

Graduate Academic Catalog

2005-2006

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**Southern Polytechnic State University in the University System of
Georgia**

Lisa A. Rossbacher Ph.D, President

**1100 South Marietta Parkway
Marietta, Georgia 30060-2896**

Southern Polytechnic is a special-purpose institution in the University System of Georgia, with approximately 3800 students. We have a unique, statewide mission to offer bachelors' and masters' degrees and continuing professional development in science, engineering, technology, architecture, communication, and related fields. We focus on how to apply knowledge and to use technology to solve real world problems and contribute to Georgia's economic development. We attract outstanding students, whose entering SAT scores are among the three highest in the University System (along with Georgia Tech and the University of Georgia). Employers love hiring our graduates because they are well prepared for the workforce.

General Information

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. Information on changes will be available in the Office of the Registrar and major academic program offices. 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.

Student Rules and Regulations

The rules and regulations for Southern Polytechnic State University students are comprised of the catalog sections on Academic Regulations and Student Life Regulations. These regulations are intended to set forth the requirements of the faculty to the end that a large student body may live and work together harmoniously with a minimum of friction and misunderstanding. Each student is expected to be familiar with these catalog sections. 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 including those appearing on official campus bulletin boards and in the official school newspaper. Students are also expected to keep the university apprised of their current mailing address and email address. All official notifications are issued by way of email.

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 that 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, which is under the control of the Board of Regents of the University System of Georgia, and on any public or private property within five hundreds yards of property under the control of the Board of Regents.

Our officers conduct preventive patrols on campus including the residence halls; are responsible for the security of 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 campus. **Our program complies with The Jeanne Clery Disclosure of Campus Security Policy and Crime Statistics Act. Our disclosure report can be found on the police department web page at <http://police.spsu.edu>.**

Accreditation

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

Southern Polytechnic State University is **regionally accredited by the Commission on Colleges of the Southern Association of Colleges and Schools** (1866 Southern Lane, Decatur, GA 30033-4097, Telephone: 404-679-4501).

All Bachelor of Science degree programs in Engineering Technology are accredited by the Technology Accreditation Commission; ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone: 410-347-7700; email accreditation@abet.org, website: <http://www.abet.org>.

The National Architectural Accrediting Board, Inc. (NAAB) accredits the Bachelor of Architecture program. (www.naab.org)

The American Council for Construction Education (ACCE) accredits the Bachelor of Science program in Construction. (www.acce-hq.org)

The Association of Collegiate Business Schools and Programs (ACBSP) accredits the Master of Business Administration, B.S. in Management, B.A.S. in Management, and B.A. in Management

Programs of Study

Southern Polytechnic State University offers the following programs of study:

Master of Business Administration (MBA)

Master of Science programs with majors in:

- Computer Science
- Construction
- Engineering Technology (Electrical Concentration)
- Quality Assurance
- Technical and Professional Communication

Master of Science in Information Technology

Master of Science in Software Engineering

Master of Science in Systems Engineering

Associate of Science transfer program in General Studies

Bachelor of Applied Science

Bachelor of Architecture program

Bachelor of Arts programs in:

- Computer Science
- International Technical Communication
- Management
- Mathematics
- Physics

Bachelor of Science programs with majors in:

- