through E) may also be used to obtain a minor in Mathematics.

For example, if you take MATH 2306 to fulfill a requirement in the Management curriculum, you may also use it in a math minor. However, you may not use MATH 1113 to fulfill the math minor because it is in area A of the core curriculum.

TOTAL HOURS: 18

Nuclear Engineering Minor

Requirements

- SYE 3501 - Fundamentals of Nuclear Engineering **3 Credits**
- SYE 3502 - Radiation Detection and Measurement **3 Credits**
- SYE 4501 - Nuclear Power Generation **3 Credits**
- SYE 4502 - Radiation Protection and Health Physics **3 Credits**
- SYE 4503 - Nuclear Fuel Cycle **3 Credits**

Minor Program Total: 15

Physics Minor

To be eligible for a minor in Physics, the student must complete at least 15 hours of course work in physics with at least 10 hours in upper division physics courses.

Political Science Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- POLS 1101 - American Government **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
  Choose ONE of the following:
- POLS 3601 - Contemporary World Politics **3 Credits**
  OR
- POLS 4301 - International Political Economy **3 Credits**
  Choose ONE of the following:
- POLS 3701 - Seminar in American Politics **3 Credits**
  OR
- POLS 3801 - Political Behavior **3 Credits**

Total Program Hours: 18

Pre-Law Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses (6 credits):

Take TWO of the following courses NOT used to satisfy Core Area E-1:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Elective Courses (12 credits):

Pick any FOUR of the following:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**

Total Program Hours: 18

Professional Writing Minor

After taking COMM 2000, Business Communication, **take only 12 more hours**, 9 of which must be at the 3000 or 4000 level, to receive a Minor in Professional Writing. Your minor credential will be designated on your SPSU transcript provided you earn a C or better in each course.

Requirements

- COMM 2000 - Business Communication **3 Credits**

Additional Courses Choose Four of the Following (12 credits)

Students majoring in Business Administration are required to take COMM 2000 as part of their existing program of study. TCOM 2010 will serve as a blanket substitution for COMM 2000 for Business Administration students interested in Professional Writing minor.

This minor is not available to students majoring in either Technical Communication or English and Professional Communication.

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**

- COMM 3050 - Journalism **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3020 - Proposal Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

Total Hours: 15

Psychology Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- PSYC 1101 - Introduction to General Psychology **3 Credits**
  (If PSYC 1101 has been used for Core Area E-3, any 2000-Level PSYC course may be substituted in the minor)
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
  AND **6 Credits** in any PSYC 3000- or 4000- level courses

18 Credits

Public Policy Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses (6 credits):

- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

Electives (9 credits):

Choose THREE of the following:

- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**

Special Topics

Special Topics in POLS, STS, or IS may also be used as electives with topic-specific approval of the department.

Total Program Hours: 15

Quality Principles Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

Renewable Energy Engineering Technology Minor

Renewable Energy Engineering Technology Minor

Required Course

- REET 3550 - Introduction to Alternate Energy **4 Credits**

Plus four additional courses from the following:

- REET 2020 - Engery Conversion **4 Credits**
- REET 3030 - Energy Storage Systems **3 Credits**
- REET 4100 - Solar Photovoltaics **3 Credits**
- REET 4110 - Solar Thermal Systems **3 Credits**
- REET 4200 - Wind Power Generation **3 Credits**
- REET 4210 - Oceanic and Hydropower Generation **3 Credits**
- REET 4500 - Environmental Aspects of Power Generation **3 Credits**
- REET 4510 - Sustainable Transportation Systems **3 Credits**

Minor Program Total: 16-17

Note:

An overall GPA of 2.0 is required in the courses for the Renewable Energy Engineering Technology (REET) Minor.

Software Engineering Minor

To be eligible for a minor in Software Engineering, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level SWE hours.

Program Objectives

Students earning a minor in Software Engineering will:

- Possess broad foundations in software engineering concepts and methodologies so they may contribute to the effective design and implementation of large scale software.

Learning Outcomes

Students earning a Software Engineering minor will have demonstrated the ability to:

- Apply SWE practices and process to software design and development.

- Demonstrate the ability to gather, analyze, develop, verify and/or validate artifacts of software engineering systems.
- Use software tools effectively in some phases of software development.

Minor Requirements

- CSE 1302 - Programming & Problem Solving II **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- Three additional upper-level SWE courses **9 Credits**

Note:

SWE 1302 has a pre-requisite of SWE 1301 .

Total Hours: 16 hours

Spanish Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

2000-Level (6 credits):

 May not also be used to satisfy Core Area C-2:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

3000-Level (9 credits):

 Any 9 credits in 3000-level SPAN courses.

Total Program Hours: 15

Consider the Certificate in Professional Spanish as well:

Requirements for Professional Certificate

Technical Communication Minor

After taking TCOM 2010 Technical Writing, you will take **only 12 more hours,** 9 of which must be at the 3000 or 4000 level. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

Requirements (6 credits)

- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
  OR
- TCOM 2030 - Research in Technical Communication **3 Credits**

  Students whose major already requires TCOM 2010 should take TCOM 2020 **and** TCOM 2030 (blanket substitution will apply).

Additional Courses for Minor (9 credits)

Choose any class with the TCOM course prefix, 3000-level or higher.

This minor is not available to students majoring in either Technical Communication or English and Professional Communication.

Total Hours: 15

Transfer Program

General Studies, A.S.

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

All students must take:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the University core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

Choose ONE Literature Course:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Choose ONE Arts or Language Course:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**

- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

8 hours science (two courses with labs):

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Math:

- MATH 1113 - Pre-calculus **4 Credits**

(or other math as specified in the University core)

Area E: Social Sciences (12 credits)

Group 1 Amerian Perspectives- (3 credits):

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:
- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Group 2 Historical Perspectives (3 credits):

Choose ONE of the following:
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

Group 3 Behavioral Science Perspectives (3 credits):

Choose ONE of the following:
- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

Group 4 Global Perspectives (3 credits):

Satisfies the Global Perspectives overlay.

Choose ONE of the following:
- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Elective Courses:

- At least one additional course in humanities (Area C) **3 Credits**
- At least one additional course in social sciences (Area E) **3 Credits**
- Any humanities, social science, math, lab science or any area F course from any program. **11-12 Credits**

Total Program Hours: 60

Certification

Apparel Product Development Certificate

The Fashion Design and Product Development program offers a Certificate in Apparel Product Development. The objective is to provide training and education to members of the apparel industry, graduates of fashion and design schools and other interested parties seeking to improve their skills. The courses may also be applied toward completing the Bachelor of Apparel and Textiles degree. All requirements for normal admissions are applicable. Certificate students must complete five courses from the following list:

Requirements

Certificate students must complete five classes from the following list:

- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Certificate Program Total: 15

Geographical Information Systems Certificate

The Geographical Information Systems (GIS) Certificate program is designed to prepare students with a practical set of GIS marketable skills who have a background in GIS applications such as surveying, real estate, marketing, geography or business background. There are five courses required in the certificate program.

Required Courses (19 Credits)

- SURV 2110 - Introduction to Mapping **4 Credits**
  OR
- SURV 2221 - Surveying I **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**
- SURV 4110 - Geographical Information Systems (GIS) Practice **3 Credits**

Certificate Program Total: 19

Land Development Certificate

The Certificate in Land Development provides training and education to members of the real estate and land development field in construction and land development principles and practices. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Construction Management upon acceptance to SPSU.

Prerequisites must be met prior to enrollment in certain certificate courses.

Required Courses:

- CM 3310 - Introduction to Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**

Subtotal: 14 Credits

*may substitute courses from electives list if competency can be demonstrated

Elective Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Subtotal: 7 Credits (minimum)

Certificate Program Total: 21 Credits (minimum)

Land Surveying Certificate

The Land Surveying Certificate program is designed to prepare surveyors with the basic education necessary to take the Fundamentals of Land Surveying Exam and exceeds the State of Georgia academic registration requirements to become a Registered Land Surveyor. There are six courses required in the certificate program.

Required Courses (21 Credits)

- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**

Certificate Program Total: 21

Logistics Certificate

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

Admission Requirements:

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

Production Design Certificate

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 20

Project Management Construction Certificate

The professional Certificate in Project management is designed for working professionals who wish to further their knowledge in Construction Project Management. The certificate will also be useful for those individuals who wish to make a career change to the construction industry, or to those people who find themselves in the construction industry without first gaining a background in construction.

Prerequisites must be met prior to enrollment in certain certificate courses.

Required Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**

- CM 3110 - Residential and Light Construction Methods **3 Credits** OR
- CM 3160 - Construction Equipment **3 Credits**

- CM 4560 - Construction Project Management **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

Subtotal: 11-12 Credits

Elective Courses:

- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**

Subtotal: 9+ Credits

Certificate Program Total: 20+ Credits

Quality Principles Certificate

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3–4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

Spanish Professional Certificate (Undergraduate)

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

All Courses Required for the Spanish Minor

Requirements for Spanish Minor

4000-Level Electives (6 credits):

Chose SIX credits from the following:

- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**

Learning Project (3 credits):

- SPAN 4003 - Service Learning Project **3 Credits**

Oral Proficiency Interview (OPI):

After all coursework is completed, student must take the American Council on the Teaching of Foreign Language OPI.

Total Program Hours: 9 credits beyond the minor

Course Descriptions

Accounting

ACCT 2101 - Principles of Financial Accounting

ACCT 2102 - Principles of Managerial Accounting

ACCT 3230 - Intermediate Accounting I

ACCT 3231 - Intermediate Accounting II

ACCT 3530 - Cost Accounting

ACCT 4530 - Advanced Accounting

ACCT 4535 - Accounting Information Systems

ACCT 4555 - Auditing and Assurance

ACCT 4560 - Intro to Federal Income Taxes

ACCT 4562 - Federal Taxation II

ACCT 4565 - Fraud Examination

ACCT 4568 - Accounting Software Applications

Anthropology

ANTH 1102 - Introduction to Anthropology

Apparel and Textile Technology

ATT 1000 - Orientation

ATT 1200 - Apparel Design Graphics

ATT 1300 - International Sourcing

ATT 1400 - Principles of Merchandising

ATT 2301 - Apparel Computer-Aided Technical Design I

ATT 3100 - Fashion Merchandising

ATT 3505 - Fabric Formation and Design

ATT 3600 - Apparel Analysis and Product Development

ATT 3602 - Apparel Computer-Aided Technical Design II

ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends

ATT 4444 - Quality Assurance for Textiles and Apparel

ATT 4670 - Apparel/Textile Business Practices

ATT 4750 - Advanced Design and Product Development

ATT 4820 - Senior Internship

ATT 4840 - Textile/Apparel Business Project

Architecture

ARCH 39X1 - Special Topics

ARCH 39X2 - Special Topics

ARCH 39X3 - Special Topics

ARCH 39X4 - Special Topics

ARCH 49X1 - Directed Study

ARCH 49X2 - Directed Study

ARCH 49X3 - Directed Study

ARCH 49X4 - Directed Study

ARCH 1000 - Orientation to Architecture

ARCH 1001 - Design Foundation I

ARCH 1002 - Design Foundation II

ARCH 1241 - Design Communication I

ARCH 2003 - Design Foundation III

ARCH 2004 - Design Foundation IV

ARCH 2111 - Architecture Culture I: Early Civilizations & Medieval

ARCH 2112 - Architecture Culture II - The Renaissance through 1850

ARCH 2211 - Architecture Structures I - Introduction to Structures

ARCH 2242 - Design Communication II

ARCH 2311 - Environmental Tech I - Systems Selection and Materials

ARCH 3011 - Architecture Studio V

ARCH 3012 - Architecture Studio VI

ARCH 3113 - Architecture Culture III - 1850 through 1945

ARCH 3116 - Urban Planning and Design Theory

ARCH 3211 - Architecture Structures II: Steel and Wood

ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads

ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems:

ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation:

ARCH 4013 - Architecture Studio VII

ARCH 4014 - Architecture Studio VIII

ARCH 4114 - Architecture Cultures IV: 1945-Current

ARCH 4224 - Professional Practice I - Codes and Technical Documents

ARCH 5412 - Professional Practice II - Cost Control

ARCH 5413 - Professional Practice III - Practice and Ethics

ARCH 5593 - Thesis Prep

ARCH 5998F - Focus Studio

ARCH 5999R - Thesis Research S/U

ARCH 5999T - Thesis Studio

Arts

ARTS 2001 - Art Appreciation

ARTS 2002 - Drama Appreciation

ARTS 2003 - Music Appreciation

ARTS 2004 - History of Contemporary American Music

ARTS 2005 - University Bands

ARTS 2010 - Introduction to Drawing

ARTS 2020 - History and Principles of Design

ARTS 2110 - Painting and Mixed Media

ARTS 2220 - 2D and 3D Design

ARTS 2903 - Music Theory

ARTS 3000 - Visual Thinking

ARTS 3010 - Drawing for New Media

ARTS 3100 - History of New Media Arts

ARTS 3170 - Digital Photography

ARTS 4100 - Media Arts Studio

ARTS 4270 - Advanced Digital Video

ARTS 4600 - Directed Study

ARTS 4700 - Internship

ARTS 4800 - Senior Portfolio

ARTS 4903 - Special Topics

Astronomy

ASTR 1000K - Introduction to the Universe

ASTR 1010K - Introduction to the Universe II

Biochemistry

BIOC 3111K - Biochemistry I

BIOC 3112K - Biochemistry II

BIOC 3115K - Physical Biochemistry

BIOC 3901 - Special Topics

BIOC 3902 - Special Topics

BIOC 3903 - Special Topics

BIOC 3904 - Special Topics

BIOC 3905 - Special Topics

BIOC 4200 - Medicinal Chemistry and Drug Discovery

BIOC 4901 - Special Topics

BIOC 4902 - Special Topics

BIOC 4903 - Special Topics

BIOC 4904 - Special Topics

BIOC 4905 - Special Topics

Biology

BIOL 2050 - Fundamentals of Human Anatomy & Physiology I

BIOL 2050L - Fundamentals of Human Anatomy & Physiology Lab

BIOL 2051 - Fundamentals of Human Anatomy & Physiology II

BIOL 2051L - Fundamentals of Human Anatomy & Physiology II Lab

BIOL 2099 - Biology Teaching Assistant

BIOL 2107 - Principles of Biology I

BIOL 2107L - Principles of Biology I Laboratory

BIOL 2108 - Principles of Biology II

BIOL 2108L - Principles of Biology II Laboratory

BIOL 2500K - Bioinformatics I - Tools & Databases

BIOL 2800 - Drug Development and Regulation

BIOL 3000K - Genetics

BIOL 3100K - Microbiology

BIOL 3200K - Applied Molecular Biology Laboratory

BIOL 3201 - Biophysics I

BIOL 3202 - Biophysics II

BIOL 3250K - Ecosystem Ecology

BIOL 3300K - Ecology

BIOL 3310K - Molecular Biology

BIOL 3400K - Cell Physiology

BIOL 3500 - Biostatistics

BIOL 3600 - Freshwater Biology

BIOL 3650 - Marine Biology

BIOL 3700K - Ichthyology

BIOL 4100K - Entomology

BIOL 4110 - Parasitology

BIOL 4200K - Zoology

BIOL 4300 - Virology

BIOL 4350K - Cell and Tissue Culture

BIOL 4400K - Human Physiology

BIOL 4410 - Immunology

BIOL 4420K - Advanced Immunology

BIOL 4430K - Animal Physiology

BIOL 4440K - Botany

BIOL 4460K - Human Anatomy

BIOL 4470 - Plant Physiology

BIOL 4480 - Evolution

BIOL 4510K - Bioinformatics II

BIOL 4550 - Cancer Biology

BIOL 4600K - Biotechnology

BIOL 4700 - Internship

BIOL 4901 - Special Topics

BIOL 4902 - Special Topics

BIOL 4903 - Special Topics

BIOL 4904 - Special Topics

Business, Marketing and Finance

MGNT 390x - Special Topics

MGNT 490x - Special Topics

MGNT 1000 - Orientation to Business

MGNT 2201 - Business Computer Applications

MGNT 3105 - Management and Organizational Behavior

MGNT 3120 - Entrepreneurial Finance

MGNT 3125 - Business Finance

MGNT 3135 - Principles of Marketing

MGNT 3145 - Legal Environment of Business

MGNT 3170 - Leadership

MGNT 3205 - Management Information Systems

MGNT 3210 - Professional Selling and Customer Relationship Management

MGNT 3224 - Business Marketing

MGNT 3228 - Market Research

MGNT 3231 - Management of Financial Institutions

MGNT 3500 - Database Management

MGNT 4075 - Healthcare Management

MGNT 4100 - Business Systems Analysis and Design

MGNT 4103 - Marketing Management

MGNT 4115 - Human Resource Management

MGNT 4125 - Technology and Public Issues

MGNT 4135 - Project Management

MGNT 4140 - Management of Networks and Telecommunications

MGNT 4145 - International Management

MGNT 4151 - Operations Management

MGNT 4185 - Technology Management

MGNT 4190 - Entrepreneurship

MGNT 4195 - Current Readings in Management of Technology and Operations

MGNT 4232 - Financial Planning and Capital Budgeting

MGNT 4233 - Investment Analysis and Portfolio Management

MGNT 4234 - International Finance

MGNT 4545 - Legal Environment of Business II

MGNT 4595 - Business Strategy

Chemistry

CHEM 1211 - Principles of Chemistry I

CHEM 1211K - Principles of Chemistry (ECORE)

CHEM 1211L - Principles of Chemistry I Lab

CHEM 1212 - Principles of Chemistry II

CHEM 1212K - Principles of Chemistry II (ECORE)

CHEM 1212L - Principles of Chemistry II Lab

CHEM 2510 - Survey of Organic Chemistry

CHEM 2511K - Organic Chemistry I

CHEM 2512K - Organic Chemistry II

CHEM 2601 - Chemical Literature

CHEM 3100K - Analytical Chemistry

CHEM 3150K - Environmental Chemistry

CHEM 3200K - Atmospheric Chemistry

CHEM 3300K - Instrumental Analysis

CHEM 3901 - Special Topics

CHEM 3902 - Special Topics

CHEM 3903 - Special Topics

CHEM 3904 - Special Topics

CHEM 3905 - Special Topics

CHEM 4111K - Physical Chemistry I

CHEM 4112 - Physical Chemistry II

CHEM 4112L - Physical Chemistry II Lab

CHEM 4121 - Quantum Chemistry

CHEM 4411 - Inorganic Chemistry

CHEM 4412 - Main Group Inorganic Chemistry

CHEM 4413 - Transition Metal Chemistry

CHEM 4415 - Solid State Chemistry

CHEM 4511 - Advanced Organic Chemistry

CHEM 4901 - Special Topics

CHEM 4902 - Special Topics

CHEM 4903 - Special Topics

CHEM 4904 - Special Topics

CHEM 4905 - Special Topics

Civil and Construction Engineering

CE 1000 - Orientation to Engineering and Surveying Professions

CE 3201 - Structural Analysis

CE 3202 - Design of Concrete Structures

CE 3501 - Materials for Civil & Construction Engineering

CE 3502 - Materials for Civil & Construction Engineering Lab

CE 3701 - Geotechnical Engineering

CE 3702 - Environmental Engineering

CE 3703 - Environmental Engineering II

CE 3704 - Environmental Engineering Lab I

CE 3708 - Geotechnical Engineering Lab

CE 3901 - Special Topics

CE 3902 - Special Topics

CE 3903 - Special Topics

CE 4103 - Design of Steel Structures

CE 4105 - Foundation Design

CE 4177 - Transportation Engineering

CE 4178 - Highway Design and Construction

CE 4179 - Transportation Engineering Lab

CE 4202 - Steel and Concrete Design

CE 4343 - Solid Waste Management and Engineering

CE 4703 - Engineering Hydrology

CE 4704 - Engineering Hydraulic Analysis and Design

CE 4705 - Advanced Soil Mechanics

CE 4706 - Pavement Engineering

CE 4707 - Design of Wood Structures

CE 4708 - Hazardous Waste Engineering

CE 4709 - Advanced Structural Analysis

CE 4800 - Senior Project

CE 4901 - Special Topics

CE 4902 - Special Topics

CE 4903 - Special Topics

Civil Engineering Technology

CET 1001 - Orientation to the Civil ET, Environmental ET, and Geospatial Professions

CET 2110 - Problem Solving Methods in CET

CET 2200 - Introduction to Structures

CET 3110 - Construction Materials and Sustainability

CET 3110L - Construction Materials Lab

CET 3120 - Cost Estimating and Scheduling in CET

CET 3120L - Plan Reading and Take Offs Lab

CET 3130 - Applied Fluid Mechanics and Hydraulics

CET 3130L - Fluids and Hydraulics Lab

CET 3210 - Structural Mechanics

CET 3220 - Applied Structural Steel Design

CET 3230 - Concrete Infrastructure Design

CET 3310 - Water Treatment and Distribution

CET 3310L - Water Treatment and Distribution Lab

CET 3320 - Wastewater Collection and Treatment

CET 3320L - Wastewater Collection and Treatment Lab

CET 3410 - Soil Properties and Site Exploration

CET 3410L - Soil Properties Lab

CET 3420 - Geosynthetics

CET 3430L - Site Exploration and Field Testing Lab

CET 3510 - Traffic Analysis and Road Design

CET 3510L - Traffic Analysis and Road Design Lab

CET 3901 - Special Topics

CET 3902 - Special Topics

CET 3903 - Special Topics

CET 3904 - Special Topics

CET 4110 - Ethics of Engineering

CET 4120 - Senior Design and Engineering Documentation

CET 4130 - Special Inspections

CET 4210 - Computer Methods in Structures

CET 4220 - LFRD Steel Design

CET 4230 - Advanced Concrete Design

CET 4240L - Structural Detailing Lab

CET 4310 - Stormwater Management and Erosion Control

CET 4310L - Erosion Control Lab

CET 4320 - Unit Operations in Environmental Engineering

CET 4330 - Solid Waste Management

CET 4331 - Highway Design

CET 4340 - Air Pollution Control

CET 4410 - Foundation and Retaining Wall Design

CET 4411 - FE Exam Preparation - Civil Discipline

CET 4420 - Earth Dam and Levee Design

CET 4430 - Slope Stability

CET 4510 - Transportation Network Design

Communication

COMM 1000 - Integrated Skills for International Students

COMM 1050 - Holistic Communication for Non-Native Speakers of English

COMM 1100 - Human Communications

COMM 2000 - Business Communication

COMM 2030 - Research for the Humanities & Social Sciences

COMM 2065 - Cross-Cultural Communication

COMM 2150 - Ethics and Communication

COMM 2170 - Introduction to Media Studies

COMM 2400 - Public Speaking

COMM 2500 - Advanced Public Speaking

COMM 2510 - Intercollegiate Forensics

COMM 3000 - Oral Communication for International Students

COMM 3035 - Organizational Communication

COMM 3040 - Health Communication

COMM 3050 - Journalism

COMM 3060 - Media, Culture, and Society

COMM 3065 - International Communication

COMM 3100 - Rhetoric: History, Theory, and Practice

COMM 3150 - Public Relations Practice

COMM 3160 - Media Theory and Practice

COMM 3250 - Newspaper Practicum

COMM 4200 - New Media Leadership Strategies

COMM 4600 - Directed Study

Computer Game Design and Development

CGDD 490x - Special Topics in Game Design and Development

CGDD 2002 - Fundamentals of Game Design

CGDD 3103 - Application Extension and Scripting

CGDD 4003 - Digital Media and Interaction

CGDD 4113 - 3D Modeling and Animation

CGDD 4203 - Mobile and Casual Game Development

CGDD 4303 - Educational and Serious Game Design

CGDD 4313 - Designing Online Learning Content and Environments

CGDD 4603 - Production Pipeline and Asset Management

CGDD 4703 - Data Modeling and Simulation

CGDD 4803 - Studio

CGDD 4814 - Capstone

Computer Science

CS 3123 - Programming Language Concepts

CS 3224 - Computer Organization & Architecture

CS 3243 - Operating Systems

CS 3424 - Data Structures

CS 3693 - Applications Programming

CS 3901 - Special Topics

CS 3902 - Special Topics

CS 3903 - Special Topics

CS 3904 - Special Topics

CS 4243 - Systems Programming

CS 4253 - Distributed Computing

CS 4263 - Computer Networks

CS 4283 - Real-Time Systems

CS 4363 - Computer Graphics and Multimedia

CS 4413 - Algorithm Analysis

CS 4523 - Artificial Intelligence

CS 4533 - Digital Image Processing

CS 4893 - Computer Science Capstone

CS 4901 - Special Topics

CS 4902 - Special Topics

CS 4903 - Special Topics

CS 4904 - Special Topics

Computing and Software Engineering

CSE 1002 - Introduction to the Computing Disciplines

CSE 1301C - Programming & Problem Solving I

CSE 1301E - C++ Programming for Engineers

CSE 1301J - Programming & Problem Solving I

CSE 1302C - Programming & Problem Solving II

CSE 1302E - Object Oriented C++ Programming for Engineers

CSE 1302J - Programming & Problem Solving II

CSE 2300 - Discrete Structures for Computing

CSE 3153 - Database Systems

CSE 3203 - Overview of Mobile Systems

CSE 3642 - Professional Practices and Ethics

CSE 4983 - CSE Computing Internship

Construction Management

CM 1000 - Orientation to Construction and Development

CM 2000 - Construction Graphics

CM 2901 - Special Topics

CM 2902 - Special Topics

CM 2903 - Special Topics

CM 2904 - Special Topics

CM 3000 - Computer Applications in Construction

CM 3040 - Building Information Modeling Applications I

CM 3110 - Residential and Light Construction Methods

CM 3160 - Construction Equipment

CM 3170 - Heavy Construction Practices

CM 3180 - Mechanical and Electrical Building Systems

CM 3190 - Sustainable Construction

CM 3210 - Applied Structures

CM 3230 - Heavy Materials & Temporary Structures

CM 3260 - Temporary Structures

CM 3270 - Strategic Facilities Management

CM 3280 - Building Mechanical and Electrical Codes and Loads

CM 3290 - Facilities Management

CM 3310 - Introduction to Development

CM 3410 - Construction Quantity Surveying

CM 3411 - Construction Estimating Software

CM 3420 - Construction Estimating and Bid Preparation

CM 3430 - Construction Estimating for Development

CM 3440 - Heavy Estimating

CM 3480 - Mechanical and Electrical Systems Estimating

CM 3500 - Building Codes

CM 3620 - Construction Finance and Feasibility

CM 3710 - Site Planning

CM 3800 - Construction Seminar

CM 3810 - Advanced Construction Practice

CM 3901 - Special Topics

CM 3902 - Special Topics

CM 3903 - Special Topics

CM 3904 - Special Topics

CM 3912 - Workplace Law

CM 4190 - Sustainable Operation & Maintenance

CM 4230 - Soils & Earthmoving

CM 4480 - Design/Build MEP Systems

CM 4510 - Construction Scheduling

CM 4511 - Construction Scheduling Software

CM 4560 - Construction Project Management

CM 4570 - Development Process I

CM 4620 - Development Process II

CM 4639 - Construction Safety & Law

CM 4710 - Construction Safety

CM 4760 - Construction and Real Estate Property Law

CM 4800 - Construction Management Technique

CM 4900 - Capstone Project

Economics

ECON 1101 - Introduction to Economics

ECON 2105 - Principles of Macroeconomics

ECON 2106 - Principles of Microeconomics

ECON 2107 - Introduction to Economic Analysis

Education

EDUC 1101 - UTeach Step 1

EDUC 1102 - UTeach Step 2

EDUC 1103 - UTeach Integrated Steps 1 and 2

EDUC 2010 - Knowing and Learning

EDUC 2020 - Classroom Interactions

EDUC 4030 - Project Based Instruction

EDUC 4401 - Apprentice Teaching Seminar

EDUC 4406 - Apprentice Teaching

MAED 2010 - Functions and Modeling

RSCH 3610 - Research Methods

Electrical and Computer Engineering Technology

ECET 1001 - Orientation

ECET 1012 - Design Fundamentals

ECET 1101 - Circuits I

ECET 1200 - Digital I

ECET 2000 - Introduction to Biomedical Engineering Technology

ECET 2111 - Circuits II

ECET 2210 - Digital II

ECET 2300 - Electronics I

ECET 2310 - Electronics II

ECET 2800 - Introduction to Telecommunications

ECET 3000 - Electrical Principles

ECET 3010 - Health Care Safety

ECET 3020 - Biomedical Instrumentation

ECET 3030 - Biomechanics

ECET 3220 - Digital III

ECET 3400 - Data Communications

ECET 3410 - High Frequency Systems

ECET 3500 - Survey of Electric Machines

ECET 3600 - Test Engineering

ECET 3620 - Signals and Systems Analysis

ECET 3640 - Introduction to Systems Engineering and Robotics

ECET 3701 - Embedded PCs

ECET 3710 - Hardware Programming and Interfacing

ECET 3810 - Applications of C++, JAVA and HTML

ECET 3901 - Special Topics

ECET 3902 - Special Topics

ECET 3903 - Special Topics

ECET 3904 - Special Topics

ECET 4010 - Virtual Biomedical Instrumentation

ECET 4020 - Biomedical Imaging

ECET 4030 - Bioinformatics and Telemedicine

ECET 4040 - Biometrics

ECET 4050 - BMET Capstone

ECET 4320 - Active Filters

ECET 4330 - Audio Technology

ECET 4420 - Communications Circuit Applications

ECET 4431 - Wireless Communications Systems

ECET 4432 - Fiber-optic Communications Systems

ECET 4450 - RF Electronics

ECET 4510 - Power System Analysis

ECET 4515 - Power Distribution Systems

ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC

ECET 4530 - Industrial Motor Control

ECET 4540 - Introduction to Power Electronics

ECET 4560 - Electric Drives

ECET 4610 - Control Systems

ECET 4630 - Digital Signal Processing

ECET 4710 - Network Programming and Interfacing

ECET 4720 - Distributed Microcontrollers and PCs

ECET 4730 - VHDL and Field Programmable Gate Arrays

ECET 4820 - Communications Networks and the Internet

ECET 4830 - Telecommunications Management

ECET 4840 - Advanced Telecommunications

ECET 4850 - Telecommunications Project

ECET 4860 - Network Security

ECET 4901 - Special Topics

ECET 4902 - Special Topics

ECET 4903 - Special Topics

ECET 4904 - Special Topics

Electrical Engineering

EE 1000 - Foundations of Electrical Engineering

EE 2301 - Circuit Analysis I

EE 2302 - Circuit Analysis II

EE 2401 - Semiconductor Devices

EE 2501 - Digital Logic Design

EE 3401 - Engineering Electronics

EE 3405 - Electronic Materials

EE 3501 - Embedded Systems

EE 3601 - Electric Machines

EE 3605 - Electromagnetics

EE 3701 - Signals and Systems

EE 3702 - Communication Systems

EE 4201 - Control Systems

EE 4405 - Fundamentals of Solar Power and Renewable Energy

EE 4701 - Professional Practice

EE 4800 - Senior Project

Electronic Technology eCore

ETEC 1101 - Electronic Technology in the Educational Environment

Engineering

ENGR 2214 - Engineering Mechanics – Statics

ENGR 2710 - Engineering Calculations

ENGR 3122 - Dynamics

ENGR 3125 - Machine Dynamics & Vibrations

ENGR 3131 - Strength of Materials

ENGR 3132 - Strength of Materials Lab

ENGR 3305 - Data Collection and Analysis in Engineering

ENGR 3324 - Project Cost Analysis

ENGR 3343 - Fluid Mechanics

ENGR 3345 - Fluid Mechanics Laboratory

ENGR 4402 - Engineering Ethics

Engineering Design Graphics

EDG 1210 - Survey of Engineering Graphics

EDG 1211 - Engineering Graphics I

EDG 1212 - Engineering Graphics II

EDG 2160 - Civil Graphics and Computer Aided Drafting

EDG 3112 - Advanced Engineering Graphics

EDG 4111 - Surface Modeling

EDG 4222 - CAD Customization and Standards

EDG 4224 - Engineering Design Graphics for Custom Manufacturing

Engineering Technology

ENGT 2124 - Statics with Applications

ENGT 3124 - Strength of Materials with Applications

ENGT 3124L - Strength of Materials Lab

English

ENGL 1000 - Writing Skills for International Students

ENGL 1101 - English Composition I

ENGL 1102 - English Composition II

ENGL 2030 - Research in Professional and Critical Writing

ENGL 2111 - Early World Literature

ENGL 2112 - World Literature Mid-1600s to Present

ENGL 2120 - British Literature Early to Present

ENGL 2121 - Early British Literature

ENGL 2122 - British Literature Late 1700s to Present

ENGL 2130 - American Literature Early to Present

ENGL 2131 - Early American Literature

ENGL 2132 - American Literature Mid 1800s to Present

ENGL 2141 - Early Western Literature

ENGL 2142 - Western Literature 1600s to Present

ENGL 2300 - African-American Literature and Culture

ENGL 2500 - Language and Meaning

ENGL 3001 - Written Communication for International Students

ENGL 3010 - Science Writing

ENGL 3015 - Environmental Writing

ENGL 3020 - Proposal Writing

ENGL 3025 - Creative Writing Workshop

ENGL 3030 - English Grammar for Professional Writing

ENGL 3035 - Problems in Language

ENGL 3040 - Article and Essay Workshop

ENGL 3045 - New Media Writing

ENGL 3050 - Journalism

ENGL 3100 - Rhetoric: History, Theory, and Practice

ENGL 3180 - Film as Literature

ENGL 4010 - Publishing for New Media

ENGL 4110 - Writing in Collaborative Environments

ENGL 4170 - Media and Narrative

ENGL 4800 - Project Portfolio

ENGL 4901 - Special Topics

ENGL 4902 - Special Topics

ENGL 4903 - Special Topics

Environmental Science

ENVS 2200K - Geology

ENVS 2202 - Environmental Science (ECORE)

ENVS 2202K - Introduction to Environmental Science

ENVS 3000 - Environmental Science Seminar

ENVS 3100K - Soil & Water Science

ENVS 3150K - Environmental Toxicology

ENVS 3250 - Natural Resource Management

ENVS 3350 - Oceanography

ENVS 3450 - Conservation Biology

ENVS 4000K - Wetlands and Mitigation

ENVS 4120 - Senior Project

ENVS 4300 - Environmental Ethics

ENVS 4500 - Environmental Science Internship

ENVS 4901 - Special Topics in Environmental Science

ENVS 4902 - Special Topics in Environmental Science

ENVS 4903 - Special Topics in Environmental Science

ENVS 4904 - Special Topics in Environmental Science

Ethnic Studies

ES 1100 - Ethnic Studies

ES 2100 - Ethnic Literature and Cultures

French

FREN 1001 - Elementary French I

FREN 1002 - Elementary French II

FREN 2001 - Intermediate French I

FREN 2002 - Intermediate French II

Geography

GEOG 1101 - Introduction to Human Geography

GEOG 3101 - World Regional Geography

GEOG 4101 - Geographic Information Systems

Geosciences eCore

GEOL 1101K - Introduction to Geosciences

German

GRMN 1001 - Elementary German I

GRMN 1002 - Elementary German II

GRMN 2001 - Intermediate German I

GRMN 2002 - Intermediate German II

History

HIST 1111 - Survey of World Civilization pre 1500

HIST 1112 - Survey of World Civilization post 1500

HIST 2111 - United States History to 1877

HIST 2112 - United States History since 1877

HIST 2903 - Special Topics in History

HIST 2911 - U.S. and Georgia Constitution and History

HIST 3200 - History of Science Survey

HIST 3250 - History of American Technology

HIST 3260 - History of American Science and Medicine

HIST 3301 - Diplomatic and Military History since 1815

HIST 3401 - Modern Social and Cultural History Twentieth Century

HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World

HIST 3601 - History of the Pacific Rim

HIST 3801 - Contemporary World History since 1945

HIST 3901 - Special Topics

HIST 3902 - Special Topics

HIST 3903 - Special Topics in History

HIST 4901 - Special Topics in the History of Science and Technology

HIST 4902 - Special Topics in the History of Science and Technology

HIST 4903 - Special Topics in History

Honors

HNRS 2001 - Introduction to Honors Research

HNRS 3002 - Honors Research

HNRS 3102 - Honors Peer Mentoring

HNRS 3203 - Honors Teaching Assistance

HNRS 3301 - Honors Interdisciplinary Seminar

HNRS 4400 - Honors Thesis

Industrial Engineering Technology

IET 1000 - Orientation

IET 2227 - Introduction to Statistics

IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems

IET 2449 - Logistics and Supply Chain Management

IET 3320 - Advanced Logistics

IET 3322 - Work Measurement and Ergonomics

IET 3339 - Statistical Quality Control

IET 3356 - Quality Concepts and Systems Design

IET 3403 - Advanced Statistics with Application

IET 3407 - Six Sigma and Lean Manufacturing

IET 3410 - Principles of Team Dynamics

IET 3424 - Engineering Economy

IET 3433 - Product and Process Costing

IET 3501 - Service Systems Engineering

IET 3511 - Sustainability Engineering

IET 3620 - Warehousing Systems

IET 4111 - Design of Experiments

IET 4121 - Advanced Topics in Quality Assurance

IET 4354 - Principles of Transportation

IET 4375 - Engineering Sales Law

IET 4405 - Operations Research - Concepts, Models and Methods

IET 4422 - Facilities Design, Plant Layout, and Materials Handling

IET 4427 - Methods-Time-Measurement

IET 4435 - Fundamentals of Engineering Sales

IET 4447 - Industrial Sales Development & Control

IET 4451 - Systems Simulation

IET 4460 - Warehouse Operations

IET 4475 - Senior Project

IET 4478 - Senior Internship

IET 4500 - Technical Sciences Survey

IET 4555 - Auditing and Assurance

IET 4810 - Ethics and Safety

IET 4901 - Special Topics

IET 4902 - Special Topics

IET 4903 - Special Topics

IET 4904 - Special Topics

IET 4905 - Special Topics

Information Technology

IT 1113 - Programming Principles

IT 1324 - Advanced Programming Principles

IT 3123 - Hardware/Software Concepts

IT 3203 - Introduction to Web Development

IT 3223 - Software Acquisition and Project Management

IT 3423 - Operating Systems Concepts & Administration

IT 3503 - Foundations of Health Information Technology

IT 3653 - Client Server System Administration

IT 3883 - Advanced Applications Development

IT 4123 - Electronic Commerce

IT 4153 - Advanced Database

IT 4203 - Advanced Web Development

IT 4213 - Mobile Web Development

IT 4323 - Data Communications & Networks

IT 4333 - Network Configuration & Administration

IT 4423 - Unix/Linux

IT 4513 - Electronic Health Record Systems

IT 4523 - Clinical Processes and Workflows: Analysis and Redesign

IT 4533 - Health Information Security and Privacy

IT 4673 - Virtual IT Systems

IT 4683 - Management of Information Technology and Human Computer Interaction

IT 4713 - Business Intelligence Systems

IT 4723 - IT Policy and Law

IT 4823 - Information Security Administration & Privacy

IT 4833 - Wireless Security

IT 4843 - Ethical Hacking for Effective Defense

IT 4853 - Computer Forensics

IT 4903 - Special Topics in Information Technology

IT 4983 - IT Capstone

Information Technology WebBSIT

WBIT 1100 - Introduction to Information Technology

WBIT 1310 - Programming and Problem Solving

WBIT 2000 - The Enterprise and IT

WBIT 2300 - Discrete Mathematics for IT

WBIT 2311 - Programming and Problem Solving II

WBIT 3010 - Technical Communication

WBIT 3110 - Systems Analysis and Design

WBIT 3111 - Information Technology Project Management

WBIT 3200 - Database Design, Development and Deployment

WBIT 3400 - Introduction to Multimedia

WBIT 3410 - Web Applications Development

WBIT 3500 - Architecture and Operating Systems

WBIT 3510 - Data Communications and Networking

WBIT 3600 - Introduction to E-Commerce

WBIT 4020 - Professional Practices and Ethics

WBIT 4030 - Senior Project

WBIT 4112 - Systems Acquisition, Integration and Implementation

WBIT 4120 - Human-Computer Interaction

WBIT 4520 - Information Security

WBIT 4601 - Customer Relationship Management

WBIT 4602 - IT Strategy Seminar

WBIT 4610 - IT Policy and Law

International Studies

IS 1000 - International Studies Orientation

IS 2903 - Special Topics in International Studies

IS 3600 - Comparative Culture

IS 4000 - Regional Studies - General

IS 4001 - Regional Studies/Latin America

IS 4002 - Regional Studies/Asia:China

IS 4003 - Regional Studies/Asia:Japan

IS 4004 - Regional Studies/Middle East

IS 4005 - Regional Studies/Russia/Eastern Europe

IS 4006 - Regional Studies/Western Europe

IS 4007 - Regional Studies/Africa

IS 4600 - International Studies Internship

IS 4800 - International Studies Capstone

IS 4903 - Special Topics in International Studies

Materials Science

MSCI 3101K - Introduction to Material Science

Mathematics

MATH 1101 - Introduction to Mathematical Modeling

MATH 1111 - College Algebra

MATH 1113 - Pre-calculus

MATH 1401 - Intro to Statistics

MATH 1501 - Calculus I

MATH 2240 - Survey of Calculus

MATH 2253 - Calculus I

MATH 2254 - Calculus II

MATH 2255 - Calculus III

MATH 2260 - Introduction to Probability and Statistics

MATH 2306 - Ordinary Differential Equations

MATH 2335 - Numerical Methods I

MATH 2345 - Discrete Mathematics

MATH 2901 - Special Topics

MATH 2902 - Special Topics

MATH 2903 - Special Topics

MATH 2904 - Special Topics

MATH 2905 - Special Topics

MATH 3261 - Statistical Methods

MATH 3268 - Probability Theory

MATH 3310 - Introduction to Advanced Mathematics

MATH 3312 - Linear Algebra

MATH 3320 - Introductory Real Analysis I

MATH 3321 - Introductory Real Analysis II

MATH 3336 - Numerical Methods II

MATH 3396 - Combinatorics

MATH 3496 - Number Theory

MATH 3596 - Topology

MATH 3696 - Geometry

MATH 3796 - Symbolic Computation

MATH 3901 - Special Topics

MATH 3902 - Special Topics

MATH 3903 - Special Topics

MATH 3904 - Special Topics

MATH 3905 - Special Topics

MATH 4406 - Differential Equations II

MATH 4407 - Vector Analysis

MATH 4417 - Functions of a Complex Variable

MATH 4440 - Abstract Algebra

MATH 4451 - Capstone Mathematics Project

MATH 4901 - Special Topics

MATH 4902 - Special Topics

MATH 4903 - Special Topics

MATH 4904 - Special Topics

MATH 4905 - Special Topics

Mechanical Engineering Technology

MET 1000 - Mechanical Engineering Technology Orientation

MET 1311 - Manufacturing Processes

MET 1321 - Machining and Welding

MET 1901 - Special Topics

MET 1902 - Special Topics

MET 1903 - Special Topics

MET 1904 - Special Topics

MET 1905 - Special Topics

MET 2322 - Metrology and CNC Machining

MET 2901 - Special Topics

MET 2902 - Special Topics

MET 2903 - Special Topics

MET 2904 - Special Topics

MET 2905 - Special Topics

MET 3101 - Fluid Mechanics Principles & Applications

MET 3123 - Dynamics of Machines

MET 3126 - Engineering Dynamics with Applications

MET 3132 - Engineering Materials

MET 3331 - Tool Design

MET 3332 - Rapid Design and Manufacture

MET 3400 - Thermodynamics and Heat Transfer

MET 3401 - Thermodynamics I

MET 3402 - Thermodynamics II

MET 3501 - Engineering Computation Using MATLab

MET 3901 - Special Topics

MET 3902 - Special Topics

MET 3903 - Special Topics

MET 3904 - Special Topics

MET 3905 - Special Topics

MET 4112 - Computer Aided Engineering & Analysis

MET 4124 - Vibrations and Advanced Dynamics

MET 4133 - Advanced Engineering Materials

MET 4141 - Machine Design I

MET 4142 - Mechanical Systems Design

MET 4341 - Automation Systems and Controls

MET 4342 - Numerical Control of Machines

MET 4351 - Manufacturing System Design Project

MET 4401 - Heat Transfer

MET 4411 - Refrigeration

MET 4412 - Air Conditioning

MET 4421 - Instruments and Controls

MET 4431 - Plant and Power Applications

MET 4801 - Special Projects

MET 4802 - Special Projects

MET 4803 - Special Projects

MET 4804 - Special Projects

MET 4805 - Special Projects

MET 4901 - Special Topics

MET 4902 - Special Topics

MET 4903 - Special Topics

MET 4904 - Special Topics

MET 4905 - Special Topics

Mechanical Engineering

ME 1001 - Introduction to Mechanical Engineering

ME 1311 - MATLAB for Engineers with Applications

ME 3101 - Materials Science and Engineering

ME 3133 - Composite Mechanics

ME 3201 - Product Realization

ME 3410 - Thermodynamics

ME 3440 - Heat Transfer

ME 3501 - Dynamic Systems & Control Theory

ME 3701 - Manufacturing Engineering

ME 3901 - ME Special Topics Course

ME 3902 - ME Special Topics Course

ME 3903 - ME Special Topics Course

ME 4141 - Machine Design I

ME 4201 - Senior Design I

ME 4202 - Senior Design II

ME 4250 - Computer Aided Engineering

ME 4403 - Heat Transfer and Thermodynamics Lab

ME 4501 - Vibrations & Controls Lab

ME 4801 - URME (Undergraduate Research in Mechanical Engineering)

ME 4802 - URME (Undergraduate Research in Mechanical Engineering)

ME 4803 - URME (Undergraduate Research in Mechanical Engineering)

ME 4804 - URME (Undergraduate Research in Mechanical Engineering)

ME 4901 - ME Special Topics Course

ME 4902 - ME Special Topics Course

ME 4903 - ME Special Topics Course

ME 4904 - ME Special Topics Course

Mechatronics Engineering

MTRE 1000 - Introduction to Mechatronics Engineering

MTRE 2610 - Engineering Algorithms and Visualization

MTRE 3710 - Mechatronics Engineering Fundamentals

MTRE 4000 - Advanced Controls

MTRE 4100 - Instruments and Controls

MTRE 4200 - Robotics Analysis and Synthesis

MTRE 4400 - Mechatronics System Design

MTRE 4903 - Special Topics in Mechatronics Engineering

Modern Foreign Languages

MFLA 190x - Special Topics

MFLA 290x - Special Topics

Philosophy eCore

PHIL 2010 - Introduction to Philosophy

Physics

PHYS 3xxx - Introduction to Scanning Electron Microscopy

PHYS 1111 - Introductory Physics I

PHYS 1111L - Introductory Physics Laboratory I

PHYS 1112 - Introductory Physics II

PHYS 1112L - Introductory Physics Laboratory II

PHYS 1211 - Principles of Physics I

PHYS 2211 - Principles of Physics I

PHYS 2211L - Principles of Physics Laboratory I

PHYS 2212 - Principles of Physics II

PHYS 2212L - Principles of Physics Laboratory II

PHYS 2213 - Introduction to Thermal and Modern Physics

PHYS 3210 - Mechanics I

PHYS 3220 - Electromagnetism I

PHYS 3230 - Optics

PHYS 3410 - Electronics Laboratory

PHYS 3500K - Introduction to Computational Physics

PHYS 3710 - Modern Physics

PHYS 3720L - Modern Physics Laboratory

PHYS 3730 - Relativity

PHYS 3901 - Special Topics

PHYS 3902 - Special Topics

PHYS 3903 - Special Topics

PHYS 3904 - Special Topics

PHYS 3905 - Special Topics

PHYS 4200 - Mechanics II

PHYS 4210 - Quantum Physics

PHYS 4230 - Thermal Physics

PHYS 4240 - Solid State Physics

PHYS 4250 - Quantum Theory of Two-State Systems

PHYS 4410K - Advanced Physics Laboratory

PHYS 4430 - Capstone Physics Project

PHYS 4901 - Special Topics

PHYS 4902 - Special Topics

PHYS 4903 - Special Topics

PHYS 4904 - Special Topics

PHYS 4905 - Special Topics

Physics eCore

PHYS 1211K - Principles of Physics I (ECORE)

Political Science

POLS 1101 - American Government

POLS 2100 - Introduction to Research Methods

POLS 2401 - Global Issues

POLS 2800 - Research Design

POLS 2903 - Special Topics in Political Science

POLS 3001 - Comparative Politics

POLS 3009 - Foundations of Public Policy

POLS 3209 - U.S. Constitutional Law

POLS 3301 - Modern Political Theory

POLS 3401 - Environmental Law and Policy

POLS 3501 - Intellectual Property Issues

POLS 3601 - Contemporary World Politics

POLS 3701 - Seminar in American Politics

POLS 3801 - Political Behavior

POLS 3903 - Special Topics in Political Science

POLS 4009 - Comparative Public Policy Analysis

POLS 4063 - Political Issues in Electronic Government

POLS 4100 - Applied Methodology

POLS 4101 - Political Economy of Post-Communist Transformation

POLS 4201 - International Relations in the Americas

POLS 4301 - International Political Economy

POLS 4801 - Capstone: Political Science Practicum

POLS 4903 - Special Topics in Political Science

Psychology

PSYC 1000 - Orientation to Psychology

PSYC 1101 - Introduction to General Psychology

PSYC 2011 - Cognitive Psychology

PSYC 2100 - Basic Quantitative Research Methods for Psychology

PSYC 2270 - Engineering Psychology

PSYC 2271 - Clinical and Counseling Psychology

PSYC 2273 - Foresic Psychology

PSYC 2401 - Psychology of Diversity

PSYC 2903 - Special Topics in Political Science

PSYC 3000 - Junior Seminar

PSYC 3010 - Educational Psychology

PSYC 3015 - Theories of Personality

PSYC 3020 - Physiological Psychology

PSYC 3031 - Experimental Psychology

PSYC 3040 - Motivation and Emotion

PSYC 3055 - Psychology Practicum

PSYC 3101 - International Social Psychology

PSYC 3230 - Abnormal Psychology

PSYC 3265 - Human Sexuality

PSYC 3301 - Psychological Testing

PSYC 3305 - Developmental Psychology

PSYC 3903 - Special Topics in Psychology

PSYC 4000 - International Psychology

PSYC 4050 - History and Systems of Psychology

PSYC 4130 - Psychology of Aging

PSYC 4220 - Psychoactive Drugs, Behavior, and Society

PSYC 4600 - Conflict Resolution

PSYC 4800 - Psychology Capstone Seminar

PSYC 4903 - Special Topics in Psychology

Religion

RELG 1200 - World Religion

Renewable Energy Engineering Technology

REET 1000 - Energy Fundamentals

REET 2020 - Engery Conversion

REET 3030 - Energy Storage Systems

REET 3550 - Introduction to Alternate Energy

REET 4040 - Senior Design Proposal

REET 4050 - Senior Design Project

REET 4100 - Solar Photovoltaics

REET 4110 - Solar Thermal Systems

REET 4200 - Wind Power Generation

REET 4210 - Oceanic and Hydropower Generation

REET 4500 - Environmental Aspects of Power Generation

REET 4510 - Sustainable Transportation Systems

Science, Technology, Society

STS 2400 - Science, Technology, and Society

STS 3347 - Perspectives on Science and Math

STS 3903 - Special Topics in Science, Technology, and Society

STS 4000 - International Issues in Science and Technology

STS 4400 - Topical Studies in Science and Technology

STS 4903 - Special Topics in Science, Technology, and Society

Sociology

SOCI 1101 - Introduction to Sociology

Software Engineering

SWE 2313 - Introduction to Software Engineering

SWE 3613 - Software System Engineering

SWE 3623 - Software Systems Requirements

SWE 3624 - Software Engineering

SWE 3633 - Software Architecture & Design

SWE 3643 - Software Testing and Quality Assurance

SWE 3683 - Embedded Systems Analysis & Design

SWE 3843 - Embedded Systems Construction and Testing

SWE 4324 - User-Centered Design

SWE 4633 - Component-Based Software Development

SWE 4663 - Software Project Management

SWE 4713 - SWE Application Domain

SWE 4724 - Software Engineering Project

SWE 4743 - Object-Oriented Development

SWE 4783 - User Interaction Engineering

SWE 4903 - Special Topics

Spanish

SPAN 1001 - Elementary Spanish I

SPAN 1002 - Elementary Spanish II

SPAN 2001 - Intermediate Spanish I

SPAN 2002 - Intermediate Spanish II

SPAN 3001 - Advanced Conversation

SPAN 3002 - Grammar and Composition

SPAN 3003 - Hispanic Cultures and Civilizations

SPAN 3903 - Special Topics in Spanish

SPAN 4001 - Professional Spanish

SPAN 4002 - Techniques in Translation for Professional Spanish

SPAN 4003 - Service Learning Project

SPAN 4903 - Special Topics for Professional Spanish

Structural Engineering Technology

SET 3240 - Hydraulic Structures

SET 3250 - Structural Loads and Connections

SET 3260 - Masonry and Timber Design

SET 4240 - Structural Rehabilitation

SET 4250 - Bridge Design

Surveying and Mapping

SURV 2110 - Introduction to Mapping

SURV 2200 - Construction Measurements

SURV 2221 - Surveying I

SURV 3222 - Surveying II

SURV 3320 - Photogrammetry and Remote Sensing

SURV 3421 - Geographic Information Systems I

SURV 3441 - Vector & Raster Analysis

SURV 3451 - Terrain Analysis

SURV 3901 - Special Topics

SURV 3902 - Special Topics

SURV 3903 - Special Topics

SURV 3904 - Special Topics

SURV 4110 - Geographical Information Systems (GIS) Practice

SURV 4410 - Surveying Computations and Adjustments

SURV 4415 - Geodetic Surveying Methods

SURV 4420 - Remote Sensing

SURV 4422 - Geographic Information Systems II

SURV 4465 - Legal Aspects of Land Surveying

SURV 4470 - Land Development Design

SURV 4475 - Land Surveying Practice

SURV 4901 - Special Topics

SURV 4902 - Special Topics

SURV 4903 - Special Topics

SURV 4904 - Special Topics

Systems Engineering

SYE 2100 - Systems Analysis and Design

SYE 2600 - Applications of Probability

SYE 3100 - Systems Reliability and Maintainability

SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture

SYE 3200 - Human Machine Systems

SYE 3300 - Program Management

SYE 3320 - Engineering Economics and Decision Analysis

SYE 3400 - Engineering Optimization I: Deterministic Decision Models

SYE 3501 - Fundamentals of Nuclear Engineering

SYE 3502 - Radiation Detection and Measurement

SYE 3600 - Statistics with Applications

SYE 3650 - Process Engineering and Improvement

SYE 3700 - Manufacturing and Production Systems

SYE 3710 - Logistics and Supply Chain Systems

SYE 3801 - Aerodynamics (Aeronautic Elective)

SYE 3802 - Aircraft Design and Performance (Aeronautic Elective)

SYE 3803 - Fundamentals of Avionics

SYE 3850 - Experimental Design

SYE 3901 - Special Topics in Systems Engineering

SYE 3902 - Special Topics in Systems Engineering

SYE 3903 - Special Topics in Systems Engineering

SYE 4400 - Engineering Optimization II: Stochastic Decision Models

SYE 4500 - System Modeling and Simulation

SYE 4501 - Nuclear Power Generation

SYE 4502 - Radiation Protection and Health Physics

SYE 4503 - Nuclear Fuel Cycle

SYE 4801 - Aircraft Propulsion

SYE 4802 - Helicopter Theory

SYE 4803 - Aeronautics Project

SYE 4900 - System Design Project

SYE 4901 - Special Topics in Systems Engineering

SYE 4902 - Special Topics in Engineering

SYE 4903 - Special Topics in Systems Engineering

SYE 4991 - Undergrade Research in SYE

SYE 4992 - Undergrad Research in SYE

SYE 4993 - Undergrad Research in SYE

Technical Communication

TCOM 2010 - Technical Writing

TCOM 2020 - Introduction to the Professions

TCOM 2030 - Research in Technical Communication

TCOM 3010 - Science Writing

TCOM 3015 - Environmental Writing

TCOM 3020 - Proposal Writing

TCOM 3030 - Instructional Design

TCOM 3045 - Fundamentals of Information Design

TCOM 3070 - User Assistance

TCOM 3120 - Technical Communication: Theory and Practice

TCOM 3145 - Social Media Integration

TCOM 3245 - Analytics and Search Engine Optimization (SEO) for Communicators

TCOM 3400 - Foundations of Design for the Web

TCOM 3430 - Foundations of Graphics

TCOM 3901 - Special Topics

TCOM 3902 - Special Topics

TCOM 3903 - Special Topics

TCOM 4000 - Professional Editing

TCOM 4035 - Fundamentals of Website Design

TCOM 4040 - Applied Graphics

TCOM 4045 - Foundations of Multimedia

TCOM 4070 - User Documentation

TCOM 4120 - Usability Testing

TCOM 4130 - Online Documentation

TCOM 4170 - Film and Video Production

TCOM 4175 - Animation Design, 2D

TCOM 4400 - Advanced Design for the Web

TCOM 4600 - Directed Study

TCOM 4700 - Internship

TCOM 4800 - Project Portfolio

University

PLA 2000 - Prior Learning Assessment for Students

SPSU 1001 - Hitchhiker's Guide to SPSU

SPSU 2000 - Foundations of Effective Leadership

Faculty

Southern Polytechnic State University Senior Administration

Dr. RON R. KOGER - Interim President

> Ed.D., University of Kansas
> M.Ed., University of Kansas
> B.S.Ed., Pittsburgh State University

Mr. RICHARD COLE- Vice President for Academic Affairs

> M.Arch., Georgia Institute of Technology
> B.S., Georgia Institute of Technology
> A.I.A., N.C.A.R.B. Certificate Holder
> Reg.Arch.

Mr. MICHAEL J. FOXMAN- Interim Vice President for Business and Finance

> MBA., Youngstown State University
>
> B.S., Miami Unviersity

Mr. JAMES E. HERBERT- Vice President of Information Technology and Chief Information Officer

B.S., Southern Polytechnic State University

Mr. KARL D. STABER- Vice President for Student and Enrollment Services

M.S., Eastern Kentucky University

B.S., Eastern Kentucky University

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Ph.D., Southern Baptist Theological Seminary
M.A., University of Louisville
M.Div., Southern Baptist Theological Seminary

Dr. WENDY KALLINA - Executive Director of Institutional Research

Ph.D., Auburn University
M.S., Oklahoma State University
M.S., Georgia Southwestern State University
B.S., Georgia Southwestern State University

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PhD., University of Illinois

M.S., University of Illinois

B.S., University of Illinois

Mr. David F. Caudill- Associate Vice President for Academic Affairs

MSIE., Lehigh University

BSME., North Carolina State University

Dr. Rebecca H Rutherfoord- Associate Vice President for Institutional Effectiveness

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M.S., Southern Polytechnic State University
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B.Arch., University of Idaho
B. of Environmental Science, University of Punjab
A.P.A., Reg.Architect.

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LEED AP, US Green Building Council

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B.S., Pusan National University, S. Korea

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M.Arts, University of Alabama

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Rizzuto, Anthony

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AIA
LEED AP Accredited Professional
NCARB Certificate Holder

Uddin, M. Saleh

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M.S., Georgia Institute of Technology
B.S., Georgia Institute of Technology
A.T.E.T., Southern Polytechnic State University

Department of Industrial Engineering Technology Faculty Emeriti

Bannerman, James W., Professor Emeritus
Brooks, Glen E., Professor Emeritus
Carden, Patricia, Professor Emerita
Carmichael, Thomas H., Professor Emeritus
Franklin, Patricia S., Professor Emerita
Hamrick, Janes, Professor Emeritus
McClure, Hoyt L., Professor Emeritus
McGuire, Richard W., Professor Emeritus
McKee, James, Associate Professor Emeritus
McPherson, Jack, Professor Emeritus
Stephens, Kenneth S., Professor Emeritus
Wimberly, Charles A., Professor Emeritus

Department of Mechanical Engineering Technology Faculty

Sweigart, John F.

Associate Professor and Department Chair

M.S.E.M., University of Missouri-Rolla
B.S.M.E., University of Missouri-Columbia
P.E., Georgia

Como, Joseph A.

Lecturer

M.Ed., Georgia State University
B.S., Mechanical Engineering, University of Hartford

Conrey, Gregory M.

Associate Professor

M.Ed., Georgia State University
B.S., Eastern Kentucky University

Dhanasekaran, Puttagounder Swaminathan

Assistant Professor

Ph.D., Wichita State University

M.Ed., Georgia State University
B.S., Eastern Kentucky University

Emert, Randall

Assistant Professor

M.S. Western Illinois University
B.S., Western Illinois University

Horton, Donald D.

Associate Professor

M.S.M.E., Michigan Technological University
B.S.M.E., Michigan Technological University
P.E., Georgia

Khazaei, Ali

Associate Professor

Ph.D., Tehran Azad University
M.Sc., University of Tehran
B.Sc., University of Tehran

Nasseri, Simin

Assistant Professor

Ph.D., University of Sydney, Australia
M.E., Iran University of Science and Technology
B.Sc., Iran University of Science and Technology

Russell, Norman A.

Associate Professor

Ph.D., Institute of Paper Chemistry
M.S., Institute of Paper Chemistry
B.S., Pulp and Paper Technology, North Carolina State University
P.E., Alabama

Mechanical Engineering Technology Faculty Emeriti

Lee, Julian R., Professor Emeritus
Logue, Laurence J., Professor Emeritus
Pearce, Britt, Professor Emeritus
Taylor, Leonard H., Head and Professor Emeritus
Williams, Orren W., Professor Emeritus
Young, Ronald C., Professor Emeritus

Faculty of the School of Engineering

Currin, Thomas R.

Professor and Dean, School of Engineering and School of Engineering Technology and Management

Ph.D., University of Connecticut
M.C.E., North Carolina State University
B.S., Southeastern Massachusetts University
P.E., Georgia, Massachusetts

Department of Civil and Construction Engineering Faculty

Barham, Wasim

Assistant Professor

Ph.D., University at Buffalo, State University of New York
M.S., Jordan University of Science and Technology
B.S., Jordan University of Science and Technology

Beadles, Sam

Professor and Department Chair

M.S., University of California, Los Angeles
B.S., Northern Arizona University
P.E., Georgia

Karim, M.A.

Assistant Professor

Ph.D., Cleveland State University, Cleveland, OH
M.S., Bangladesh University of Engineering and Technology
B.S., Bangladesh University of Engineering and Technology

Kim, Sung-Hee

Associate Professor

Ph.D., Texas A&M University, College Station, TX
M.S., Georgia Institute of Technology, Atlanta, GA
B.S., Inha University, Inchon, South Korea

Oguzmert, Metin

Assistant Professor

Ph.D., Syracuse University, Syracuse, NY
M.S., Istanbul Technical Univesity
B.S., Istanbul Technical University

Yang, Jidong

Assistant Professor

Ph.D., University of South Florida, Tampa, FL
M.S., University of South Florida, Tampa, FL
B.S., Hebei Agricultural University, Hebei, China

Yee, Tien M.

Assistant Professor

Ph.D., University of Kentucky, Lexington, KY
M.S., University of Kentucky, Lexington, KY
B.S., University of Kentucky, Lexington, KY

Department of Electrical and Mechatronics Engineering Faculty

Crimm, Lance

Professor and Department Chair

M.S.E.E., Georgia Institute of Technology
B.S.E.E., Georgia Institute of Technology
P.E., Georgia

Chakravarty, Sumit

Assistant Professor

Ph.D., University of Maryland

M.S., Texas A&M

B.S., Nagpur University

Chang, Yusun

Assistant Professor

Ph.D., Georgia Institute of Technology
M.S., Columbia University
M.S., Korea Aerospace University
B.S., Korea Aerospace University

Das, Sandip

Assistant Professor

Ph.D., University of South Carolina

M.E., University of South Carolina

B.E., Indian Institute of Engineering, Science and Technology

Diong, Bill

Associate Professor

Ph.D., University of Illinois at Urbana-Champaign
M.S., University of Illinois at Urbana-Champaign
B.S., University of Illinois at Urbana-Champaign

Ham, Chan

Assistant Professor

Ph.D., University of Central Florida
M.S.EE, University of Central Florida
B.E., Dongguk University

Lee, Hoseon

Assistant Professor

Ph.D., Georgia Institute of Technology
M.S., Georgia Institute of Technology
B.S., Georgia Institute of Technology

Ma, Kuo-Sheng

Assistant Professor

Ph.D., University of California, Irvine
M.S., University of California, Irvine
M.S., University of California, Riverside
B.S., TamKang University

Marshall, Matthew

Assistant Professor

Ph.D., Georgia Institute of Technology
M.S., University of Florida
B.S., University of Florida

McFall, Kevin

Assistant Professor

Ph.D., Georgia Institute of Technology
M.S., Massachusetts Institute of Technology
B.S., Virginia Polytechnic Institute and State University

Wang, Ying

Assistant Professor

Ph.D., The University of British Columbia
M.S., Shanghai Jiao Tong University
B.S., Shanghai Jiao Tong University

Department of Systems and Mechanical Engineering Faculty

Butler, Renee

Associate Professor and Department Chair

> Ph.D., Georgia Institute of Technology
> M.S.O.R., Georgia Institute of Technology
> B.I.E., Georgia Institute of Technology
> P.E., Georgia

Atiqullah, Mir

Professor

> Ph.D., Purdue University, Indiana
> M.S.M.E., Purdue University, Indiana
> B.S.M.E., Bangladesh University of Engineering & Technology

Ghavi, Mahmoud

Professor

> Ph.D., University of Arkansas
> M.S.N.E., University of Arkansas
> B.S.M.E., University of Tulsa

Ilksoy, Erhan

Senior Lecturer

> M.S.M.E., Georgia Institute of Technology
> B.S.M.E., Bosphorus University (Formerly, American Robert College)

Khalid, Adeel

Assistant Professor

> Ph.D., Georgia Institute of Technology
> M.S.I.E., Georgia Institute of Technology
> M.S.A.E., Georgia Institute of Technology
> M.S.M.E., Michigan State University
> B.S.M.E., GIK Institute of Technology (Pakistan)

Lowder, Margaret Loraine

Assistant Professor

> Ph.D., Georgia Institute of Technology
> M.S., Mechanical Engineering, Georgia Institute of Technology
> B.S., Mechanical Engineering, Georgia Institute of Technology

Mayeed, Mohammed

Assistant Professor

> Ph.D., University of Tokyo, Japan
> M.S.M.E., Bangladesh University of Engineering & Technology
> B.S.M.E., Bangladesh University of Engineering & Technology

Moghaddam, Kamran

Assistant Professor

Ph.D., University of Louisville
M.S.I.E., Tehran Polytechnic
B.S., Applied Mathematics, University of Tehran
P.E., Kentucky

Ruhala, Laura

Associate Professor

Ph.D., Engineering Science and Mechanics, August 1999, College of Engineering,
Pennsylvania State University State College,
B.Sc., Mechanical Engineering, Minor in Applied Mathematics
Specialty in Machine Design, June 1991
GMI Engineering & Management Institute, Flint, MI, USA

Ruhala, Richard

Associate Professor

Ph.D., Pennsylvania State University
B.S.M.E., Michigan State University

Salman, Muhammad

Lecturer

Ph.D., Mechanical Engineering, Georgia Institute of Technology
M.S., Mechanical Engineering, Georgia Institute of Technology
M.S., Mechanical Engineering, University of Engineering and Technology, Lahore, Pakistan
B.S., Mechanical Engineering, University of Engineering and Technology, Lahore, Pakistan

Sooklal, Valmiki

Assistant Professor

Ph.D., Mechanical Engineering, Tulane University
M.S., Mechanical Engineering, Tulane University
B.S., Mechanical Engineering, University of the West Indies

Winchester III, Woodrow W.

Associate Professor

Ph.D., Industrial & Systems Engineering, NC A&T SU
M.S., Industrial & Systems Engineering, NC A&T SU
B.S., Industrial & Systems Engineering, NC A&T SU

Veazie, David

Professor

Ph.D., Georgia Institute of Technology
M.S.M.E., Georgia Institute of Technology
B.S.M.E., Minor Math/Physics, Southern University – Baton Rouge, Louisiana

Chen, Li

Librarian, Associate Professor

M.L.I.S., University of Western Ontario
B.A., Beijing Foreign Language University

Kim, Hyun Chu "Leah"

Librarian-Assistant Professor

M.L.I.S., Valdosta State University
B.A., University of Washington - Seattle

Ma, Yongli

Librarian-Associate Professor and Assistant Director

M.L.I.S., University of South Carolina
M.Ed., University of South Carolina
B.A., Shanghai Foreign Languages Institute

Mills, Joyce White

Librarian, Associate Professor and Library Director

Ph.D., Florida State University
D.A.S.L., Emory University
M.S.L.S., University of Wisconsin
B.A., Spelman College

Vincent, Steven F.

Librarian, Associate Professor

M.A., Western Michigan University
M.S.L., Western Michigan University
A.B., University of Michigan

Wimer, Aaron

Librarian-Assistant Professor

M.L.I.S., Clarion University of Pensylvania
B.S., Clarion University of Pennsylvania
A.A., Butler County Community College

Institutions of the University System of Georgia

Research Universities

Georgia Institute of Technology	Atlanta
Georgia Regents University	Augusta
Georgia State University	Atlanta
University of Georgia	Athens

Regional Universities

Georgia Southern University	Statesboro
Valdosta State University	Valdosta

State Universities

Albany State University	Albany
Armstrong Atlantic State University	Savannah
Clayton State University	Morrow
Columbus State University	Columbus
Fort Valley State University	Fort Valley
Georgia College & State University	Milledgeville
Georgia Southwestern State University	Americus
Kennesaw State University	Kennesaw
Savannah State University	Savannah
Southern Polytechnic State University	Marietta
University of North Georgia	Dahlonega
University of West Georgia	Carrolton

State Colleges

Abraham Baldwin Agricultural College	Tifton
Atlanta Metropolitan State College	Atlanta
Bainbridge State College	Bainbridge
College of Coastal Georgia	Brunswick

Dalton State College	Dalton
Darton State College	Albany
East Georgia State College	Swainsboro
Georgia Gwinnett College	Lawrenceville
Georgia Highlands College	Rome
Georgia Perimeter College	Decatur
Gordon College	Barnesville
Middle Georgia State College	Macon
South Georgia State College	Douglas

Athletics

Athletics

Southern Polytechnic State University is a member of the National Association of Intercollegiate Athletics (NAIA) and the Southern States Athletic Conference (SSAC). The University competes in four intercollegiate sports, including men's soccer in the fall, men's and women's basketball during the winter, and baseball in the spring. All four of the Southern Polytechnic teams have enjoyed much success over the years. The squads use the nickname "Hornets" and the school colors are forest green, white and black.

Athletic Facilities

Southern Polytechnic features several on-campus athletic facilities. An athletic training room located in the Hornets Nest, the University's gymnasium, serves the medical needs of all student-athletes.

The men's soccer team plays at Neusoft Technologies Field, located on the far west side of campus. Locker room space and a building for storage are near the field.

Serving as the home court for the Southern Polytechnic men's and women's basketball squads is the Hornets Nest, located on the south side of campus. The athletic training room is just a few steps from the court and locker room space for Southern Poly's teams, visiting squads and game officials is nearby.

Sir Walter J. Kelly Sr. Memorial Field, located near the gymnasium on the far south end of campus, is where the Hornets play baseball. The facility features new seating, a new scoreboard and a new press box. An indoor facility, located down the left-field line just a few steps from SPSU's dugout, includes two full-size batting cages, two soft-toss areas, a bullpen with a mound and weight training equipment. There is locker room space and buildings for storage near the field.

For more information, please visit us at www.SPSUHornets.com.

Bookstore

The Southern Polytechnic State University bookstore is located on the lower level of the Student Center. In addition to new and used textbooks, you can also purchase software, reference books, school supplies, engineering supplies, calculators, SPSU apparel, greeting cards, health and beauty aids, drinks, and snacks.

On the last day of registration and the first week of classes, the bookstore is open for extended hours.

Please visit us to find more information and purchase your books online at www.spsu.edu/bookstore.

Career and Counseling Center

Counseling Services

The Career and Counseling Center offers a variety of counseling services to help students succeed. The Center provides counseling for personal, academic, and career concerns.

Personal concerns such as anxiety, depression, relationship problems, low self-esteem, low self-confidence, and communication issues can make it very difficult for students to gain the most from the university and from their classes. Professional counselors provide time limited **individual and/or group sessions for students** seeking confidential assistance with these and other personal issues.

Part of the career development process involves increasing self-understanding in such areas as values, life goals, interests, and skills. **Counselors can help students increase their self-understanding and learn how to match their personal characteristics with the work environments that a university education makes possible for them.**

Academic concerns center on more effective time management, study skills and dealing with test anxiety. Counselors can assist students in identifying deficiencies in these areas to make the overall academic experience more successful. Many students find university work more difficult than they expected and find that it strains their abilities.

Counselors can assist students in developing skills to manage stress, overcome test anxiety, improve test-taking strategies, enhance memory and better understand their learning style. The Career and Counseling Center provides a variety of assessments to assist students in clarifying and/or confirming their goals.

Counselors provide outreach programs on many topics, including stress management, anxiety, depression, relationship building, procrastination and other student concerns (a detailed list can be found on the Center's website at www.spsu.edu/counselingservices/index.htm.)

All counseling services are **free of charge**, confidential, and **are available by appointment**. Counseling staff members are also available for consultation with SPSU faculty and staff who are concerned about specific situations and/or individuals.

Career Services

The Career and Counseling Center provides job search assistance for graduates and for students seeking full-time, part-time, temporary and on-campus employment. The Center provides assistance to students in preparing for the job search and obtaining employment suited to their career goals and aspirations, but can never guarantee employment for any student or graduate. Services offered include:

- Assisting in resume preparation
- Offering career search workshops and mock interviews
- Access to Jobs and career database (Career Link)
- On-campus interviews **and/or information sessions**

Students are encouraged to make use of career services as early as possible during their stay at Southern Polytechnic. **Degree candidates should begin the job search process at least two semesters prior to their graduation.**

On-Campus Employment

There are two kinds of on-campus positions for students: College Work Study (from funds awarded by the Financial Aid Office) and Student Assistants (from funds that are allocated to the department). Undergraduate students seeking on-campus employment should begin their search by registering in the Career Link database. International students should begin the job search process in the ATTIC.

Alumni assistance: Job search assistance for alumni includes web registration in the **CAREER LINK** (jobs) database on the Center's web page. Alumni may attend any skillshop sessions offered by the Center and career fairs sponsored by the Center.

Experiential Education (Cooperative Education and Internship)

Southern Polytechnic State University offers it's students the opportunity to gain valuable work experience directly related to their academic majors through a University sponsored experiential education program. Students interested in either program should attend an orientation session or should complete the online orientation session (dates and links posted on the Career and Counseling Center's website).

Benefits of participating in Cooperative Education or an Internship include:

- Providing career related hands-on work experience
- Earning a competitive salary for school and tuition expenses
- Learning the company culture
- Networking with professionals in your field
- Helping get your foot in-the-door for full-time employment
- Developing self-confidence
- Establishing valuable contacts for letters and references
- Gaining practical experience in the work environment
- Helps students in their career decision making process
- Provides substantial support for education expenses

Cooperative Education (Co-op)

Co-op is founded on the principle that learning takes place through practical experience as well as through academic achievement. Students participating in the co-op program alternate school and work.

Co-op students are required to follow all guidelines set forth by the Career and Counseling Center, as well as the rules and regulations of the University. In addition to university requirements, students must meet any additional co-op requirements set forth by the co-op employer. Students unable to maintain university or company co-op requirements may be given one probationary term to correct deficiencies before being withdrawn from the co-op program.

The Career and Counseling Center refers students to employers after they have been approved as a co-op applicant (Note that acceptance as a co-op applicants does not guarantee a student's employment in a co-op position). The employer has the final decision regarding offering co-op employment. Upon acceptance of a co-op position, the student is expected to remain with their co-op employer for a minimum of three (3) co-op work terms. In addition to Career Services referrals, co-op participation can also be started through student self-referral. Students and employers must meet program requirements and guidelines (contact program coordinator for details).

Students with metro-Atlanta co-op assignments may live in Southern Polytechnic State University housing. In addition, students with local co-op work assignments are eligible to participate in all co-curricular, intramural, and health service activities on campus with the payment of the regular student athletic, activity, and health fees. Although no credit is awarded (students receive a grade of 'S' or 'U'), the university views co-op students as active, continuing, full-time students during their periods of approved work experience.

Although neither the student nor the employer makes a commitment for full-time employment upon completion of the co-op program, many SPSU co-op students are offered career employment with their co-op employers. Satisfactory completion of both requirements for graduation and co-op guidelines make an undergraduate student eligible to receive recognition for participation in the co-op program on their Southern Polytechnic State University diploma and academic record.

Internship Program

The Southern Polytechnic State University Internship program is a short-term or time-limited work experience in a professional environment. It is designed to enhance academic, personal, and professional development and will assist students in making a smooth transition from the classroom to the world of work, and to provide students with insight about potential careers. Usually, an internship is a one-time experience for a student who has attained at least some academic preparation in a professional field.

Co-op and Internship Eligibility and Requirements for Undergraduate Students

- Be a registered, full-time student at the time of application to the program and during the semester prior to going to work (i.e., carry at least 12 hours fall and spring and 6 hours during the summer)
- Have and maintain a minimum 2.00 GPA (many employers require higher averages)
- Have completed at least 24 semester hours of academic credit toward their degree
- Must have completed at least one semester at SPSU
- Attend an orientation session (can be online) and meet with the program coordinator, and
- Co-op applicants must commit to participate in a minimum of three (3) alternating co-op work terms with the same employer

Students must be fully authorized to work in the United States to participate in the co-op program.

International Students

Must obtain written eligibility authorization from the International Services Coordinator in the ATTIC before beginning **EACH** working assignment. Due to the INS regulations, International students are not permitted to Intern more than one and a half-academic years for undergraduates and one academic year for graduates. Once an Internship is obtained, International students **MUST** return to the International Services Coordinator to complete additional paperwork. International students failing to do so will be **DROPPED** from the Internship Program.

Degrees and Certificates Offered

Bachelor of Arts

Computer Science, BA

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
- Take any 2 of the courses below (with labs):

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- Free Elective **(1 credit hour)**
- 1 hour each from Areas A & D **(2 credit hours)**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Upper-Level CS Elective (or Approved UL CGGD/SWE/IT Elective) **4 Credits**
- Upper-Level Free Electives (UL CS must be at least 4 hours, and the total of CS UL and UL free electives is 10 hours) **6 Credits**
- Approved Minor **15 Credits**
- Free Electives **5 Credits**

Degree Program Total: 123

English and Professional Communication, BA

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Science **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  Or
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Course in Behavioral Science **3 Credits**
- Group 4- Course in Cultures and Societies **3 Credits**

Area F

Required Courses, 12 Credits
- COMM 2170 - Introduction to Media Studies **3 Credits**
- ENGL 2030 - Research in Professional and Critical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
- ENGL 2500 - Language and Meaning **3 Credits**
Choose Two Courses, 6 Credits
- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**

- Other coursework, as approved by the Department (6 Credits Max)
- Any Foreign Language, 2001 or higher (6 Credits Max)

Upper Level Required Courses (19 Credits)

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- ENGL 4110 - Writing in Collaborative Environments **3 Credits**
- ENGL 4800 - Project Portfolio **3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**

Upper Level Area Distribution (27 Credits)

- A minimum of 6 credit hours must be taken in each of the three tag areas.
- No more than 6 credits may be at the 2000 level.
- Up to 6 credits outside of courses listed below, with departmental approval.

1. **Textual Production Area**

   COMM 2000 - Business Communication
   COMM 3250 Newspaper Practicum
   ENGL 3081 Studies in Genre
   ENGL 3082 Science and Literature
   ENGL 3010 Science Writing
   ENGL 3025 Creative Writing Workshop
   ENGL 3040 Article and Essay Workshop
   ENGL 3045 New Media Writing
   TCOM 3015 Environmental Writing
   TCOM 3020 Grant and Proposal Writing
   TCOM 4000 Professional Editing

2. **Visual Production Area**

   ARTS 2010 Intro to Drawing
   ARTS 3010 Drawing for New Media
   ARTS 3000 Visual Thinking
   ARTS 3170 Digital Photography
   TCOM 3430 Foundations of Graphics
   TCOM 4040 Applied Graphics
   TCOM 4170 Film and Video Production
   TCOM 4400 Advanced Design for the Web

3. **Media & Cultural Studies Area**

   ENGL 3180 Film as Literature
   ENGL 4010 Publishing for New Media
   ENGL 4170 Media and Narrative

COMM 3060 Media, Culture, and Society
COMM 3065 International Communication
TCOM 4045 Foundations of Multimedia
TCOM 3145 Social Media Integration

Free Electives (15 credits)

Degree Program Total: 121

For additional information about the B.A. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Mathematics, Education Track, BA

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
  CSE 1301 **3 Credits** (Choose from following)
- CSE 1301C - Programming & Problem Solving I
- CSE 1301E - C++ Programming for Engineers
- CSE 1301J - Programming & Problem Solving I

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 3696 - Geometry **3 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH Electives **3 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- MAED 2010 - Functions and Modeling **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 123

New Media Arts, BA

The Bachelor of Arts in New Media Arts provides students with an opportunity to develop the technical and artistic skills needed to serve as practitioners in the fields of multimedia development and design, web design, and video production. As a degree that straddles two worlds--the fine and the applied arts--the degree program encourages both creativity and practical application. Students will have an opportunity to develop a strong foundation in the traditional fine arts and learn to translate these skills to new media contexts. They will also learn to approach the technical aspects of new media applications from the sensibilities of an artist as well as a technician.

With its balance between the artistic and technical aspects of new media production, the new media arts degree program should prepare students to meet a growing marketplace need for multimedia artists and to rise to the top of the pack of individuals competing for these positions. While providing an undergraduate degree option for students interested in entering careers in the fine and applied arts, it would also provide appropriate preparation for graduate study.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**

- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  OR
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

Required Courses 6 Credits
- ARTS 2020 - History and Principles of Design **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
  Studio Courses, Choose Three- 9 Credits
- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 2110 - Painting and Mixed Media **3 Credits**
- ARTS 2220 - 2D and 3D Design **3 Credits**
- ARTS 2903 - Music Theory **3 Credits**
  Choose One- 3 Credits
- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**

MAJOR REQUIREMENTS

Basic Required Courses in the Major (24 Credits)

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3100 - History of New Media Arts **3 Credits**
- COMM 3160 - Media Theory and Practice **3 Credits**
- ARTS 4100 - Media Arts Studio **3 Credits**
- ENGL 3045 - New Media Writing **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**

- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- ARTS 4800 - Senior Portfolio **3 Credits**

Additional Courses in the Major (18 Credits; Choose 6)

- ARTS 3010 - Drawing for New Media **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- ARTS 4270 - Advanced Digital Video **3 Credits**
- ARTS 4600 - Directed Study **3 Credits**
- ARTS 4700 - Internship **3 Credits**
- ARTS 4903 - Special Topics **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- COMM 3060 - Media, Culture, and Society **3 Credits**
- ENGL 3180 - Film as Literature **3 Credits**
- ENGL 4170 - Media and Narrative **3 Credits**
- TCOM 4040 - Applied Graphics **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

Free Electives

Free Electives 18 Credits

Degree Program Total: 121

For additional information about the B.A. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Bachelor of Architecture

Architecture, BARCH

[5 Year Professional Degree]

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Sciences - Lab Science - Any Lab Science **4 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 American Context , One Course **3 Credits**
- Group 2 World History , One Course **3 Credits**
- Group 3 Behavioral Science , One Course **3 Credits**
- Group 4 Cultures and Societies , One Course **3 Credits**

Area F

- ARCH 1001 - Design Foundation I **4 Credits**
- ARCH 1002 - Design Foundation II **4 Credits**
- ARCH 1241 - Design Communication I **2 Credits**
- ARCH 2003 - Design Foundation III **4 Credits**
- ARCH 2242 - Design Communication II **2 Credits**
  One credit from MATH 1113 and one credit from MATH 2253 will be added to Area F.

Requirements

Architecture

- ARCH 1000 - Orientation to Architecture **2 Credits**
- ARCH 2111 - Architecture Culture I: Early Civilizations & Medieval **3 Credits**
- ARCH 2004 - Design Foundation IV **4 Credits**
- ARCH 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- ARCH 2211 - Architecture Structures I - Introduction to Structures **3 Credits**
- ARCH 2311 - Environmental Tech I - Systems Selection and Materials **3 Credits**
- ARCH 3011 - Architecture Studio V **4 Credits**
- ARCH 3012 - Architecture Studio VI **4 Credits**
- ARCH 3113 - Architecture Culture III - 1850 through 1945 **3 Credits**
- ARCH 3116 - Urban Planning and Design Theory **3 Credits**
- ARCH 3211 - Architecture Structures II: Steel and Wood **4 Credits**
- ARCH 3212 - Architecture Structures III: Concrete and Lateral Loads **3 Credits**
- ARCH 3313 - Environmental Technology II: Human Comfort, Sustainability and HVAC Systems: **3 Credits**
- ARCH 3314 - Environmental Technology III: Natural & Artificial Lighting, Electrical Systems & Vertical Circulation: **3 Credits**
- ARCH 4013 - Architecture Studio VII **4 Credits**
- ARCH 4014 - Architecture Studio VIII **4 Credits**
- ARCH 4114 - Architecture Cultures IV: 1945-Current **3 Credits**
- ARCH 4224 - Professional Practice I - Codes and Technical Documents **3 Credits**
- ARCH 5412 - Professional Practice II - Cost Control **2 Credits**
- ARCH 5413 - Professional Practice III - Practice and Ethics **3 Credits**
- ARCH 5593 - Thesis Prep **2 Credits**
- ARCH 5998F - Focus Studio **4 Credits**
- ARCH 5999R - Thesis Research S/U **1 Credits**
- ARCH 5999T - Thesis Studio **4 Credits**
- Electives **17 Credits**
- ARCH 39X1 - Special Topics **1 to 4 Credits**
- ARCH 49X1 - Directed Study **1 to 4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Degree Program Total: 153

Bachelor of Apparel and Textiles Technology

Apparel and Textiles, BAT

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- C1 - Literature of the World **3 Credits**
- C2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Two Area D Lab Science Courses **8 Credits**
- Math - One Area D Math Course **4 Credits**

Note: A student cannot receive credit towards the ATT degree for both MATH2260 and IET2227

Area E

- E1 - US History **3 Credits**
- E2 - World History **3 Credits**
- E3 - Behavioral Science **3 Credits**
- E4 - Cultures and Societies **3 Credits**

Area F

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- MGNT 2201 - Business Computer Applications **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
  One credit from MATH 1113 will be added to Area F to complete the 18 hour requirement.

Major Courses

- ATT 1000 - Orientation **1 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**
- ATT 4840 - Textile/Apparel Business Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

ATT Related Electives: Select four courses: * 12

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ATT 4820 - Senior Internship **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- Free Electives **6 Credits**
  Note: A student cannot receive credit towards the ATT degree for both MATH2260 and IET2227

Degree Program Total: 120

* At least six hours of Related Elective must be upper level courses

Bachelor of Applied Science

Information Technology, BAS

This program is designed for students who have completed an AAS or AAT degree from a two year technical college in a computing discipline.

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

AREA C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 1113 - Pre-calculus **(3 credits - 1 hour to Area F)**

Take any 2 of the courses below (with labs) for a total of 8 hours:

- ASTR 1000K - Introduction to the Universe **4 credits**
- BIOL 2107K - Principles of Biology I **4 Credits**
- BIOL 2108K - Principles of Biology II **4 Credits**
- CHEM 1211K - Principles of Chemistry I **4 Credits**
- CHEM 1212K - Principles of Chemistry II **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credit**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credit**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory **1 credit**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credit**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Students who do not have enough hours from their technical block and general education hours to equal 60 semester hours, may receive "elective" credit hours to make up the deficient number of hours.

> Technical Block Course **(3 credit hours)**
> Technical Block Course **(4 credit hours)**

- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- Area D Carryover credit **1 credit**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- Technical Block Remainder Courses from AAS **(30 credit hours)**
- Directed Electives - Choose 2 from the course list below. **6 credits**

Directed Electives

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**

Degree Program Total: 122

All IT, CS, CSE and SWE designator courses must have a grade of 'C' or better.

Manufacturing Operations, BAS

The Bachelor of Applied Science in Manufacturing Operations has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Manufacturing Operations program are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Manufacturing Operations program prepares students in the areas of manufacturing, logistics and operations through an industry-driven curriculum encompassing manufacturing processes, quality principles, engineering economy, work measurement and facilities layout.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website iet.spsu.edu/BAS.html outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Technical Electives

Choose any two courses

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 120

Supply Chain Logisitics, BAS

The Bachelor of Applied Science in Supply Chain Logistics has been specifically designed for students who have completed an Associate of Applied Science Degree from a Technical College System of Georgia institution.

The goal of the partnership between SPSU and the TCSG schools is to provide the opportunity for degreed graduates from the technical schools of Georgia to complete a Bachelor's degree in approximately 60 semester credits which in equivalent to about two years as a full time student.

All required major courses to complete the BAS in Supply Chain Logistics are offered totally online by SPSU faculty. All general education requirements are also offered on-line through the university system called E-core.

The BAS Supply Chain Logistics prepares students for careers in managing raw materials, work-in-process and finished goods inventories and how to efficiently control the movement of those inventories.

Graduates in this type program are engaged in challenging and demanding careers in responsible positions such as Logistics Manager, Demand Planning Analyst, Senior Buyer, Purchasing Agent and Supply Chain Manager.

Companies traditionally who hire SPSU graduates include such leaders as Shaw Industries, Delta Airlines, Georgia Power, Mohawk Industries, Lockheed Martin and UPS.

Since each TCSG program is different, the website iet.spsu.edu/BASSC.html outlines the articulation of each program to SPSU.

Further information on the TCSG and SPSU program can also be found at tcsg.spsu.edu.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- Technical Block - Up to 17 Semester Hours **17 Credits**
- Major Technical Block - Up to 21 Semester Hours **21 Credits**

Major Courses

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 3135 - Principles of Marketing **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Degree Program Total: 120

Bachelor of Science

Biology, B.S.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
  Take any 2 of the courses below (with labs) for a total of 8 hours:
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

Note:

PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Take any 4 courses (with labs) from the list below for a total of 18 hours*. (*Includes 2 carry-over credits from Area A and Area D.) Courses used as Area D requirements may not be selected.

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**

Note:

PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L may be taken instead of PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L

Common Biology Major Requirements

A grade of "C" or better must be earned in all courses (excluding core areas A-E and free electives).

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Biology major must complete one program track (see below).

General Biology Track Requirements

- BIOL 3300K - Ecology **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
- At least 5 additional BIOL or BIOC courses above 2199 (excluding track requirements), with **at least one course** from each of the **Cellular Form and Function group** and the **Organismal Form and Function group 17-21 Credits**
- Free Electives **9-13 Credits**

Cellular Form and Function group

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4410 - Immunology **3 Credits**
- BIOL 4470 - Plant Physiology **3 Credits**

Organismal Form and Function group

- BIOL 3700K - Ichthyology **4 Credits**
- BIOL 4100K - Entomology **4 Credits**
- BIOL 4110 - Parasitology **3 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**

Biochemistry & Molecular Biology Track Requirements

- BIOL 3200K - Applied Molecular Biology Laboratory **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOC 3112K - Biochemistry II **4 Credits**
- At Least 4 additional BIOL or BIOC courses above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives 9 – **13 Credits**

Bioinformatics Track Requirements

- BIOL 2500K - Bioinformatics I - Tools & Databases **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 4510K - Bioinformatics II **4 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- At least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9 – 12 Credits**
- Free Electives **2 – 5 Credits**

Biotechnology Track Requirements

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3310K - Molecular Biology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4350K - Cell and Tissue Culture **4 Credits**
- BIOL 4600K - Biotechnology **4 Credits**
- At Least 3 additional BIOL or BIOC courses above 2199 (excluding track requirements) **9-11 Credits**
- Free electives **6-8 Credits**

Pre-Health Professional Track Requirements

- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- BIOL 4460K - Human Anatomy **4 Credits**
- At Least 4 additional BIOL or BIOC Courses Above 2199 (excluding track requirements) **12-16 Credits**
- Free Electives **9-13 Credits**

Degree Program Total: 120

Biology, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of

students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**

- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 3400K - Cell Physiology **4 Credits**
- BIOL 4200K - Zoology **4 Credits**
- BIOL 4440K - Botany **4 Credits**
- BIOL 4480 - Evolution **3 Credits**
  Elective Credits **8 Credits** (Choose 2 from following)
- BIOL 3310K - Molecular Biology
- BIOL 4400K - Human Physiology
- BIOL 4460K - Human Anatomy
- BIOL 4600K - Biotechnology

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 126

Chemistry, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
  Take any 2 of the courses below (with labs):
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

Take any 4 courses (with labs) from the list below. Courses used as Area D requirements may not be selected.

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- NOTE: 1 credit each from Area A and Area D Math will be used to add to the 18 hours required in Area F.

Chemistry Major Requirements

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CHEM 2601 - Chemical Literature **2 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- A Chemistry major must complete one program track (see below).
- 1 Hour from Area A Math and Area D Math will be added to the total hours in the major.

General Chemistry Track

- Four additional BIOC, CHEM, MATH, or Science electives at the 3000 level or higher. **12-16 Credits**
- Free electives **11-15 Credits**

Materials Science Track

- MSCI 3101K - Introduction to Material Science **4 Credits**
- CHEM 4412 - Main Group Inorganic Chemistry **3 Credits**

- CHEM 4415 - Solid State Chemistry **3 Credits**
- Upper-level CHEM elective **3-4 Credits**
- Free electives **13-14 Credits**

Total Hours: 120 Hours

Chemistry, Education Track, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits***
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- CHEM 4111K - Physical Chemistry I **4 Credits**
- CHEM 4112 - Physical Chemistry II **3 Credits**
- CHEM 4112L - Physical Chemistry II Lab **1 Credits**
- CHEM 4411 - Inorganic Chemistry **3 Credits**
- BIOC 3111K - Biochemistry I **4 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

*NOTE

The following Physics sequences are recommentend to satisfy AREA D

     PHYS 1111 /PHYS 1111L & PHYS 1112 /PHYS 1112L OR

     PHYS 1211/PHYS 2211L & PHYS 2212 /PHYS 2212L

Civil Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

*Note: 1 hour from Area A MATH 1113 will be used to satisfy Area F 18 hour requirement.

- CET 2110 - Problem Solving Methods in CET **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- SURV 2221 - Surveying I **4 Credits**

Requirements

- CET 1001 - Orientation to the Civil ET, Environmental ET, and Geospatial Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3210 - Structural Mechanics **3 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 3510L - Traffic Analysis and Road Design Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3220 - Applied Structural Steel Design **3 Credits**
- CET 3230 - Concrete Infrastructure Design **3 Credits**
- CET 3430L - Site Exploration and Field Testing Lab **1 Credits**
- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- CET 4130 - Special Inspections **2 Credits**
- CET 4240L - Structural Detailing Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**
- ENGT 3124L - Strength of Materials Lab **1 Credits**
- CET Electives **9 Credits**
- MATH 2253 (Area D Carryover) **1 Credit**

Degree Program Total: 124

CET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

Civil Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- MATH 2254 - Calculus II **4 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**

Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ENVS 2202 - Environmental Science (ECORE) **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **3 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3202 - Design of Concrete Structures **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3708 - Geotechnical Engineering Lab **1 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 3703 - Environmental Engineering II **3 Credits**
- CE 3704 - Environmental Engineering Lab I **1 Credits**
- CE 4103 - Design of Steel Structures **3 Credits**
- CE 4105 - Foundation Design **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4179 - Transportation Engineering Lab **1 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CE XXXX Technical Electives **6 Credits**

Degree Program Total: 130

The Civil Engineering degree requires a grade of "C" or better in all CE, SURV, and ENGR courses applied to degree requirements.

CE Technical Electives: (6 hrs)

- CE 4704 - Engineering Hydraulic Analysis and Design **3 Credits**
- CE 4705 - Advanced Soil Mechanics **3 Credits**
- CE 4706 - Pavement Engineering **3 Credits**
- CE 4707 - Design of Wood Structures **3 Credits**
- CE 4708 - Hazardous Waste Engineering **3 Credits**
- CE 4709 - Advanced Structural Analysis **3 Credits**

Computer Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ECET 1101 - Circuits I **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
  Note that the carryover credits from Area A Math and Area D Math will be added to Area F to total 18 hours.

Major Courses

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits ****
- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 3710 - Hardware Programming and Interfacing **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4610 - Control Systems **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- CpET Electives **11**

Degree Program Total: 129

Note:

* PHYS 1111/PHYS 1111L and PHYS 1112 /PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

CpET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

CpET Electives

Embedded Systems (take 2 of the following courses)

Graduate will specialize in the design and implementation of smart devices used in products ranging from audio to medical to security systems. Both hardware design and programming at the system level will be stressed. The specialist will gain resume skills such as DSP and VHDL design, embedded micro-controller and embedded PC interfacing and programming.

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**

Networks (take 2 of the following courses)

Graduate will specialize in the development and implementation of networks of computers and micro-controllers. Applications include Telemedicine, factory automation systems, point-of-sales systems, and robotics. There will be heavy emphasis of high-level programming using C, Visual C++, JAVA, Visual BASIC, HTML, Windows, LINUX, TCP/IP, etc. Hardware will emphasize PCs and embedded PCs, smart devices, LAN technologies, and remote sensing and control.

- ECET 4710 - Network Programming and Interfacing **4 Credits**
- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 48XX - BS Telecom 3000-4000 course
- ECET 48XX - BS Telecom 3000-4000 course
  Note: *ECET 4830 cannot be used as an elective.*

Computer Game Design and Development, BS

Students must earn a C or better in all the major courses (CSE, CS, SWE, and CGDD).

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2254 - Calculus II
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112K - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
  One credit from MATH 2253 & MATH 2254 will be added to Area F to complete the 18 hour requirement.

Requirements

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
  Advanced Topics:
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4303 - Educational and Serious Game Design **3 Credits**
- CGDD 4803 - Studio **3 Credits**
- CGDD 4814 - Capstone **4 Credits**
- Free Electives **6 Credits**
- Concentration (listed below): **9-10 Credits**

Note:

Students are strongly recommended to take at least one Physics course for their Area D because some later courses in this program (in particular the CGDD 4113 and CGDD 4603) may rely upon Physics. Students who are interested in the Simulation-Informatics concentration (see below) may find Biology or Chemistry beneficial instead of Physics.

Students taking the Educational-Serious or Planning Management concentration should consult with their advisor to ensure they have the required prerequisite courses needed (using free elective) since some of these concentration courses require specific electives that must be taken prior to the concentration courses.

BS CGDD Upper-level Concentration

While the required courses in the degree ensure students are exposed to the breadth of the field of computer game design and development, it is also imperative that students are given flexibility to customize their experience and apply the knowledge gained in their required courses. To this end, the degree requires students select a concentration in which they may gain a depth of knowledge within their chosen area.

The following are suggested concentrations, but students may select a customized plan of study and set of courses under with their advisor's approval.

Media-Production

- MATH 3312 - Linear Algebra **4 Credits**
- CGDD 4113 - 3D Modeling and Animation **3 Credits**

- CGDD 4603 - Production Pipeline and Asset Management **3 Credits**

Distributed-Mobile

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**

Educational-Serious

- 6 hours of approved TCOM courses
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**

Planning-Management (pick 3 of 4)

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4185 - Technology Management **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 4663 - Software Project Management **3 Credits**

Simulation-Informatics

- CSE 3153 - Database Systems **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

BS CGDD Program Objectives

Meet the educational needs of students and prepare them for careers within the discipline

Expand the visibility of SPSU and the University System of Georgia (USG) in the field of game design and development

Create a strong community of students and alumni

Serve the community and industry

BS CGDD Learning Outcomes

Upon graduation, students will be able to:

- Decompose and solve complex problems through artifacts of computing such as hardware, software specifications, code and other written documents
- Demonstrate an understanding of computing principles in the areas of programming, data structures, architecture, systems, graphics, and artificial intelligence and how they relate to computer game design and development
- Utilize mathematics and science in game design and development
- Apply principles of game design and development to generate a portfolio showcasing their successful industrial experience, research, and/or creative works
- Demonstrate a breadth of knowledge in historic and emerging domains and genres of computer gaming and interaction
- Demonstrate an understanding of social, professional global, and ethical issues related to computing
- Work effectively in teams on system development projects
- Demonstrate effective oral and written communication skills

Degree Program Total: 121

Computer Science, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- STS 2400 - Science, Technology, and Society **2 Credits**
- COMM 2400 - Public Speaking **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2253 - Calculus I **4 Credits**

Take any two courses (plus labs) from the following for a total of 8 hours:

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- 1 hour each from Areas A & D **(2 credit hours)**
- Free Elective **(1 credit hour)**

Required Courses

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
  OR
- MATH 1401 - Intro to Statistics **3 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3123 - Programming Language Concepts **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- CS 3424 - Data Structures **4 Credits**

- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4413 - Algorithm Analysis **3 Credits**
- CS 4893 - Computer Science Capstone **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- SWE 3613 - Software System Engineering **3 Credits**
- Approved Math Elective (MATH 2255, 2306, 2335, 3000 level or 4000 level) **3 Credits**
- Upper Level CS Electives (See approved list below) **9 Credits**
- Free Electives (Except MATH 1111) **5 Credits**

Approved Courses for CS Upper Level Electives

- IT 4153 - Advanced Database **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- SWE 3843 - Embedded Systems Construction and Testing **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4633 - Component-Based Software Development **3 Credits**
- SWE 4743 - Object-Oriented Development **3 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**
- CGDD 3103 - Application Extension and Scripting **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- CGDD 4313 - Designing Online Learning Content and Environments **3 Credits**
- CGDD 4703 - Data Modeling and Simulation **3 Credits**

Degree Program Total: 122

Construction Engineering, BS

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2335 - Numerical Methods I **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**
- Area E1 - Course in History: American Perspective **3 Credits**
- Area E2 - World History **3 Credits**
- Area E3 - Course in Behavioral Science **3 Credits**
- Area E4 - Cultures and Societies **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3305 - Data Collection and Analysis in Engineering **3 Credits**
- ENGR 3324 - Project Cost Analysis **4 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CE 3201 - Structural Analysis **3 Credits**
- CE 3501 - Materials for Civil & Construction Engineering **3 Credits**
- CE 3502 - Materials for Civil & Construction Engineering Lab **1 Credits**
- CE 3701 - Geotechnical Engineering **3 Credits**
- CE 3702 - Environmental Engineering **3 Credits**
- CE 4177 - Transportation Engineering **3 Credits**
- CE 4178 - Highway Design and Construction **3 Credits**
- CE 4703 - Engineering Hydrology **3 Credits**
- CE 4800 - Senior Project **3 Credits**
- CM 3160 - Construction Equipment **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- CE 4202 - Steel and Concrete Design **4 Credits**
- CM 4710 - Construction Safety **4 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**

Degree Program Total: 130

The Construction Engineering degree requires a grade of "C" or better in all CE, SURV, ENGR and CM courses applied to degree requirements.

Construction Management, BS

Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C:

- Group 1 - Take One Course from the Literature Group **3 Credits**
- Group 2 - Take One Course from the Art and Culture Group **3 Credits**

Area D: Laboratory Sciences

- Group 1 - Any Two Lab Sciences (PHYS 1111, PHYS 1111L required and CHEM 1211, CHEM 1211L recommended) *See Note 2 for PHYS 1111, PHYS 1111L **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits** recommended for Area D– **See Note 2**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Group 2 - MATH 2240 - Survey of Calculus **3 Credits**

Area E: Social Sciences

- Group 1 - American Context **3 Credits**

- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits** recommended for Area E– **See Note 1**
- Group 4 - Cultures and Societies **3 Credits**

Area F:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- SURV 2200 - Construction Measurements **4 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MGNT 3205 - Management Information Systems **3 Credits**

Major-CM Courses

- ECON 1101 - Introduction to Economics **3 Credits** (if needed)
- PHYS 1111 - Introductory Physics I **3 Credits** (If Needed)
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits** (If Needed)
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- CM 1000 - Orientation to Construction and Development **2 Credits**
- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**
- CM 3040 - Building Information Modeling Applications I **3 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**
- CM 3180 - Mechanical and Electrical Building Systems **4 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3500 - Building Codes **2 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4710 - Construction Safety **4 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**
- CM 4900 - Capstone Project **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- Concentration required (see choices below) **21-22 Credits**

General Concentration

- CM 3210 - Applied Structures **4 Credits**
- CM 3260 - Temporary Structures **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**

- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4800 - Construction Management Technique **3 Credits**

Land Development Concentration

- CM 3310 - Introduction to Development **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 4620 - Development Process II **3 Credits**

Specialty Concentration

- CM 3280 - Building Mechanical and Electrical Codes and Loads **4 Credits**
- CM 3480 - Mechanical and Electrical Systems Estimating **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 3190 - Sustainable Construction **3 Credits**
- CM 4480 - Design/Build MEP Systems **4 Credits**

Facilities Management

- CM 3190 - Sustainable Construction **3 Credits**
- CM 3290 - Facilities Management **4 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**
- CM 4190 - Sustainable Operation & Maintenance **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Heavy Construction Management Concentration

- CM 3160 - Construction Equipment **3 Credits**
- CM 3170 - Heavy Construction Practices **4 Credits**
- CM 3230 - Heavy Materials & Temporary Structures **4 Credits**
- CM 3440 - Heavy Estimating **4 Credits**

- CM 4230 - Soils & Earthmoving **4 Credits**
- CM 4560 - Construction Project Management **3 Credits**

Degree Program Total: 128

Note:

Note 1*: If ECON 1101 was taken to satisfy Area E, Group 3, a 3-hour Construction Elective can be substituted.*

Note 2*: If PHYS 1111 , PHYS 1111L were taken to satisfy Area D, Lab Science, a 4-hour Construction Elective can be substituted.*

Electrical Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
  or
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits** and
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
  or
- BIOL 2107 - Principles of Biology I **3 Credits** and
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**

Major Courses

- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1101 - Circuits I **4 Credits**
- ECET 1200 - Digital I **4 Credits**
- ECET 2111 - Circuits II **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3220 - Digital III **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3500 - Survey of Electric Machines **4 Credits**
- ECET 3600 - Test Engineering **4 Credits**
- ECET 3620 - Signals and Systems Analysis **4 Credits**
- ECET 4610 - Control Systems **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits** **
- EET Electives **13 Credits**

Degree Program Total: 128

Note:

* PHYS 1111, PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.

EET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

EET Electives

Students may wish to focus their EET electives in a particular area of Electrical Engineering Technology. Suggested choices in the areas of biomedical, communications, digital, power, and telecommunications are listed below:

Biomedical

- ECET 3020 - Biomedical Instrumentation **4 Credits**
- ECET 3030 - Biomechanics **4 Credits**
- ECET 4010 - Virtual Biomedical Instrumentation **4 Credits**
- ECET 4020 - Biomedical Imaging **4 Credits**
- ECET 4030 - Bioinformatics and Telemedicine **4 Credits**
- ECET 4040 - Biometrics **4 Credits**
- ECET 4050 - BMET Capstone **4 Credits**

Communications

- ECET 4320 - Active Filters **4 Credits**
- ECET 4330 - Audio Technology **4 Credits**
- ECET 4420 - Communications Circuit Applications **4 Credits**
- ECET 4431 - Wireless Communications Systems **4 Credits**
- ECET 4432 - Fiber-optic Communications Systems **4 Credits**
- ECET 4450 - RF Electronics **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

Digital

- ECET 3640 - Introduction to Systems Engineering and Robotics **4 Credits**
- ECET 3701 - Embedded PCs **4 Credits**
- ECET 4630 - Digital Signal Processing **4 Credits**
- ECET 4710 - Network Programming and Interfacing **4 Credits**

- ECET 4720 - Distributed Microcontrollers and PCs **4 Credits**
- ECET 4730 - VHDL and Field Programmable Gate Arrays **4 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**

Power

- ECET 4510 - Power System Analysis **4 Credits**
- ECET 4520 - Industrial Distribution Systems, Illumination, and the NEC **4 Credits**
- ECET 4530 - Industrial Motor Control **4 Credits**
- ECET 4540 - Introduction to Power Electronics **4 Credits**
- ECET 4560 - Electric Drives **4 Credits**

Telecommunications

- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**

Electrical Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- MATH 2254 - Calculus II **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- One hour from Area A Math
- One hour from Area D Math

Requirements

- EE 1000 - Foundations of Electrical Engineering **2 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- EE 2302 - Circuit Analysis II **3 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EE 3501 - Embedded Systems **4 Credits**
- EE 3605 - Electromagnetics **3 Credits**
- EE 3701 - Signals and Systems **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 3702 - Communication Systems **3 Credits**
- EE 3601 - Electric Machines **4 Credits**

- EE 4201 - Control Systems **4 Credits**
- EE 4701 - Professional Practice **3 Credits**
- EE 3/4XXX - Technical Electives **9 Credits**
- EE 3/4XXX - Engineering Science Elective **3 Credits**
- EE 4800 - Senior Project **4 Credits**
- Math Elective - Math above 2335 **3 Credits**

Degree Program Total: 129

The Electrical Engineering degree requires a grade of "C" or better in all EE and ENGR courses applied to degree requirements.

Environmental Engineering Technology, BS

Requirements

Area A:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B:

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C:

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**

- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E:

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F:

Core related to major.

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- CET 2110 - Problem Solving Methods in CET **3 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**

Additional Requirements

- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3110 - Construction Materials and Sustainability **3 Credits**
- CET 3110L - Construction Materials Lab **1 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- CET 3120L - Plan Reading and Take Offs Lab **1 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3130L - Fluids and Hydraulics Lab **1 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3310L - Water Treatment and Distribution Lab **1 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 3320L - Wastewater Collection and Treatment Lab **1 Credits**
- CET 3410 - Soil Properties and Site Exploration **3 Credits**
- CET 3410L - Soil Properties Lab **1 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**
- CET 4320 - Unit Operations in Environmental Engineering **4 Credits**
- CET 4330 - Solid Waste Management **3 Credits**

- CET 4110 - Ethics of Engineering **1 Credits**
- CET 4120 - Senior Design and Engineering Documentation **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- MATH MAJOR COURSES: Excess from AREA A AND D **2 Credits**
- CM 4710 - Construction Safety **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

Major Electives:

Take minimum of 6 hours from major electives listed below:

- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MET 3400 - Thermodynamics and Heat Transfer **3 Credits**
- SET 3240 - Hydraulic Structures **3 Credits**
- BIOL 3300K - Ecology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- CET 4340 - Air Pollution Control **3 Credits**

Degree Program Total: 123

EvET students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

Environmental Science, B.S.

Core Requirements

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- STS 2400 - Science, Technology, and Society **2 Credits**

- COMM 2400 - Public Speaking **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

Environmental Science majors MUST take the courses listed below to satisfy prerequisites for the major courses.

- MATH 2253 - Calculus I **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Environmental Science Major Requirements

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**

- BIOL 3000K - Genetics **4 Credits**
- BIOL 3300K - Ecology **4 Credits**
- BIOL 4200K - Zoology OR BIOL 4440K - Botany **4 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- ENVS 4300 - Environmental Ethics **3 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 4500 - Environmental Science Internship **3 Credits**
- Environmental Science Electives (see approved courses below) **12 Credits**

Environmental Science Electives (12 semester hours from the list below)

- BIOL 3100K - Microbiology **4 Credits**
- BIOL 3250K - Ecosystem Ecology **4 Credits**
- BIOL 3500 - Biostatistics **3 Credits**
- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3700K - Ichthyology **4 Credits**
- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CET 3310 - Water Treatment and Distribution **2 Credits**
- CET 3320 - Wastewater Collection and Treatment **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4330 - Solid Waste Management **3 Credits**
- CHEM 3100K - Analytical Chemistry **5 Credits**
- CHEM 3200K - Atmospheric Chemistry **3 Credits**
- CHEM 3300K - Instrumental Analysis **4 Credits**
- SURV 2110 - Introduction to Mapping **4 Credits**
- ENVS 3150K - Environmental Toxicology **4 Credits**
- ENVS 3250 - Natural Resource Management **3 Credits**
- ENVS 3450 - Conservation Biology **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**

Degree Program Total: 121

Industrial Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

Area D

- Sciences - Lab Science* Note 1 **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits** * Note 2
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Major Courses

- IET 1000 - Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3433 - Product and Process Costing **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4451 - Systems Simulation **3 Credits**
- IET 4475 - Senior Project **3 Credits**
- IET 4810 - Ethics and Safety **1 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**
- Free Electives **6 Credits**

IET Electives (9 semester hours from the list below)

- IET 3320 - Advanced Logistics **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4111 - Design of Experiments **3 Credits**
- IET 4121 - Advanced Topics in Quality Assurance **3 Credits**
- IET 4478 - Senior Internship **3 Credits**

Degree Program Total: 128

Note 1 - Physics I and Physics II are preferred Area D Sciences, however, any Lab Sciences from the approved list is permissible.

Note 2 – Chemistry I is the preferred Area F Science, however, any Lab Science from the approved list is permissible.

A grade of "C" or better is required in all courses used in the major prescribed for the bachelor degree program.

Concentration in Logistics

The primary objective of the Concentration in Logistics is to provide training and education to students interested in entering the Supply Chain industry.

Required Courses

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**

- IET 3511 - Sustainability Engineering **3 Credits** or
- IET 3620 - Warehousing Systems **3 Credits**

- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

Concentration in Quality Principles

The primary objective of the Concentration in Quality Principles is to provide training and education to students interested in quality system principles, methodology, elements and standards.

Required Courses:

- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Total: 21

Students who successfully complete the Concentration with a grade of "C" or better in each course will be awarded a Green Belt Certificate.

Information Technology, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

AREA C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2240 - Survey of Calculus or MATH 2253 - Calculus I **3 Credits**
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112K - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits** OR
- IET 2227 - Introduction to Statistics **3 Credits**
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- IT 1324 - Advanced Programming Principles **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits** OR
- MATH 2345 - Discrete Mathematics **3 Credits**
- Carryover credit from Area A Math **1 Credit**

Requirements

- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- CSE 3153 - Database Systems **3 Credits**
- IT 3123 - Hardware/Software Concepts **3 Credits**
- IT 3203 - Introduction to Web Development **3 Credits**
- IT 3223 - Software Acquisition and Project Management **3 Credits**
- IT 3423 - Operating Systems Concepts & Administration **3 Credits**
- IT 3883 - Advanced Applications Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4423 - Unix/Linux **3 Credits**
- IT 4683 - Management of Information Technology and Human Computer Interaction **3 Credits**
- IT 4723 - IT Policy and Law **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4983 - IT Capstone **3 Credits**
- Free Electives **7 Credits**
- Concentration or Technical Electives (see listing below) **12 Credits**

Degree Program Total: 122

Tracks

Choose one of the tracks below and complete 3 of their courses. The 4th elective can be from the same or different track.

Enterprise Systems Track

- IT 4203 - Advanced Web Development **3 Credits**
- IT 4153 - Advanced Database **3 Credits**
- IT 4333 - Network Configuration & Administration **3 Credits**
- IT 4673 - Virtual IT Systems **3 Credits**
- IT 4713 - Business Intelligence Systems **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Information Assurance & Security Track

- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**
- IT 4853 - Computer Forensics **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Health Information Technology Track

- IT 3503 - Foundations of Health Information Technology **3 Credits**
- IT 4513 - Electronic Health Record Systems **3 Credits**
- IT 4523 - Clinical Processes and Workflows: Analysis and Redesign **3 Credits**
- IT 4533 - Health Information Security and Privacy **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Mobile and Web Track

- CSE 3203 - Overview of Mobile Systems **3 Credits**
- IT 4203 - Advanced Web Development **3 Credits**
- IT 4213 - Mobile Web Development **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4903 - Special Topics in Information Technology **3 Credits**

Information Technology, BS (Online) WebBSIT

WebBSIT Curriculum

- ENGL 1101 - English Composition I **3 Credits**

- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take one course from the Literature Group **3 Credits**
- Area C Group 2 - Take one course from the Art and Culture Group **3 Credits**
- Area D - Any two lab-based science courses **8 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**

Area F (18 Credits)

- WBIT 1100 - Introduction to Information Technology **3 Credits**
- WBIT 1310 - Programming and Problem Solving **3 Credits**
- MATH 1401 - Intro to Statistics **3 Credits** (Available from WebBSIT participating institutions or through eCore®)
- WBIT 2000 - The Enterprise and IT **3 Credits**
- WBIT 2300 - Discrete Mathematics for IT **3 Credits**
- WBIT 2311 - Programming and Problem Solving II **3 Credits**

Required Core Courses (42 Credits)

- WBIT 3010 - Technical Communication **3 Credits**
- WBIT 3110 - Systems Analysis and Design **3 Credits**
- WBIT 3111 - Information Technology Project Management **3 Credits**
- WBIT 3200 - Database Design, Development and Deployment **3 Credits**
- WBIT 3400 - Introduction to Multimedia **3 Credits**
- WBIT 3410 - Web Applications Development **3 Credits**
- WBIT 3500 - Architecture and Operating Systems **3 Credits**
- WBIT 3510 - Data Communications and Networking **3 Credits**
- WBIT 3600 - Introduction to E-Commerce **3 Credits**
- WBIT 4020 - Professional Practices and Ethics **3 Credits**
- WBIT 4030 - Senior Project **3 Credits**
- WBIT 4112 - Systems Acquisition, Integration and Implementation **3 Credits**
- WBIT 4120 - Human-Computer Interaction **3 Credits**
- WBIT 4520 - Information Security **3 Credits**

Concentration/Electives (18 Credits)

- WBIT 4601 - Customer Relationship Management **3 Credits**
- WBIT 4602 - IT Strategy Seminar **3 Credits**
- WBIT 4610 - IT Policy and Law **3 Credits**
- Free Electives (not within the WebBSIT) - **9 Credits**

Total Required Hours: 120 Credits

International Studies, BS

By offering an International Studies degree with a required minor, SPSU seeks to produce graduates who not only understand the political and economic processes of globalization, but also possess field-specific skills and knowledge that will allow them to deal with the new demands of the global economy. Companies that will employ our graduates will be global ones, so it is necessary for their employees to understand the political, economic, cultural, as well as technical contexts in which their companies function. The International Studies degree will prepare graduates for graduate study in a number of possible fields and for employment in:

- Government
- Intelligence
- International business
- Pre-law
- Public policy
- The military
- The non-profit sector
- The transportation industry
- The travel industry

Requirements

Core Areas A through E

Area A: Essential Skills (9 credits)

Grade of C or better requied in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:
- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following (language course recommended):
- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture = 3 credits; lab = 1 credit; K-course=4 credits, including lab).

Choose TWO science courses with lab:
- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits):

Take ALL of the following:
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
  Or 6 credit hours of any non-English language at an equivalent level.
- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

Required Courses in Major (29 credits):

Grade of C or better required. Take ALL of the following:

- IS 1000 - International Studies Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
  Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**
  To be taken in one of the last two terms before graduation (taught Spring only):
- IS 4800 - International Studies Capstone **3 Credits**

Directed International Electives (9 credits):

Grade of C or better required. Choose THREE of the following:

Take THREE of the following:
- ECON 2106 - Principles of Microeconomics **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4600 - International Studies Internship **3 Credits**
- IS 4000 - Regional Studies - General **3 Credits**
  or any Regional Studies (IS 400X) not used to satisfy Required Courses in the Major
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**

or any 3000- or 4000- level SPAN
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  OR any IS special topics course. Special topics courses in HIST, POLS, PSYC may be used with topic-specific departmental approval.

Minor 15-18 Hours

International Studies majors must complete at leat one of the minors offered at SPSU (in any department or program). Department policy requires that at least 9 hours in a minor not be used to meet any other reqirement *except free electives*. University policy requires that no hours used in Core Areas A-E may used toward any other requirement.

Free Electives

Additional credit hours to bring the minimum total credits to bring the total hours up to the 120 required for graduation. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Degree Program Total: 120

Mathematics, BS

Requirements

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- CSE 1301 - Computer Science I **4 Credits**
- CSE 1302 - Computer Science II **4 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
- MATH 2253 - Calculus I **4 Credits**

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Mathematics Electives (9 Credits)

Any mathematics course numbered 2300 or above, excluding those for which dual credit is not allowed.

Guided Electives (20 Credits)

May include additional mathematics courses or other courses chosen in consultation with an advisor. May not include mathematics courses numbered less than 2000, or courses for which dual credit is not allowed.

Degree Program Total: 121

Mathematics Second Major

A student completing the B.S. degree in a field other than Mathematics may receive a second major in Mathematics at the same time to accompany that degree by completing the following courses. Note that additional courses, which are the prerequisites to these courses, are required by implication.

Mathematics Second Major Requirements

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2345 - Discrete Mathematics **3 Credits**
- MATH 3310 - Introduction to Advanced Mathematics **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- MATH 3320 - Introductory Real Analysis I **4 Credits**
- MATH 3321 - Introductory Real Analysis II **4 Credits**
- MATH 4407 - Vector Analysis **3 Credits**
- MATH 4440 - Abstract Algebra **4 Credits**
- MATH 4451 - Capstone Mathematics Project **3 Credits**

Second Degree in Mathematics

Students who receive a degree from SPSU in a field other than Mathematics may receive a B.S. with a major in Mathematics by completing all the requirements for the Mathematics degree. The same courses may be used to fulfill requirements for both degrees, but there must be at least 30 semester hours used to fulfill the requirements for the Mathematics degree which are not used to fulfill the requirements for any other degree.

Mechanical Engineering Technology, BS

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended for Area E-3)
- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (the extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (the extra hour is applied to Major Req.)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- ECET 3000 - Electrical Principles **4 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- EDG 1212 - Engineering Graphics II **4 Credits**
- ENGT 2124 - Statics with Applications **3 Credits**

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- MET 3126 - Engineering Dynamics with Applications **3 Credits**

- ENGR 3122 - Dynamics **3 Credits**
- ENGT 3124 - Strength of Materials with Applications **3 Credits**

- ENGR 3132 - Strength of Materials Lab **1 Credits**

- ENGR 3131 - Strength of Materials **3 Credits**
- MET 3101 - Fluid Mechanics Principles & Applications **4 Credits**
- MET 1000 - Mechanical Engineering Technology Orientation **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MET 1311 - Manufacturing Processes **3 Credits**
- MET 1321 - Machining and Welding **2 Credits**
- MET 2322 - Metrology and CNC Machining **3 Credits**
- MET 3132 - Engineering Materials **4 Credits**
- MET 3401 - Thermodynamics I **3 Credits**
- MET 4141 - Machine Design I **4 Credits**
- MET 4421 - Instruments and Controls **4 Credits**
- MET 3501 - Engineering Computation Using MATLab **3 Credits**

Select one of the following four courses (3 Credits)

- MET 3123 - Dynamics of Machines **3 Credits**
- MET 3331 - Tool Design **3 Credits**
- MET 3402 - Thermodynamics II **3 Credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 Credits**
- MET XXXX - Major Electives (For Concentration) **12 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129

Note:

Note 1. MET majors are required to earn an overall 2.0 average in all courses designated as MET and ENGR.

Note 2. PHYS 1111, PHYS 1111L and PHYS 1112, PHYS 1112L may be substituted for PHYS 2211, PHYS 2211L and PHYS 2212, PHYS 2212L .

Note 3. The Free Elective may not be MATH 1111 .

Mechanical Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**

- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World - 3 credits
- Group 2 - Art and Culture of the World - 3 credits

Area D

- MATH 2254 - Calculus II **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits   *ECON 2107 is recommended**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
  One credit from MATH 1113 & MATH 2253 will be added to Area F to complete the 18 hour requirement.

Major Courses

- ME 1001 - Introduction to Mechanical Engineering **2 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ME 1311 - MATLAB for Engineers with Applications **3 Credits**
- Math or Science Electives **3-4 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ME 3101 - Materials Science and Engineering **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ME 4250 - Computer Aided Engineering **3 Credits**
- ENGR 4402 - Engineering Ethics **1 Credits**
- ME 4403 - Heat Transfer and Thermodynamics Lab **1 Credits**
- ME 3410 - Thermodynamics **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ME 3440 - Heat Transfer **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 4141 - Machine Design I **3 Credits**
- ME 4201 - Senior Design I **1 Credits**
- ME 4202 - Senior Design II **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**
- MATH 2255 - Calculus III **4 Credits**
- Approved Technical Electives **9 Credits**

Degree Program Total: 130

The Mechanical Engineering degree requires a grade of "C" or better in all ME and ENGR courses applied to degree requirements.

Technical Electives

Technical Electives can be any non-required 3000 and/or 4000 level courses from ME, including Special Topics (ME 3903 or ME 4903) and Undergraduate Research (ME 4801, ME 4802, and ME 4803).   Additionally MTRE 3710 and SYE 3320 are allowed. Students may focus their technical electives in Aerospace Engineering (SYE 3801, SYE 3802, SYE 3803, SYE 4801, SYE 4802, SYE 4803) or Nuclear Engineering (SYE 3501, SYE 3502, SYE 4501, SYE 4502, or SYE 4503).

Some ENGR, EE, MTRE, or SYE may be approved for technical electives by the program coordinator or the department chair.

**If student does not take ECON 2107 for Core E-3, the student must take SYE 3320 - Engineering Economics and Decision Analysis as a Technical Elective.

Mechatronics Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C1 - Course in English Literature **3 Credits**
- Area C2 - Course in Art and Culture **3 Credits**

Area D

- MATH 2254 - Calculus II **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

One hour from Area A Math

One hour from Area D Math

- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**

Requirements

- MTRE 1000 - Introduction to Mechatronics Engineering **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- Math Elective **3 Credits**
- EDG 1211 - Engineering Graphics I **3 Credits**
- MTRE 2610 - Engineering Algorithms and Visualization **3 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- MTRE 3710 - Mechatronics Engineering Fundamentals **4 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 Credits** (Recommended Area E-3)
- EE 4201 - Control Systems **4 Credits**
- MTRE 4000 - Advanced Controls **3 Credits**
- MTRE 4200 - Robotics Analysis and Synthesis **4 Credits**
- MTRE 4400 - Mechatronics System Design **4 Credits**

Degree Program Total Hours: 131

The Mechatronics Engineering degree requires a grade of "C" or better in all MTRE, EE, ME and ENGR courses applied to degree requirements.

Physics, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**

- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Choose One Course from the Literature Group **3 Credits**
- Group 2- Choose One Course from the Art and Culture Group   **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits**
  Choose Any Two Lab Science Courses for a total of **8 Credits**
- ASTR 1000K - Introduction to the Universe **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science   **3 Credits**
- Group 4- Cultures and Societies   **3 Credits**

Area F

- PHYS 1211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**
- PHYS 4430 - Capstone Physics Project **1 Credits**
- PHYS 4250 - Quantum Theory of Two-State Systems **2 Credits**
- Directed Electives approved by the program **9 - 15 Credits**
- Upper Division Physics Electives/Concentrations **4 - 10 Credits**

Degree Program Total: 121

A Second Degree in Physics

Students who are earning B.S. degrees in other fields at Southern Polytechnic State University may also earn a second major in Physics.

SPSU students who wish to earn a second major in physics will be required to take the following 22 hours of course work:

Second Degree Requirements

- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410K - **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**

Physics, Electrical Engineering Concentration, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- PHYS 1211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**

- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EE 3301 - Circuits Analysis I **4 Credits**
- EE 2501 - Digital Logic Design **4 Credits**
- EE 2401 - Semiconductor Devices **3 Credits**
- EE 3705 - Signals and Systems **3 Credits**
- EE 3401 - Engineering Electronics **4 Credits**
- EE 4201 - Control Systems **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- Free Electives **4 Credits**

Degree Program Total: 121

Physics, Mechanical Engineering Concentration, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Requirements

- TCOM 2010 - Technical Writing **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3410K - Electronics Laboratory **2 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**
- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4240 - Solid State Physics **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- Free Electives **2 Credits**

- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

Degree Program Total: 121

Concentration in Mechanical Engineering

- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
- ENGR 3131 - Strength of Materials **3 Credits**
- ENGR 3132 - Strength of Materials Lab **1 Credits**
- ENGR 3343 - Fluid Mechanics **3 Credits**
- ENGR 3345 - Fluid Mechanics Laboratory **1 Credits**
- ENGR 2501 - Material Science **3 Credits**
- ME 3201 - Product Realization **2 Credits**
- ENGR 3125 - Machine Dynamics & Vibrations **3 Credits**
- ME 3501 - Dynamic Systems & Control Theory **3 Credits**
- ME 4501 - Vibrations & Controls Lab **1 Credits**

Physics, Teacher Education Concentration, BS

The bachelor's degrees in mathematics or science with the Teacher Education track provides students with a strong foundation in the discipline, giving them maximum flexibility with their degrees. Adding the Teacher Education track can give students immediate job possibilities.

The Teacher Education Program at SPSU provides students with strong, mentored experiences in the schools, a thorough knowledge of the teaching strategies and research on learning science and mathematics, and a nationally renowned teacher preparation program. This program allows students to build confidence in working with a variety of students in multiple school settings, and prepares them for a successful career in teaching mathematics or science in the middle school or high school.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**

- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4- Cultures and Societies **3 Credits**

Area F

*NOTE: To complete the required 18 credit hrs, 1 credit hr from the MATH in Area A & Area D will be applied

- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Major Program of Study

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- PHYS 2213 - Introduction to Thermal and Modern Physics **2 Credits**
- PHYS 3210 - Mechanics I **4 Credits**
- PHYS 3220 - Electromagnetism I **3 Credits**
- PHYS 3410 - Electronics Laboratory **2 Credits**
- PHYS 3500K - Introduction to Computational Physics **3 Credits**
- PHYS 3710 - Modern Physics **4 Credits**

- PHYS 3720L - Modern Physics Laboratory **1 Credits**
- PHYS 4210 - Quantum Physics **4 Credits**
- PHYS 4230 - Thermal Physics **4 Credits**
- PHYS 4410K - Advanced Physics Laboratory **2 Credits**
- Physics Electives **4 Credits**

Education Courses

- EDUC 1101 - UTeach Step 1 **1 Credits**
- EDUC 1102 - UTeach Step 2 **1 Credits**
- EDUC 1103 - UTeach Integrated Steps 1 and 2 **2 Credits**
- EDUC 2010 - Knowing and Learning **3 Credits**
- EDUC 2020 - Classroom Interactions **3 Credits**
- EDUC 4030 - Project Based Instruction **3 Credits**
- RSCH 3610 - Research Methods **3 Credits**
- STS 3347 - Perspectives on Science and Math **3 Credits**
- EDUC 4401 - Apprentice Teaching Seminar **1 Credits**
- EDUC 4406 - Apprentice Teaching **6 Credits**

Degree Program Total: 120

Political Science, BS

There is a growing need for graduates in political science. The acquisition of methodological skills, coupled with an understanding of the political process at local, state, national and international levels, allows for employment in a variety of public and private venues where research techniques are highly prized. As well, the communication, analysis, and critical reasoning skills that our graduates obtain place them well in a competitive job market, where continual learning is essential and interpersonal and cross-cultural competencies are greatly needed.

While there are other political science programs offered in Georgia, SPSU's program will be unique in several respects:

- The SPSU program is highly quantitative in focus, offering students three additional quantitative courses in political science research methods and analysis beyond the norm required in other political science programs.
- The SPSU program offers students various inter-disciplinary course options through its Directed International Electives module.
- The SPSU program further establishes a strong international focus by encouraging students to become proficient in a second language.

Students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace. Graduates with a bachelor's degree in political science find positions as committee staffers, budget analysts, communications consultants, research/policy analysts, corporate public affairs advisors, foreign service officers, writers/authors/political commentators, journalists, foundation staffers, lobbyists, marketing analysts, or public opinion analysts. Additionally, SPSU's program's training in the development of research, critical thinking, and communication skills will open opportunities in for-profit/non-profit business settings, international and U.S.-based non-governmental organizations and foundations. Graduates of SPSU's BS in Political Science will be more than qualified to take advantage of the local, regional, national, and international employment opportunities offered by

metro Atlanta and the State of Georgia, as well as to pursue post-baccalaureate educational opportunities in either political science or the field of law.

Requirements

All students must take:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Core Areas A-E

Area A: Essential Skills (9 credits)

Grade of C or better required in courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**

- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following (language recommended):

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**

Area D: Science and Math (12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**

- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (Minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG *may* need to take HIST 2911: U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation. Please check with your advisor.

Choose ONE of the following (POLS 1101 American Government is required in Area F and may not be used here):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE of the following (ECON 1101 Introduction to Economics is required in Area F and may not be used here):

- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies Global Perspectives overlay. Choose ONE of the following (POLS 2401 is required in Area F and may not be used here):

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits)

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**
  or 6 credits of any non-English language at an equivalent level
- ECON 1101 - Introduction to Economics **3 Credits**
- POLS 1101 - American Government **3 Credits**
- POLS 2100 - Introduction to Research Methods **3 Credits**
- POLS 2401 - Global Issues **3 Credits**

Required Courses in Major (36 credits):

Grade of C or better required.

- POLS 3001 - Comparative Politics **3 Credits**
- POLS 2800 - Research Design **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**
- POLS 3801 - Political Behavior **3 Credits**
- POLS 4100 - Applied Methodology **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
  Choose ONE of the following:
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
  Choose ONE Regional Studies Course:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**

- IS 4007 - Regional Studies/Africa **3 Credits**
  In one of final two semesters:
- POLS 4801 - Capstone: Political Science Practicum **3 Credits**

Directed International Electives: (12 credits)

Grade of C or better required. Take any FOUR of the following courses:

- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  Up to 6 additional credits in Regional Studies:
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

Free Electives (12 credits):

Any college-level credit not used above may be applied here. *Free electives may be used toward a minor and are exempt from the 9 hour rule.*

Degree Program Total: 121

Psychology, BS

Southern Polytechnic State University's Bachelor of Science degree in Psychology provides students a program of study in modern psychology. Specifically, the program embraces a strong international component with a multi-disciplinary curriculum that provides a balanced, career-based education in psychology with a wide range of skills and practical knowledge. The concentrations offered cover the subject matter from seventeen major subfields coupling science and practice. This broad spectrum provides a rich context so that students who complete the program have the knowledge, skills, and real-world context to be productive and flexible in a rapidly changing workplace.

Career opportunities for graduates with a B.S. in Psychology include: employment counselors, corporate counselor trainees, interviewers, personnel analysts, systems analysts, rehabilitation assistants, mental health assistants, probation officers and writers. Additionally, training in the development of research and writing skills will open opportunities in profit/non-profit business settings, public affairs, public health, sales and administrative support.

The concentrations offered are:

- Engineering Psychology (involves the science of applying an understanding of human behavior interacting with the design of systems and products that improve human performance)
- Industrial/Organizational Psychology (involves the science of applying an understanding of human behavior with improving productivity and the workplace quality)
- Clinical and Counseling Psychology (involves the science of applying an understanding of human behavior with an emphasis on mental disorders and their treatment)

Requirements

Core Areas A-E

Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the SPSU core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

C-1: Literature (3 credits)

Choose ONE of the following:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

C-2: Humanities (3 credits)

Choose ONE of the following:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

D-1: Lab Science (8 credits)

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K courses=4 credits, including lab). Biology recommended.

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

D-2: Math (Minimum of 3 credits)

- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E: Social Sciences (12 credits)

E-1: American Perspectives (3 credits)

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia History and Constitution. Students who fulfill this

requirement with transfer credit from outside the USG will need to take U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

E-2: Historical Perspectives (3 credits)

Choose ONE of the following:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

E-3: Behavioral Science Perspectives (3 credits)

Choose ONE course (sociology recommended):

- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

E-4: Global Perspectives (3 credits)

Satisfies the Global Perspectives overlay. Choose ONE of the following:

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Core Area F (18 credits)

- COMM 2030 - Research for the Humanities & Social Sciences **3 Credits**
- PSYC 2273 - Foresic Psychology **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
  (or 3 hours of PSYC 1XXX or 2XXX elective credit if PSYC 1101 has been used in Area E-3)
- PSYC 2011 - Cognitive Psychology **3 Credits**
- PSYC 2270 - Engineering Psychology **3 Credits**
- PSYC 2271 - Clinical and Counseling Psychology **3 Credits**

Required Courses in Major (32 credits):

Grade of C or better required; take all of the following:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- PSYC 1000 - Orientation to Psychology **2 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 2401 - Psychology of Diversity **3 Credits**
- PSYC 3000 - Junior Seminar **3 Credits**
- PSYC 3020 - Physiological Psychology **3 Credits**
- PSYC 3031 - Experimental Psychology **4 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4050 - History and Systems of Psychology **3 Credits**
- PSYC 4800 - Psychology Capstone Seminar **3 Credits**

Concentrations

Choose and complete one of the concentrations below:

Engineering Psychology (28 credits)

Required Courses (22 credits):

Grade of C or better required; take all of the following:

- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
  The following must be taken in the order listed:
- CSE 1301J - Programming & Problem Solving I **4 Credits**
  (be sure it's 1301**J**)
- IT 1324 - Advanced Programming Principles **4 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**

Free Electives (6 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Industrial / Organizational Psychology (28 credits)

Required Courses (12 credits):

Grade of C or better required; take all of the following:

- MGNT 4115 - Human Resource Management **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

Concentration Electives (9 credits):

Grade of C or better required; choose THREE of the following:

- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**

Free Electives (7 credits)

Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Clinical and Counseling Psychology (28 credits)

Required Courses:

Grade of C or better required; take all of the following:

- PSYC 3015 - Theories of Personality **3 Credits**
- PSYC 3230 - Abnormal Psychology **3 Credits**
- PSYC 3301 - Psychological Testing **3 Credits**

Concentration Electives (9 credits):

Grade of C or better required; choose THREE from the following:

- PSYC 2273 - Foresic Psychology **3 Credits**
- PSYC 3010 - Educational Psychology **3 Credits**
- PSYC 3040 - Motivation and Emotion **Credits**
- PSYC 3305 - Developmental Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4130 - Psychology of Aging **3 Credits**
- PSYC 4220 - Psychoactive Drugs, Behavior, and Society **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

Free Electives (10 credits)

 Credit from any college-level course may be applied here. *Free elective hours may be used toward an additional minor and are exempt from the 9 hours rule.*

Degree Program Total: 120

Software Engineering, BS

AREA A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits**

AREA B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World **3 Credits**
- Group 2 - Art and Culture of the World **3 Credits**

AREA D

- MATH 2254 - Calculus I **4 Credits**
- Take any 2 of the courses below (with labs):

- ASTR 1000K - Introduction to the Universe **4 credits**
- ASTR 1010K - Introduction to the Universe II **4 credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107K - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108K - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211K - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II **3 Credits**
- CHEM 1212K - Principles of Chemistry II Lab **1 Credits**
- GEOL 1101K - Introduction to Geosciences **4 credits**

- PHYS 2211 - Principles of Physics I **3 credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 credit**
- PHYS 2212K - Principles of Physics II **3 credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 credit**

NO CREDIT FOR PHYS 1111K or PHYS 1112K.

In lieu of PHYS 2211, 2211L, an additional lab science course may be taken to form a sequence with one of the science courses in area D.

AREA E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- ECON 2107 - Introduction to Economic Analysis **3 credits** (Note: If area E is transferred, student must take ECON 2107 in lieu of free electives.)
- Group 4 - Cultures and Societies **3 Credits**

AREA F

- CSE 1301C - Programming & Problem Solving I **4 Credits**
  OR
- CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C - Programming & Problem Solving II **4 Credits**
  OR
- CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 2300 - Discrete Structures for Computing **3 Credits**
- CSE 3642 - Professional Practices and Ethics **2 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Required Courses

- TCOM 2010 - Technical Writing **3 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits** (see note below)
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Sciences **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- CSE 1002 - Introduction to the Computing Disciplines **2 Credits**
- CSE 1301C or CSE 1301J - Programming & Problem Solving I **4 Credits**
- CSE 1302C or CSE 1302J - Programming & Problem Solving II **4 Credits**
- CSE 3153 - Database Systems **3 Credits**
- CS 3224 - Computer Organization & Architecture **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- CS 3243 - Operating Systems **3 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**

- SWE 3623 - Software Systems Requirements **3 Credits**
- SWE 3633 - Software Architecture & Design **3 Credits**
- SWE 3643 - Software Testing and Quality Assurance **3 Credits**
- SWE 4324 - User-Centered Design **4 Credits**
- SWE 4663 - Software Project Management **3 Credits**
- SWE 4713 - SWE Application Domain **3 Credits**
- SWE 4724 - Software Engineering Project **4 Credits**
- SWE Upper Level Electives - Choose 2 courses from the approved list, at least one must be an SWE course **6 Credits**
- Free Electives - (Excludes MATH 1111, PHYS 1111, 1111L and PHYS 1112, 1112L) **5 Credits**

Free Electives

Excludes Math 1111, PHYS 111K and PHYS 1112K.

Note:

A grade of "C" or better must be earned in all CSE, CS, SWE, CGDD, and IT courses applied to degree requirement.

Upper Level Electives

Choose any 2 courses - at least one must be an SWE course.

- SWE 3683 - Embedded Systems Analysis & Design **3 Credits**
- SWE 3843 - Embedded Systems Construction and Testing **3 Credits**
- SWE 4633 - Component-Based Software Development **3 Credits**
- SWE 4743 - Object-Oriented Development **3 Credits**
- SWE 4783 - User Interaction Engineering **3 Credits**
- CS 4243 - Systems Programming **3 Credits**
- CS 4253 - Distributed Computing **3 Credits**
- CS 4263 - Computer Networks **3 Credits**
- CS 4283 - Real-Time Systems **3 Credits**
- CS 4363 - Computer Graphics and Multimedia **3 Credits**
- CS 4523 - Artificial Intelligence **3 Credits**
- CS 4533 - Digital Image Processing **3 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- CGDD 4203 - Mobile and Casual Game Development **3 Credits**
- IT 4123 - Electronic Commerce **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**
- IT 4833 - Wireless Security **3 Credits**
- IT 4843 - Ethical Hacking for Effective Defense **3 Credits**

Degree Program Total: 127

Surveying and Mapping, BS

Requirements:

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to area F)
- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**
- Area C Group 1 - Take One Course From the Literature Group **3 Credits**
- Area C Group 2 - Take One Course From the Art and Culture Group **3 Credits**
- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to area F)
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**
- Math Elective - **3 Credits**
- Area D - Any Two Lab Sciences **8 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- Area E Group 1 - American Context **3 Credits**
- Area E Group 2 - World History **3 Credits**
- Area E Group 3 - Behavioral Science **3 Credits**
- Area E Group 4 - Cultures and Societies **3 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- IT 1113 - Programming Principles **3 Credits** or

- CET 3130 - Applied Fluid Mechanics and Hydraulics **2 Credits**
- CE 1000 - Orientation to Engineering and Surveying Professions **1 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- EDG 2160 - Civil Graphics and Computer Aided Drafting **3 Credits**
- CET 2200 - Introduction to Structures **4 Credits**
- CET 3510 - Traffic Analysis and Road Design **2 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 3120 - Cost Estimating and Scheduling in CET **3 Credits**
- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4410 - Surveying Computations and Adjustments **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- SURV 4415 - Geodetic Surveying Methods **4 Credits**

- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV Electives **4 Credits**
- Free Elective **3 Credits**

Degree Program Total: 129 hours

Note:

Surveying students are required to earn a grade of "C" or better in all courses required in the major and all courses used as electives.

PHYS 1111 and PHYS 1112 are required.

If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 1-2000 level courses or any Lab Science to fulfill the Area F requirement.

If you use PHYS 1111/PHYS 1112 in Area D then you may use 4 hours of either CET or SURV 3-4000 level courses or any Lab Science to fulfill the major requirement.

Systems Engineering, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 2253 - Calculus I **4 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1 - Literature of the World - **3 credits**
- Group 2 - Art and Culture of the World - **3 credits**

Area D

- MATH 2254 - Calculus II **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**

- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**
- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Area E

- Group 1 - American Context **3 Credits**
- Group 2 - World History **3 Credits**
- Group 3 - Behavioral Science **3 Credits**
- Group 4 - Cultures and Societies **3 Credits**

Area F

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CSE 1301E - C++ Programming for Engineers **4 Credits**
- CSE 1302E - Object Oriented C++ Programming for Engineers **4 Credits**
- MATH 2255 - Calculus III **4 Credits**

Systems Engineering Major

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 3312 - Linear Algebra **4 Credits**
- EE 2301 - Circuit Analysis I **4 Credits**
- ENGR 2214 - Engineering Mechanics – Statics **3 Credits**
- ENGR 3122 - Dynamics **3 Credits**
  or
- ME 3410 - Thermodynamics **3 Credits**
- SYE 2100 - Systems Analysis and Design **3 Credits**
- SYE 3320 - Engineering Economics and Decision Analysis **3 Credits**
- SYE 2600 - Applications of Probability **3 Credits**
- SYE 3100 - Systems Reliability and Maintainability **3 Credits**
- SYE 3120 - Contemporary Technological Systems: Design, Analysis, and Architecture **3 Credits**
- SYE 3200 - Human Machine Systems **3 Credits**
- SYE 3300 - Program Management **3 Credits**
- SYE 3400 - Engineering Optimization I: Deterministic Decision Models **3 Credits**
- SYE 3600 - Statistics with Applications **3 Credits**
- SYE 3700 - Manufacturing and Production Systems **3 Credits**
  or
- SYE 3710 - Logistics and Supply Chain Systems **3 Credits**
- SYE 4400 - Engineering Optimization II: Stochastic Decision Models **3 Credits**
- SYE 4500 - System Modeling and Simulation **3 Credits**
- SYE 4900 - System Design Project **3 Credits**
  or

- SYE 4803 - Aeronautics Project **3 Credits**
  Approved Technical Electives: **12 Credits**

Technical Electives

Technical Electives can be 3000 and/or 4000 level courses from SYE, SWE, MTRE, ME, CE, EE or MATH. Other courses may be approved by the department chair. Students may focus their technical electives in Aerospace Engineering or Nuclear Engineering.

Degree Program Total: 129

The Systems Engineering degree requires a grade of 'C' or better for any course with an ENGR or SYE prefix and ENGL 1101. A 'D' or better is required for any other course.

Technical Communication, BS

With our TCOM degree, you will learn much more than just how to use words effectively—you will have opportunities to learn document design, graphics, multimedia, web design, and video production as well as science and environmental writing, proposal writing, and medical communication.

Students in other majors can minor in technical communication through a range of campus-based and online course offerings.

Many TCOM courses are taught using a combination of on-site and online sessions that students with jobs especially appreciate. We make sure we offer enough late-afternoon and evening courses so that working students can make steady progress toward their degree.

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Group 1- Literature of the World **3 Credits**
- Group 2- Art and Culture **3 Credits**

Area D

- Any Two Lab Sciences **8 Credits**
- MATH 1113 - Pre-calculus **4 Credits**
  OR
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Area E

- Group 1- American Context **3 Credits**
- Group 2- World History   **3 Credits**
- Group 3- Behavioral Science **3 Credits**
- Group 4-Cultures and Societies **3 Credits**

Area F

Required Courses- 9 Credits
- TCOM 2010 - Technical Writing **3 Credits**
- TCOM 2020 - Introduction to the Professions **3 Credits**
- TCOM 2030 - Research in Technical Communication **3 Credits**

Choose Three- 9 Credits
- ARTS 2010 - Introduction to Drawing **3 Credits**
- COMM 2000 - Business Communication **3 Credits**
- COMM 2065 - Cross-Cultural Communication **3 Credits**
- COMM 2150 - Ethics and Communication **3 Credits**
- COMM 2170 - Introduction to Media Studies **3 Credits**
  Any programming language (recommended CSE 1301J)

Major Requirements

Upper Level Required Courses in the Major (18 Credits)

- ENGL 3100 - Rhetoric: History, Theory, and Practice **3 Credits**
- ENGL 4110 - Writing in Collaborative Environments **3 Credits**
- TCOM 3120 - Technical Communication: Theory and Practice **3-0-3 Credits**
- TCOM 3400 - Foundations of Design for the Web **3 Credits**
- TCOM 3430 - Foundations of Graphics **3 Credits**
- TCOM 4800 - Project Portfolio **3 Credits**

Additional Courses in Major (12 Credits)

- Take any ARTS, COMM, ENGL, or TCOM Course
- No more than 6 credits may be at the 2000 level.

- Up to 6 credits outside of the Department with departmental approval.
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Major Concentrations

Choose one concentration from the following: (Information Design or Digital Media and Graphics)

Information Design (15 Credits)

- TCOM 3020 - Proposal Writing **3 Credits**
- TCOM 3030 - Instructional Design **3 Credits**
- TCOM 3045 - Fundamentals of Information Design **3 Credits**
- TCOM 3070 - User Assistance **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 3245 - Analytics and Search Engine Optimization (SEO) for Communicators **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4120 - Usability Testing **3 Credits**

Digital Media and Graphics (15 Credits)

- ARTS 2010 - Introduction to Drawing **3 Credits**
- ARTS 3000 - Visual Thinking **3 Credits**
- ARTS 3170 - Digital Photography **3 Credits**
- TCOM 3145 - Social Media Integration **3 Credits**
- TCOM 4045 - Foundations of Multimedia **3 Credits**
- TCOM 4040 - Applied Graphics **3 Credits**
- TCOM 4170 - Film and Video Production **3 Credits**
- TCOM 4175 - Animation Design, 2D **3 Credits**
- TCOM 4400 - Advanced Design for the Web **3 Credits**

Degree Program Total: 121

For additional information about the B.S. program, contact the Digital Writing and Media Arts Department at 678-915-7202, or email to TCOM@spsu.edu. You can also visit our website at etcma.spsu.edu.

Telecommunications Engineering Technology, BS

Area A

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1113 - Pre-calculus **4 Credits** (extra hour is applied to Area F)

Area B

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C

- Area C Group 1 - Literature of the World **3 Credits**
- Area C Group 2 - Art and Culture of the World **3 Credits**

Area D

- MATH 2253 - Calculus I **4 Credits** (extra hour is applied to Area F)
- PHYS 2211 - Principles of Physics I **3 Credits** *
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits** *
- PHYS 2212 - Principles of Physics II **3 Credits** *
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits** *

Area E

- Area E Group 1 American Context **3 Credits**
- Area E Group 2 World History **3 Credits**
- Area E Group 3 Behavioral Science **3 Credits**
- Area E Group 4 Cultures and Societies **3 Credits**

Area F

- ECET 1101 - Circuits I **4 Credits**
- EDG 1210 - Survey of Engineering Graphics **2 Credits**
- TCOM 2010 - Technical Writing **3 Credits**
- MATH 2254 - Calculus II **4 Credits**
- MATH 2260 - Introduction to Probability and Statistics **3 Credits**

Major Courses

- ECET 1001 - Orientation **1 Credits**
- ECET 1012 - Design Fundamentals **2 Credits**
- ECET 1200 - Digital I **4 Credits**

- ECET 2111 - Circuits II **4 Credits**
- ECET 2300 - Electronics I **4 Credits**
- ECET 2210 - Digital II **4 Credits**
- ECET 2310 - Electronics II **4 Credits**
- ECET 3400 - Data Communications **4 Credits**
- ECET 3410 - High Frequency Systems **4 Credits**
- ECET 3810 - Applications of C++, JAVA and HTML **3 Credits**
- ECET 4820 - Communications Networks and the Internet **4 Credits**
- ECET 4830 - Telecommunications Management **3 Credits**
- ECET 4840 - Advanced Telecommunications **4 Credits**
- ECET 4850 - Telecommunications Project **4 Credits**
- ECET 4860 - Network Security **4 Credits**
- MATH 2306 - Ordinary Differential Equations **3 Credits**
- MGNT 3105 - Management and Organizational Behavior **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits** **
- TCET Electives **6 Credits**

Degree Program Total: 128

Note:

PHYS 1111/PHYS 1111L and PHYS 1112/PHYS 1112L may be substituted for PHYS 2211/PHYS 2211L and PHYS 2212/PHYS 2212L .

** SPSU 1001 does not count towards the 128 total credit hours required for the degree program.*

TCET majors are required to earn a "C" or better in their ECET courses, except one "D" in a 3000 or 4000 level non-prerequisite course may be used for graduation purposes. A grade of "C" or better is required in the project-based capstone course.

TCET Electives

Students may take any *non-required* 3000 or 4000 level ECET or MGNT course to satisfy the TCET elective requirement of 6 credit hours.

Associate of Science Transfer Degree

General Studies, A.S.

The Associate of Science General Studies Transfer Program is designed for students who wish to complete the core at SPSU and then transfer to another institution.

All students must take:

- SPSU 1001 - Hitchhiker's Guide to SPSU **1 Credits**

Area A: Essential Skills (9 credits)

Grade of C or better required in the courses used to satisfy this requirement. Freshmen must complete Area A by the time they have attempted 30 semester hours of course work.

- ENGL 1101 - English Composition I **3 Credits**
- ENGL 1102 - English Composition II **3 Credits**
- MATH 1111 - College Algebra **3 Credits**
  (or other math as specified in the University core)

Area B: Institutional Options (4 credits)

- COMM 2400 - Public Speaking **2 Credits**
- STS 2400 - Science, Technology, and Society **2 Credits**

Area C: Humanities / Fine Arts (6 credits)

Choose ONE Literature Course:

- ENGL 2111 - Early World Literature **3 Credits**
- ENGL 2112 - World Literature Mid-1600s to Present **3 Credits**
- ENGL 2120 - British Literature Early to Present **3 Credits**
- ENGL 2121 - Early British Literature **3 Credits**
- ENGL 2122 - British Literature Late 1700s to Present **3 Credits**
- ENGL 2130 - American Literature Early to Present **3 Credits**
- ENGL 2131 - Early American Literature **3 Credits**
- ENGL 2132 - American Literature Mid 1800s to Present **3 Credits**
- ENGL 2141 - Early Western Literature **3 Credits**
- ENGL 2142 - Western Literature 1600s to Present **3 Credits**
- ENGL 2300 - African-American Literature and Culture **3 Credits**

Choose ONE Arts or Language Course:

- ARTS 2001 - Art Appreciation **3 Credits**
- ARTS 2002 - Drama Appreciation **3 Credits**
- ARTS 2003 - Music Appreciation **3 Credits**
- ARTS 2004 - History of Contemporary American Music **3 Credits**
- FREN 1002 - Elementary French II **3 Credits**
- FREN 2001 - Intermediate French I **3 Credits**
- FREN 2002 - Intermediate French II **3 Credits**
- GRMN 1002 - Elementary German II **3 Credits**
- GRMN 2001 - Intermediate German I **3 Credits**
- GRMN 2002 - Intermediate German II **3 Credits**
- SPAN 1002 - Elementary Spanish II **3 Credits**
- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

Area D: Science and Math (11-12 credits)

8 hours science (two courses with labs):

You must take two semesters of lab science *and lab* (lecture=3 credits; lab=1 credit; K-courses=4 credits, lab is included)

- ASTR 1000K - Introduction to the Universe **4 Credits**
- ASTR 1010K - Introduction to the Universe II **4 Credits**
- BIOL 2107 - Principles of Biology I **3 Credits**
- BIOL 2107L - Principles of Biology I Laboratory **1 Credits**
- BIOL 2108 - Principles of Biology II **3 Credits**
- BIOL 2108L - Principles of Biology II Laboratory **1 Credits**
- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1211K - Principles of Chemistry (ECORE) **4 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 1212K - Principles of Chemistry II (ECORE) **4 Credits**
- ENVS 2200K - Geology **4 Credits**
- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- GEOL 1101K - Introduction to Geosciences **4 Credits**
- PHYS 1111 - Introductory Physics I **3 Credits**
- PHYS 1111L - Introductory Physics Laboratory I **1 Credits**
- PHYS 1112 - Introductory Physics II **3 Credits**
- PHYS 1112L - Introductory Physics Laboratory II **1 Credits**
- PHYS 1211K - Principles of Physics I (ECORE) **4 Credits**
- PHYS 2211 - Principles of Physics I **3 Credits**
- PHYS 2211L - Principles of Physics Laboratory I **1 Credits**

- PHYS 2212 - Principles of Physics II **3 Credits**
- PHYS 2212L - Principles of Physics Laboratory II **1 Credits**

Math:

- MATH 1113 - Pre-calculus **4 Credits**
  (or other math as specified in the University core)

Area E: Social Sciences (12 credits)

Group 1 Amerian Perspectives- (3 credits):

Satisfies the American Perspectives overlay. Any one of these courses, taken within the University System of Georgia, also satisfies the Legislative Requirement for US and Georgia Constitution and History. Students who fulfill this requirement with transfer credit from outside the USG will need to take HIST 2911 U.S. and Georgia Constitution and History to satisfy the Legislative Requirement for graduation.

Choose ONE of the following:
- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Group 2 Historical Perspectives (3 credits):

Choose ONE of the following:
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

Group 3 Behavioral Science Perspectives (3 credits):

Choose ONE of the following:
- ECON 1101 - Introduction to Economics **3 Credits**
- PSYC 1101 - Introduction to General Psychology **3 Credits**
- SOCI 1101 - Introduction to Sociology **3 Credits**

Group 4 Global Perspectives (3 credits):

Satisfies the Global Perspectives overlay.

Choose ONE of the following:
- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- RELG 1200 - World Religion **3 Credits**

Elective Courses:

- At least one additional course in humanities (Area C) **3 Credits**
- At least one additional course in social sciences (Area E) **3 Credits**
- Any humanities, social science, math, lab science or any area F course from any program. **11-12 Credits**

Total Program Hours: 60

Non-Degree

Aerospace Engineering Minor

Requirements

- SYE 3801 - Aerodynamics (Aeronautic Elective) **3 Credits**
- SYE 4803 - Aeronautics Project **3 Credits**

Choose 3 courses from the following:

- SYE 3802 - Aircraft Design and Performance (Aeronautic Elective) **3 Credits**
- SYE 3803 - Fundamentals of Avionics **3 Credits**
- SYE 4801 - Aircraft Propulsion **3 Credits**
- SYE 4802 - Helicopter Theory **3 Credits**

Minor Program Total: 15

Apparel and Textiles Minor

To be eligible for a minor in Apparel and Textile Technology, the student must complete 15 credit hours from the following courses with at least 9 hours of upper division course work.

Requirements

- ATT 1200 - Apparel Design Graphics **2 Credits**
- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Minor Program Total: 15

Architecture Minor

Minor in Architecture for non-architecture majors, provides a focused exposure to the varied dimensions of design, critical thinking and application while exercising restraint on time to complete. Students who change their major from Architecture to another major or discipline of their choice can get a Minor in Architecture after fulfilling it's course requirements. Students complete a major in a Program to be awarded with a Minor in Architecture. Minor in Architecture will not be substituted with Certificate in Architectural Studies. All studio and lecture courses must be passed with a minimum grade of "C". All studios should be taken in sequence.

Architecture Minor

- ARCH 1001 - Design Foundation I **4 Credits**
- ARCH 1002 - Design Foundation II **4 Credits**
- ARCH 1241 - Design Communication I **2 Credits**
- ARCH 2003 - Design Foundation III **4 Credits**
- ARCH 2004 - Design Foundation IV **4 Credits**
- ARCH 2242 - Design Communication II **2 Credits**
- ARCH 2311 - Environmental Tech I - Systems Selection and Materials **3 Credits**
- ARCH 2112 - Architecture Culture II - The Renaissance through 1850 **3 Credits**
- ARCH 2211 - Architecture Structures I - Introduction to Structures **3 Credits**

Minor Program Total: 29

Biology Minor

To be eligible for a minor in Biology, the student must complete:

- A minimum of 18 semester hours of BIOL or BIOC coursework
- 9 of the 18 hours in BIOL/BIOC must be above the 2199 level
- Students who use BIOL 2107/BIOL 2107L and/or BIOL 2108/BIOL 2108L to satisfy Core D requirements cannot use these courses to satisfy requirements of the minor

Chemistry Minor

Requirements

- CHEM 1211 - Principles of Chemistry I **3 Credits**
- CHEM 1211L - Principles of Chemistry I Lab **1 Credits**
- CHEM 1212 - Principles of Chemistry II **3 Credits**
- CHEM 1212L - Principles of Chemistry II Lab **1 Credits**
- CHEM 2511K - Organic Chemistry I **4 Credits**
- CHEM 2512K - Organic Chemistry II **4 Credits**
- 10 additional hours of upper division (3000 level or higher) Chemistry or Biochemistry courses.

Total Hours: 26

Computer Game Design and Development Minor

To be eligible for a minor in Computer Game Design and Development, the student must complete the following courses with a grade of "C" or better. Any upper level (3000+) courses that are required in the major may not be used as credit for the minor. Other upper level CGDD courses may be used as substituted. Students must have at least 9 upper level CGDD hours not required for their major (CGDD courses taken as electives for your major bachelor degree can be used to complete the minor).

Minor in Game Design and Development Program Objectives:

- Provide students with game design and development knowledge that can be applied in their major area of study
- Provide students with fundamental game design and development skills

Minor in Game Design and Development Learning Outcomes

- Demonstrate skills fundamental to game design and development
- Demonstrate knowledge in at least two subfields of game design and development

Required Courses

- CSE 1301 -Any 1301 courses (C, J or E) Programming and Problem Solving 1 **4 Credits**
- CGDD 2002 - Fundamentals of Game Design **2 Credits**
- CGDD 4003 - Digital Media and Interaction **3 Credits**
- Three additional upper-level CGDD courses **9+ Credits**

Minor Program Total: 18+ Credits

Computer Science Minor

To be eligible for a minor in Computer Science, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level CS hours out of the 18 required credit hours.

Requirements:

- CSE 1301 - Any CSE 1301 (C, J or E) Programming & Problem Solving I **4 credits**
- CSE 1302 - Any CSE 1302 (C, J or E) Programming & Problem Solving II **4 Credits**
- CS 3424 - Data Structures **4 Credits**
- Two additional upper-level CS courses 6+
  NOTE: CS 3424 requires MATH 2345 - Discrete Mathematics as a pre-requisite.

Total Hours: 18 Credits

Construction Management Minor

Requirements

To be eligible for a minor in Construction Management, the student must complete the following courses:

- CM 2000 - Construction Graphics **3 Credits** *
- CM 3000 - Computer Applications in Construction **3 Credits** *
- CM 3110 - Residential and Light Construction Methods **3 Credits**

- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**

Total Hours: 15 Credits

NOTE: Students who have the prerequisite knowledge in these courses may substitute courses of greater or equal credit from the following list with the consent of the CM Department Chair:

- CM 3411 - Construction Estimating Software **2 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4511 - Construction Scheduling Software **2 Credits**
- CM 4560 - Construction Project Management **3 Credits**

Engineering Design Graphics Minor

Students who wish to receive a minor in Engineering Design Graphics must take:

- EDG 1212 - Engineering Graphics II **4 credits**

Select four additional courses from the following:

- EDG 3112 - Advanced Engineering Graphics **3 credits**
- EDG 4111 - Surface Modeling **3 credits**
- EDG 4222 - CAD Customization and Standards **3 credits**
- EDG 4224 - Engineering Design Graphics for Custom Manufacturing **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4112 - Computer Aided Engineering & Analysis **3 credits**
- OR
- ME 4250 - Computer Aided Engineering **3 credits**

Minor Program Total: 16

Not available to MET students with a concentration in Engineering Design Graphics.

Environmental Science Minor

Requirements

- ENVS 2202K - Introduction to Environmental Science **4 Credits**
- BIOL 3300K - Ecology **4 Credits**

Electives - Choose 7+ credits from the list below

- BIOL 3600 - Freshwater Biology **3 Credits**
- BIOL 3650 - Marine Biology **3 Credits**
- BIOL 4400K - Human Physiology **4 Credits**
- CHEM 3150K - Environmental Chemistry **4 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENVS 3100K - Soil & Water Science **4 Credits**
- ENVS 3350 - Oceanography **3 Credits**
- ENVS 3000 - Environmental Science Seminar **1 Credits**
- GEOG 4101 - Geographic Information Systems **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- ENVS 4300 - Environmental Ethics **3 Credits**

Minor Program Total: 15-18 Credits

Geographical Information Systems Minor

Minor in Geographical Information Systems

Required Courses

- SURV 2110 - Introduction to Mapping **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**

Total Hours: 16 Credits

History Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

World History (3 credits):

Choose ONE course not used to satisfy core Area E-2:

- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**

US History (6 credits):

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
  If HIST 2111 or HIST 2112 has been used to satisfy Core Area E-1, any 3-hour HIST course may be substituted.

Upper-Division History courses (9 credits):

Any **9 credits** of 3000- or 4000-level HIST courses.

Total Program Hours: 18

Industrial Engineering Technology Minor

To be eligible for a minor in Industrial Engineering Technology,

Students must complete the following three courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2305 - The Role of Industrial Engineering Technology in Industrial Systems **4 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**

And choose two courses from the following list:

- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3424 - Engineering Economy **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**

Minor Program Total: 16-18

Note:

An overall 2.0 GPA is required in the courses for the IET Minor (excluding the international studies minor courses).

Information Technology Minor

To be eligible for a minor in Information Technology, the student must complete the following courses with a grade of "C" or better:

Information Technology Minor Requirements

- IT 1324 - Advanced Programming Principles **4 Credits** or
  CSE 1302J - Programming & Problem Solving II **4 credits**

- IT 3123 - Hardware/Software Concepts **3 Credits** or
- CS 3224 - Computer Organization & Architecture **4 Credits**

- IT 3203 - Introduction to Web Development **3 Credits** or
- CSE 3153 - Database Systems **3 Credits**

And one of the Following:

- IT 4123 - Electronic Commerce **3 Credits**
- IT 4323 - Data Communications & Networks **3 Credits**
- IT 4823 - Information Security Administration & Privacy **3 Credits**

Total Hours: 14-15 Credits

International Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives.* No courses used to satisfy Core Areas A-E may be used in a minor.

Regional Studies (3 credits):

Choose ONE of the following:

- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

Language Requirement:

Student must complete FREN 1002, GRMN 1002, or SPAN 1002 OR demonstrate proficiency in a non-English langage at an equivalent level.

Electives (12 credits):

Choose FOUR courses from the following list NOT used to satisfy core requirements in Areas A-E. No more than TWO may be numbered below 3000.

- ANTH 1102 - Introduction to Anthropology **3 Credits**
- ECON 1101 - Introduction to Economics **3 Credits**
- ECON 2106 - Principles of Microeconomics **3 Credits**
- ES 1100 - Ethnic Studies **3 Credits**
- GEOG 1101 - Introduction to Human Geography **3 Credits**
- GEOG 3101 - World Regional Geography **3 Credits**
- HIST 1111 - Survey of World Civilization pre 1500 **3 Credits**
- HIST 1112 - Survey of World Civilization post 1500 **3 Credits**
- HIST 3200 - History of Science Survey **3 Credits**
- HIST 3301 - Diplomatic and Military History since 1815 **3 Credits**
- HIST 3401 - Modern Social and Cultural History Twentieth Century **3 Credits**
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- HIST 3601 - History of the Pacific Rim **3 Credits**
- HIST 3801 - Contemporary World History since 1945 **3 Credits**
- IS 3600 - Comparative Culture **3 Credits**
  Any regional studies course NOT used to satisfy the Regional Studies requirement above.
- IS 4000 - Regional Studies - General **3 Credits**
- IS 4001 - Regional Studies/Latin America **3 Credits**
- IS 4002 - Regional Studies/Asia:China **3 Credits**
- IS 4003 - Regional Studies/Asia:Japan **3 Credits**
- IS 4004 - Regional Studies/Middle East **3 Credits**
- IS 4005 - Regional Studies/Russia/Eastern Europe **3 Credits**
- IS 4006 - Regional Studies/Western Europe **3 Credits**
- IS 4007 - Regional Studies/Africa **3 Credits**

- IS 4600 - International Studies Internship **3 Credits**
- IS 4800 - International Studies Capstone **3 Credits**
- MGNT 4145 - International Management **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3601 - Contemporary World Politics **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**
- POLS 4063 - Political Issues in Electronic Government **3 Credits**
- POLS 4101 - Political Economy of Post-Communist Transformation **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**
- POLS 4301 - International Political Economy **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
- PSYC 4000 - International Psychology **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**
- RELG 1200 - World Religion **3 Credits**
- SPAN 3001 - Advanced Conversation **3 Credits**
- SPAN 3002 - Grammar and Composition **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**
- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**
- STS 4000 - International Issues in Science and Technology **3 Credits**
- STS 4400 - Topical Studies in Science and Technology **3 Credits**
  Special topics courses in HIST, POLS, PSYC may be used as electives with topic-specific departmental approval.

Total Program Hours: 15

Latin American Studies Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- ES 1100 - Ethnic Studies **3 Credits**
  Latino / Hispanic Ethnic Studies ONLY; may not also be used to satisfy E-4 core
- HIST 3501 - Colonization and Rebellion in the Trans-Atlantic World **3 Credits**
- POLS 4201 - International Relations in the Americas **3 Credits**

- IS 4001 - Regional Studies/Latin America **3 Credits**
- SPAN 3003 - Hispanic Cultures and Civilizations **3 Credits**

Total Program Hours: 15

Logistics Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 3511 - Sustainability Engineering **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

Manufacturing Engineering Technology Minor

Students who wish to receive a minor in Manufacturing Engineering Technology must take the following two courses:

- MET 1311 - Manufacturing Processes **3 credits**
- MET 2322 - Metrology and CNC Machining **3 credits**

Select three additional courses from the following:

- EDG 4224 - Engineering Design Graphics for Custom Manufacturing **3 credits**

- IET 3407 - Six Sigma and Lean Manufacturing **3 credits**
- MET 3331 - Tool Design **3 credits**
- MET 3332 - Rapid Design and Manufacture **3 credits**
- MET 4342 - Numerical Control of Machines **3 credits**
- MGNT 4135 - Project Management **3 credits**

Minor Program Total: 15

Note: Not available to MET students with a concentration in Manufacturing

Mathematics Minor

To obtain a minor in Mathematics, the student must complete:

- MATH 2255
- An additional 14 semester hours of Mathematics courses at the 2300 level or higher

At least 9 of these additional 14 hours must be at the 3000 level or higher.

Courses used to fill other requirements at SPSU (excluding core areas A through E) may also be used to obtain a minor in Mathematics.

For example, if you take MATH 2306 to fulfill a requirement in the Management curriculum, you may also use it in a math minor. However, you may not use MATH 1113 to fulfill the math minor because it is in area A of the core curriculum.

TOTAL HOURS: 18

Nuclear Engineering Minor

Requirements

- SYE 3501 - Fundamentals of Nuclear Engineering **3 Credits**
- SYE 3502 - Radiation Detection and Measurement **3 Credits**
- SYE 4501 - Nuclear Power Generation **3 Credits**
- SYE 4502 - Radiation Protection and Health Physics **3 Credits**
- SYE 4503 - Nuclear Fuel Cycle **3 Credits**

Minor Program Total: 15

Physics Minor

To be eligible for a minor in Physics, the student must complete at least 15 hours of course work in physics with at least 10 hours in upper division physics courses.

Political Science Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- POLS 1101 - American Government **3 Credits**
- POLS 2401 - Global Issues **3 Credits**
- POLS 3001 - Comparative Politics **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
  Choose ONE of the following:
- POLS 3601 - Contemporary World Politics **3 Credits**
  OR
- POLS 4301 - International Political Economy **3 Credits**
  Choose ONE of the following:
- POLS 3701 - Seminar in American Politics **3 Credits**
  OR
- POLS 3801 - Political Behavior **3 Credits**

Total Program Hours: 18

Pre-Law Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses (6 credits):

Take TWO of the following courses NOT used to satisfy Core Area E-1:

- HIST 2111 - United States History to 1877 **3 Credits**
- HIST 2112 - United States History since 1877 **3 Credits**
- POLS 1101 - American Government **3 Credits**

Elective Courses (12 credits):

Pick any FOUR of the following:

- MGNT 3145 - Legal Environment of Business **3 Credits**
- POLS 3209 - U.S. Constitutional Law **3 Credits**
- POLS 3301 - Modern Political Theory **3 Credits**
- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3501 - Intellectual Property Issues **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**

Total Program Hours: 18

Professional Writing Minor

After taking COMM 2000, Business Communication, **take only 12 more hours**, 9 of which must be at the 3000 or 4000 level, to receive a Minor in Professional Writing. Your minor credential will be designated on your SPSU transcript provided you earn a C or better in each course.

Requirements

- COMM 2000 - Business Communication **3 Credits**

Additional Courses Choose Four of the Following (12 credits)

Students majoring in Business Administration are required to take COMM 2000 as part of their existing program of study. TCOM 2010 will serve as a blanket substitution for COMM 2000 for Business Administration students interested in Professional Writing minor.

This minor is not available to students majoring in either Technical Communication or English and Professional Communication.

- COMM 3035 - Organizational Communication **3 Credits**
- COMM 3040 - Health Communication **3 Credits**
- COMM 3050 - Journalism **3 Credits**
- ENGL 3010 - Science Writing **3 Credits**
- ENGL 3015 - Environmental Writing **3 Credits**
- ENGL 3020 - Proposal Writing **3 Credits**
- ENGL 3025 - Creative Writing Workshop **3 Credits**
- ENGL 3040 - Article and Essay Workshop **3 Credits**
- ENGL 4010 - Publishing for New Media **3 Credits**
- TCOM 4000 - Professional Editing **3 Credits**

Total Hours: 15

Psychology Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor *except free electives*. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses:

- PSYC 1101 - Introduction to General Psychology **3 Credits**
  (If PSYC 1101 has been used for Core Area E-3, any 2000-Level PSYC course may be substituted in the minor)
- IET 2227 - Introduction to Statistics **3 Credits**
- PSYC 2100 - Basic Quantitative Research Methods for Psychology **3 Credits**
- PSYC 3101 - International Social Psychology **3 Credits**
  AND **6 Credits** in any PSYC 3000- or 4000- level courses

18 Credits

Public Policy Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

Required Courses (6 credits):

- POLS 3009 - Foundations of Public Policy **3 Credits**
- POLS 4009 - Comparative Public Policy Analysis **3 Credits**

Electives (9 credits):

Choose THREE of the following:

- POLS 3401 - Environmental Law and Policy **3 Credits**
- POLS 3701 - Seminar in American Politics **3 Credits**
- PSYC 4600 - Conflict Resolution **3 Credits**

- STS 4000 - International Issues in Science and Technology **3 Credits**

Special Topics

Special Topics in POLS, STS, or IS may also be used as electives with topic-specific approval of the department.

Total Program Hours: 15

Quality Principles Minor

Students must complete the following courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3407 - Six Sigma and Lean Manufacturing **3 Credits**

Students choose one from the following:

- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Minor Program Total: 15

Renewable Energy Engineering Technology Minor

Renewable Energy Engineering Technology Minor

Required Course

- REET 3550 - Introduction to Alternate Energy **4 Credits**

Plus four additional courses from the following:

- REET 2020 - Engery Conversion **4 Credits**
- REET 3030 - Energy Storage Systems **3 Credits**
- REET 4100 - Solar Photovoltaics **3 Credits**
- REET 4110 - Solar Thermal Systems **3 Credits**
- REET 4200 - Wind Power Generation **3 Credits**
- REET 4210 - Oceanic and Hydropower Generation **3 Credits**
- REET 4500 - Environmental Aspects of Power Generation **3 Credits**
- REET 4510 - Sustainable Transportation Systems **3 Credits**

Minor Program Total: 16-17

Note:

An overall GPA of 2.0 is required in the courses for the Renewable Energy Engineering Technology (REET) Minor.

Software Engineering Minor

To be eligible for a minor in Software Engineering, the student must complete the following courses with a grade of "C" or better. Students must have at least 9 upper level SWE hours.

Program Objectives

Students earning a minor in Software Engineering will:

- Possess broad foundations in software engineering concepts and methodologies so they may contribute to the effective design and implementation of large scale software.

Learning Outcomes

Students earning a Software Engineering minor will have demonstrated the ability to:

- Apply SWE practices and process to software design and development.
- Demonstrate the ability to gather, analyze, develop, verify and/or validate artifacts of software engineering systems.
- Use software tools effectively in some phases of software development.

Minor Requirements

- CSE 1302 - Programming & Problem Solving II **4 Credits**
- SWE 2313 - Introduction to Software Engineering **3 Credits**
- Three additional upper-level SWE courses **9 Credits**

Note:

SWE 1302 has a pre-requisite of SWE 1301 .

Total Hours: 16 hours

Spanish Minor

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

2000-Level (6 credits):

May not also be used to satisfy Core Area C-2:

- SPAN 2001 - Intermediate Spanish I **3 Credits**
- SPAN 2002 - Intermediate Spanish II **3 Credits**

3000-Level (9 credits):

Any 9 credits in 3000-level SPAN courses.

Total Program Hours: 15

Consider the Certificate in Professional Spanish as well:

Requirements for Professional Certificate

Technical Communication Minor

After taking TCOM 2010 Technical Writing, you will take **only 12 more hours,** 9 of which must be at the 3000 or 4000 level. If you earn a grade of "C" or better in each course, your minor credential will be designated on your SPSU transcript.

Requirements (6 credits)

- TCOM 2010 - Technical Writing **3 Credits**

- TCOM 2020 - Introduction to the Professions **3 Credits**
  OR
- TCOM 2030 - Research in Technical Communication **3 Credits**

  Students whose major already requires TCOM 2010 should take TCOM 2020 **and** TCOM 2030 (blanket substitution will apply).

Additional Courses for Minor (9 credits)

Choose any class with the TCOM course prefix, 3000-level or higher.

This minor is not available to students majoring in either Technical Communication or English and Professional Communication.

Total Hours: 15

Certificate

Apparel Product Development Certificate

The Fashion Design and Product Development program offers a Certificate in Apparel Product Development. The objective is to provide training and education to members of the apparel industry, graduates of fashion and design schools and other interested parties seeking to improve their skills. The courses may also be applied toward completing the Bachelor of Apparel and Textiles degree. All requirements for normal admissions are applicable. Certificate students must complete five courses from the following list:

Requirements

Certificate students must complete five classes from the following list:

- ATT 1300 - International Sourcing **3 Credits**
- ATT 1400 - Principles of Merchandising **3 Credits**
- ATT 2301 - Apparel Computer-Aided Technical Design I **4 Credits**
- ATT 3100 - Fashion Merchandising **3 Credits**
- ATT 3505 - Fabric Formation and Design **3 Credits**
- ATT 3600 - Apparel Analysis and Product Development **3 Credits**
- ATT 3602 - Apparel Computer-Aided Technical Design II **4 Credits**
- ATT 3800 - Fashion Forecasting, Data Analysis & Consumer Trends **3 Credits**
- ATT 4444 - Quality Assurance for Textiles and Apparel **4 Credits**
- ATT 4670 - Apparel/Textile Business Practices **3 Credits**
- ATT 4750 - Advanced Design and Product Development **3 Credits**

Certificate Program Total: 15

Geographical Information Systems Certificate

The Geographical Information Systems (GIS) Certificate program is designed to prepare students with a practical set of GIS marketable skills who have a background in GIS applications such as surveying, real estate, marketing, geography or business background. There are five courses required in the certificate program.

Required Courses (19 Credits)

- SURV 2110 - Introduction to Mapping **4 Credits**
  OR
- SURV 2221 - Surveying I **4 Credits**
- SURV 3421 - Geographic Information Systems I **4 Credits**
- SURV 4420 - Remote Sensing **4 Credits**
- SURV 4422 - Geographic Information Systems II **4 Credits**
- SURV 4110 - Geographical Information Systems (GIS) Practice **3 Credits**

Certificate Program Total: 19

Land Development Certificate

The Certificate in Land Development provides training and education to members of the real estate and land development field in construction and land development principles and practices. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Construction Management upon acceptance to SPSU.

Prerequisites must be met prior to enrollment in certain certificate courses.

Required Courses:

- CM 3310 - Introduction to Development **3 Credits**
- CM 3710 - Site Planning **4 Credits**
- CM 4570 - Development Process I **4 Credits**
- CM 3110 - Residential and Light Construction Methods **3 Credits**

Subtotal: 14 Credits

*may substitute courses from electives list if competency can be demonstrated

Elective Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3430 - Construction Estimating for Development **3 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4620 - Development Process II **3 Credits**

Subtotal: 7 Credits (minimum)

Certificate Program Total: 21 Credits (minimum)

Land Surveying Certificate

The Land Surveying Certificate program is designed to prepare surveyors with the basic education necessary to take the Fundamentals of Land Surveying Exam and exceeds the State of Georgia academic registration requirements to become a Registered Land Surveyor. There are six courses required in the certificate program.

Required Courses (21 Credits)

- SURV 2221 - Surveying I **4 Credits**
- SURV 3222 - Surveying II **4 Credits**
- SURV 4465 - Legal Aspects of Land Surveying **4 Credits**
- SURV 4475 - Land Surveying Practice **2 Credits**
- SURV 4470 - Land Development Design **4 Credits**
- CET 4310 - Stormwater Management and Erosion Control **2 Credits**
- CET 4310L - Erosion Control Lab **1 Credits**

Certificate Program Total: 21

Logistics Certificate

The primary objective of the Certificate in Logistics is to provide training and education to members of the Supply Chain industry that need to improve skills and knowledge in the latest technology available in their field. Students can complete the requirements in 4-6 semesters. The courses may also be applied toward completing a B. S. degree in Industrial Engineering Technology. The program will be offered on campus, through distance learning, and over the Internet.

Admission Requirements:

Applicants must have earned a High School degree or GED and been out of high school for at least five years or have earned 30 college credits from an accredited institution of higher learning with a minimum GPA of 2.0.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 2449 - Logistics and Supply Chain Management **3 Credits**
- IET 3320 - Advanced Logistics **3 Credits**
- IET 3620 - Warehousing Systems **3 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4115 - Human Resource Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

Production Design Certificate

The primary objective of the Certificate in Production Design is to provide training and education to members of the Industrial Engineering field in the measurement and analysis of work and in the design or improvement of facilities. Students can complete the requirements in 3-4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering Technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3322 - Work Measurement and Ergonomics **4 Credits**

- ACCT 2101 - Principles of Financial Accounting **3 Credits**
- IET 4422 - Facilities Design, Plant Layout, and Materials Handling **4 Credits**
- IET 4405 - Operations Research - Concepts, Models and Methods **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 20

Project Management Construction Certificate

The professional Certificate in Project management is designed for working professionals who wish to further their knowledge in Construction Project Management. The certificate will also be useful for those individuals who wish to make a career change to the construction industry, or to those people who find themselves in the construction industry without first gaining a background in construction.

Prerequisites must be met prior to enrollment in certain certificate courses.

Required Courses:

- CM 2000 - Construction Graphics **3 Credits**
- CM 3000 - Computer Applications in Construction **3 Credits**

- CM 3110 - Residential and Light Construction Methods **3 Credits** OR
- CM 3160 - Construction Equipment **3 Credits**

- CM 4560 - Construction Project Management **3 Credits**
- CM 3620 - Construction Finance and Feasibility **4 Credits**

Subtotal: 11-12 Credits

Elective Courses:

- CM 3410 - Construction Quantity Surveying **3 Credits**
- CM 3420 - Construction Estimating and Bid Preparation **4 Credits**
- CM 4510 - Construction Scheduling **3 Credits**
- CM 4760 - Construction and Real Estate Property Law **3 Credits**

Subtotal: 9+ Credits

Certificate Program Total: 20+ Credits

Quality Principles Certificate

The primary objective of the Certificate in Quality Principles is to provide training and education to members of the Industrial Engineering field in quality system principles, methodology, elements and standards. Students can complete the requirements in 3–4 semesters. These courses may also be applied toward completing a B.S. degree in Industrial Engineering technology upon acceptance to SPSU.

Admission Requirements:

Applicants must meet all undergraduate admission requirements.

Required Courses:

- IET 2227 - Introduction to Statistics **3 Credits**
- IET 3339 - Statistical Quality Control **3 Credits**
- IET 3356 - Quality Concepts and Systems Design **3 Credits**
- IET 3403 - Advanced Statistics with Application **3 Credits**
- IET 3410 - Principles of Team Dynamics **3 Credits**
- MGNT 4135 - Project Management **3 Credits**
- MGNT 4151 - Operations Management **3 Credits**

Certificate Program Total: 21

Spanish Professional Certificate (Undergraduate)

All courses must be completed with grade of C or better. No more than 9 hours may also be used to satisfy requirements in a major or another minor except free electives. No courses used to satisfy Core Areas A-E may be used in a minor.

All Courses Required for the Spanish Minor

Requirements for Spanish Minor

4000-Level Electives (6 credits):

Chose SIX credits from the following:

- SPAN 4001 - Professional Spanish **3 Credits**
- SPAN 4002 - Techniques in Translation for Professional Spanish **3 Credits**
- SPAN 4003 - Service Learning Project **3 Credits**

Learning Project (3 credits):

- SPAN 4003 - Service Learning Project **3 Credits**

Oral Proficiency Interview (OPI):

After all coursework is completed, student must take the American Council on the Teaching of Foreign Language OPI.

Total Program Hours: 9 credits beyond the minor

Dining Services

There are four food service facilities on campus. Stingers Restaurant is the home of the University's board plan operation. There are 3 retail operations on campus The Grill (located on the lower level of the student center), Mondo's Sub Shop (located on the first floor of the Atrium Building), and Spork (located near the Housing Office). Catering and Concession services are provided by Chartwells Food Service.

For more information go to www.dineoncampus.com/spsu/

Emergency Locator Service

Emergency assistance in locating a student is provided by the Vice President of Student and Enrollment Services Office at 678/915-3720 from 8:00 a.m. until 5:00 p.m., Monday through Friday. The University Police Department provides emergency assistance in locating students on weekends and after 5:00 p.m. on weekdays at 678/915-5555.

If the University Police determine that a student (for whom a missing person report has been filed) has been missing for more than 24 hours, then within the next 24 hours they will:

- Notify the individual identified by the student to be contacted in this circumstance;
- If the student is under 18 years old, notify a parent or guardian; and
- In cases where the student is over 18 and has not identified a person to be contacted, notify appropriate law enforcement officials.

Extended University

Extended University (EU) is an administrative unit reporting to the Vice President for Academic Affairs. The mission of EU is to provide services to SPSU, the business community and the community at large by extending, enhancing and expanding the traditional teaching, scholarship and service roles of the university to new clients, in new formats and through the infusion of new technologies. Extended University includes a variety of programs and service units that are described here below. For more information regarding these programs and services, contact the EU Dean's Office at 678/915.7338 or stop by J-377.

Continuing Education Center (CEC)

The Continuing Education Center is responsible for providing all non-credit professional continuing education instruction sponsored by the university. CEC sponsors open enrollment programs in computing, engineering, business, quality, and communications. CEC also offers customized corporate training. CEC Certificate Programs feature a sequential set of courses designed to provide a body of knowledge in selected areas. Currently available certificates include:

- Business Intelligence
- AutoCAD Professional Certification
- CISCO Certified Network Associate (CCNA)
- Professional Project Management Certificate Program
- Lean Six Sigma Certification Training
- Accelerated Training in Healthcare Information Technology

Call 678/915-7240 for additional information or check the CEC web site at www.spsu.edu/cec.

Southern Polytechnic Applied Research Corporation (SPARC)

The Southern Polytechnic Applied Research Corporation (SPARC) provides support to Southern Polytechnic faculty in research, development and the application of technology within their areas of expertise. This support includes the identification of opportunities, development of proposals and the administration of grants and contracts upon award. The Applied Research Corporation is committed to providing growth opportunities for faculty and students and establishing Southern Polytechnic State University as a leading center of applied technology. For more information go to www.spsu.edu/sparc.

Office of Sponsored Programs (OSP)

The Office of Sponsored Programs has overall responsibility for the administration of grants, contracts and sub-awards, as well as compliance with state and federal regulations. Pre-award services include identifying funding opportunities and working with faculty to prepare proposals for submission. Post-award activities include tracking expenses, supplying reports to faculty and interfacing with the business office. For more information call 678/915-3159, visit the web site at www.spsu.edu/sponsoredprograms or stop by J-354.

eCore

eCore -- short for electronic core-curriculum -- allows University System of Georgia (USG) students the opportunity to complete the first two years of their collegiate careers in an online environment. eCore courses are taught entirely online, except for the occasional proctored exam. eCore courses are designed, developed, taught and supported by

faculty and staff from the USG. Extended University coordinates eCore for SPSU and is available to answer all eCore questions. For more information go to www.spsu.edu/ecore.

English Language Services (ELS)

ELS Language Centers provide a unique opportunity for foreign students to learn English as a second language or to improve their English proficiency. ELS distinguishes itself as the finest in English language instruction by providing excellent customer service. ELS Language Centers have become the world's largest network of campus-based, English language instruction centers with over 30 locations throughout the United States. ELS provides full-time daily classes year-round in four-week terms. In addition, ELS offers specialized programs that are customized to fit your needs. For more information go to www.els.edu/atlanta.

Honor Society

Superior scholastic achievement in engineering technology is recognized by membership in the Tau Alpha Pi National Honor Society. The original chapter of this society was founded on the Southern Polytechnic State University campus in 1953, and its members have not only demonstrated high academic achievements, but have also maintained various leadership positions in campus organizations.

For further information on SPSU's local Tau Alpha Pi chapter, please visit the web site at tap.spsu.edu.

HornetCard

HornetCard is your university identification card. Every student, faculty and staff member at SPSU can get a HornetCard in the Campus Services office located on the 2nd floor of the student center. Your HornetCard is used for access to Univeristy facilities, events, and services. All privileges granted by the use of this card are provided solely for the person described on the card.

For more information about HornetCard and its services go to www.spsu.edu/hornetcard

Library

General Information – The Lawrence V. Johnson Library collection consists of 128,000 volumes and about 200 print and electronic journal titles. An increasingly popular service is access to over 8,000 e-books.

GALILEO – Georgia Library Learning Online, popularly known as GALILEO, is an initiative funded by the University System of Georgia that allows access to online databases, including full-text and full-image files. Faculty and students have access to more than 300 databases as well as library catalogs. Additionally, students who bring their laptops will be able to access GIL, GALILEO and the Internet for research purposes in any area of the Library which has wireless access.

GIL – The automated library union catalog, GIL, lists materials held by libraries throughout the state of Georgia. Materials from libraries nationwide may be obtained through the Interlibrary Loan service in the Reference Department. GILExpress is a self- initiated, free service to request materials from other University System of Georgia Libraries.

Additional information about services offered at the Johnson Library may be accessed at www.spsu.edu/library/library.html; or, patrons may enter queries via email to reference@spsu.edu.

Licensure of Professional Engineers

To protect public safety, each state establishes laws to license engineers who are responsible for decisions that affect public health and safety. The licensing process involves formal education, two written examinations, appropriate work experience, and recommendations by professionals in the field. The two written examinations consist of the Fundamentals of Engineering (FE) and the Principles and Practices of Engineering (PE).

The requirements for a Professional Engineer vary by state, and not all states allow engineering technology graduates to seek licensure. However, it is possible for engineering technology graduates to become Professional Engineers in Georgia and many other states. In Georgia, students completing a bachelor's degree in engineering technology may take the Fundamentals of Engineering (FE) exam in the senior year of study. After accumulating the requisite number of years of appropriate work experience, an engineering technology graduate who has passed the FE exam is eligible to take the PE exam in Georgia or other states in which they are eligible for licensure.

Any student with a goal of becoming a Professional Engineer should contact their faculty advisor for additional information.

Post Office

The Southern Polytechnic Post Office is located next to the Bookstore and is open 9:00 a.m. to 5:00 p.m. Monday through Friday. Post Office boxes are available for rental by the term.

Recreational Sports

Mission

The Recreational Sports Department shares in the educational mission of the university by offering opportunities to experience interpersonal growth, social development, improve physical and mental health, and to develop lifetime leisure skills for a healthier lifestyle. The Department organizes, administers, and promotes a broad program of competitive, recreational, fitness, and wellness programs for students, faculty, and staff.

The Intramural Sports program provides students with the opportunity to compete on a competitive and recreational level. The program administers over 20 different leagues/tournaments throughout the academic year. Flag Football, Basketball, Soccer, Softball, Golf, and Bowling are just some of the intramural programs offered. Students also have an opportunity to learn new skills by officiating our leagues (and earn some extra money).

A wide range of fitness and wellness classes are also programed by the Recreational Sports Department. Aerobics, Yoga, abs, cycling, and swimming are just a few of the class offerings. Classes are free to all students.

Recreational Facilities

The Recreation and Wellness Center, offers many recreational opportunities to the student. A state of the art weight room that includes free weights, machine weights, plate loaded machines, and cardiovascular equipment highlights the facility. The facility also boasts a large multipurpose gym that accommodates 2 basketball courts, 2 volleyball courts, 4 badminton courts, and a perimeter jogging/walking area. The Recreation and Wellness Center also has 2 racquetball courts, locker rooms/showers, and a pool complete with an outdoor sunbathing area. The pool can be used for

recreation, lap, and competitive swimming. The Department of Recreational Sports and Campus Health Services are housed in the Recreation and Wellness Center.

The Southern Polytechnic Outdoor Recreation Complex provides 3 softball fields. The intramural sports program makes use of these fields throughout the year with flag football, soccer, and softball leagues. Also included in the complex is a half-mile jogging trail.

Student Center

The Joe Mack Wilson Student Center is located in the center of campus, just west of "the Globe". The Student Center houses many student services, including Student Government Association, the Game Room, Student Life, Campus Services, the bookstore, the Grill, and the Post Office. There are also many spaces within the student center that are available for student groups to reserve for events and meetings.

For more information about the Student Center go to www.spsu.edu/studentcenter

Student Health Services

The school nurse, who is on duty Monday through Friday in the clinic located in the Recreation and Wellness Center, provides limited outpatient services for minor illnesses and injuries. If further treatment is necessary, she will refer the student to an urgent care facility located near the campus. Due to the limits on the health services provided by Southern Polytechnic State University, each student is encouraged to have adequate health and accident insurance through either a personal or family insurance policy. The University offers an optional medical insurance policy. Information is available at www.studentinsurance.com.

International students are required to have private health insurance protection. Southern Polytechnic State University is not responsible for any medical expenses incurred by international students beyond those that are covered by the Student Health Fee.

Student Housing

SPSU offers nearly 1800 on-campus student housing beds. In addition to providing a convenient and economical home for students, on-campus living also provides a great learning opportunity. Living on campus contributes to the educational development of each student through exposure to students of varied backgrounds, experiences, and personal philosophies. The Department of Housing and Residence Life is staffed by 9 full-time professionals along with 50 Resident Assistants. The primary function of the Housing and Residence Life staff is to create and maintain a desirable environment for all residents.

All students who have been accepted to Southern Polytechnic State University will need to visit the Housing and Residence Life website at www.spsu.edu/housing for application information. On-campus housing is required for all first-year students. However, this requirement may be waived if you will be living at home with a parent/guardian. Please contact our office for more information.

Howell Residence Hall and Hornet Village Suites are reserved for traditional first-year freshmen only. There is also a mandatory meal plan for all residence hall residents. Our on-campus apartments, University Courtyard and University Commons, are available to upperclassmen students. Consideration of a roommate request will be given providing the request is mutual and space is available.

For more information about student housing go to www.spsu.edu/housing.

Housing payments are due in full each semester. If you have any additional questions you may contact the Department of Housing and Residence Life by calling 678/915-7335 or by sending an email to housing@spsu.edu.

Application

Every student interested in living on campus at Southern Poly must submit a housing application, which can be found online in Banner. Space is limited, so it is important to submit your housing application early. A mandatory, non-refundable $200 application fee is required of everyone completing an application to live on-campus. The fee will be added to your student account and can be paid online or in person at the Business Office. Please understand that completing an application does not guarantee housing will be assigned. When the housing application and fee have been received, a notification of housing status will be sent by our office. In the case of space not being available, the reservation fee will be refunded. We will do our best to accommodate all preferences with regards to roommate requests and building placement. Roommate requests should be so marked on the housing application by all involved students.

Student Life

Mission

Student Life creates a sense of place as an academic support unit that empowers, prepares, and develops students at SPSU through high-quality social, leadership, educational, and service programs. Student Life aligns with the mission and vision of the university to help our students recognize and achieve their potential to transform their lives and impact their futures.

About Us

The Student Life Office is the hub of co-curricular activity on campus that includes Journey New Student Orientation, student organizations, campus activities, fraternities & sororities, student government, cultural programming, leadership development, and volunteer opportunities; we have something for everyone.

The events offered by the Student Life Office are sponsored by the Student Activity Fee that is paid by every student matriculated at Southern Polytechnic. Since the Student Activity Fee pays for these events, activities and outings, everything is FREE!

Student organizations allow our students to meet a variety of people, develop communication and leadership skills, practice the theories they learn in the classroom and create a wide web of networking possibilities that could lead to friendships, an internship, or even ultimately a job!

Our number one goal is to get each student connected, involved, develop a sense of community, and HAVE FUN!

For more information visit us at www.spsu.edu/studentlife

The University Honors Program

The University Honors Program of Southern Polytechnic builds upon the university's excellent reputation for providing both theoretical and applied approaches to learning. Honor students are given the opportunity to develop their talents

and skills in an expanded and enriched curriculum featuring seminar-size classes and independent research opportunities.

Admissions

All prospective Honors students must apply to the Honors Program. Incoming freshmen who have at least a 1200 SAT score or ACT equivalent and at least a 3.5 high school GPA will be guaranteed automatic admission to the Honors Program. Transfer students who have earned a 3.5 GPA for college-level coursework over 30 hours of credit also will be guaranteed automatic admission. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site www.spsu.edu/honors/. All prospective Honors students must apply to the Honors Program. Students who do not strictly meet these guidelines, but who have other achievements that show promise of academic excellence are encouraged to apply. Students may download an application from the web site www.spsu.edu/honors/.

Advantages

While the main advantage of participation in the Honors Program is the intellectual rigor of the curriculum, there are other advantages as well:

- Eligibility for Honors scholarships or out-of state tuition waivers as appropriate
- Special Orientation Programs
- Priority Registration
- Honors course designation on student transcripts
- Honors advising
- Social and extracurricular opportunities
- Recognition upon graduation: in the commencement program, on the diploma, and with an honorary symbol as part of the graduation regalia.

Program Guidelines

To earn the University Honors Scholar Diploma at Southern Polytechnic, students must complete 18 credit hours of Honors coursework and at least 6 of those hours must be upper division course-work. To earn the Departmental Honors Scholar Diploma, students must complete 6 hours of enriched upper division course-work or directed study.

The Honors Program offers several different types of honors courses so that students can meet the requirements.

- Honors Core Courses
- Honors Interdisciplinary Seminars
- Honors Research Assistant and Independent Study Opportunities.

Students must have a minimum graduation GPA of 3.4. All students must complete an Honors Paper to be bound and placed in the library. An Honors Presentation of this paper is also required.

Probation and Dismissal

Students in the Honors program that fall below the required GPA are placed on probation for one semester. A student on probation whose GPA does not meet the requirements at the end of their next enrolled semester will be dismissed from the honors program. Students who commit acts of academic dishonesty may also be dismissed from the program.

Additional Information

For additional information contact the University Honors Program at 678/915-3931 or email us at honors@spsu.edu. You can also visit our website at honors.spsu.edu.

University Police

Southern Polytechnic is committed to a safe, healthy environment in which our students, faculty and staff can grow professionally and personally. The University promotes strong safety policies and prompt reporting and investigation of any actions or events that would harm the well being of any student, employee, or faculty member.

The University Police employs police officers who comply with certification, training, and all other requirements of the Peace Officers Standards and Training Council of Georgia. Our officers have arrest powers on Southern Polytechnic property and on any public or private property within five hundred yards of property under the control of the Board of Regents. Our officers conduct preventive patrols on campus including the residence halls, secure University-owned property, investigate reported crimes at the university, conduct educational programs and workshops to promote personal safety, and actively work to prevent and detect crime throughout the Southern Polytechnic community. Our disclosure report can be found at police.spsu.edu.

University Transportation

University Transportation manages all of the parking and transportation services at SPSU. Parking on campus is available by permit only. All students pay a mandatory University Transportation Fee each semester. Your parking permit is included as a part of this fee. Visitors must park in one of the two visitor parking lots, located adjacent to the Student Center and on the first level of the parking deck. University Transportation also provides many other services including the Poly Trolley and ZipCar.

For more information about parking on campus or other University Transportation services go to www.spsu.edu/studentcenter.

The ATTIC

The ATTIC (Advising, Tutoring, Testing, International Center) provides academic support services to students at SPSU. Located in the Student Center (A-160), the ATTIC houses Advising, Testing, Tutoring, International Student Services, Disability Services, and Multi-Cultural Affairs. For more information, call 678/915-7361.

Joint Enrollment Advising

The Joint Enrollment Advisor/Move On When Ready Advisor guides Joint Enrollment and Move On When Ready students in selecting courses they need for their high school graduation and for their college careers. The Advisor also works with high school counselors.

Tutoring

The ATTIC provides individualized assistance and small-group study options to Southern Polytechnic students. Tutors help students with core courses in English, chemistry, biology, mathematics, and physics. Tutoring occurs in the

Student Center in rooms A-184 & A-185. The tutoring schedule can be viewed online at the ATTIC's website at www.spsu.edu/attic/tutoring.

* Please Note: The schedule may vary from semester to semester.

Testing

The ATTIC administers the following tests:

Math Advisory Test (MAT)

SPSU students take the math test to determine the level of math placement. The test consists of college algebra and pre-calculus. MAT scores will determine the appropriate starting point in SPSU's math sequence. Students may obtain MAT scores from their academic advisor or a program representative during an advising session, from the Testing Coordinator, the Coordinator of Disability Services, or from Banner.

Placement is based on the following scale:

If your score is	On this test	Start in this Mathematics Course
23 or lower	MAT 1+2	MATH 1111 College Algebra
24 or higher	MAT 1+2	MATH 1113 Pre-calculus
26 or higher	MAT 1+2	MATH 2253 Calculus
AND		Or
8 or higher	MAT 3	MATH 2240 Elements of Calculus
28 or higher	MAT 1+2	MATH 1113 Pre-calculus OR
AND		MATH 2253 Calculus I OR
630 or higher	SAT	
OR		MATH 2240 Survey of Calculus
28 or higher	ACT (Math)	(MATH 1113 is recommended)

Students are eligible to take any mathematics course at SPSU for which they have met all prerequisites. The ATTIC and the Mathematics Program offer math tutoring.

COMPASS

Non-traditional students-students should take COMPASS. The test consists of writing, reading, and math sections. A proctoring fee must be paid in advance of the test. Students may call 678/915 -7361 to make an appointment to take the COMPASS test. COMPASS testing can also be scheduled online via www.spsu.edu/attic.

Disability Services

SPSU does not discriminate on the basis of an individual's disability and is committed to providing students with full and equal enjoyment of services, facilities and goods on campus as required by law. If you are a student with a qualified disability and are in need of a reasonable accommodation, you must contact the Office of Disability Services. The Disability Services Advisor coordinates academic support services for students who have a permanent qualified disability.

International Student Services

International Student Services advises the University's international student body, faculty, and staff on Immigration and Naturalization regulations. The coordinator provides student assistance with banking, social security, insurance, housing, employment, practical and curricular practical training, travel regulations, income tax, and the lottery.

International Student Services provides cultural, social, and educational programs. Baptist Collegiate Ministries, Friends of Internationals and AMIS (American Ministry of International Students) sponsor family and community activities.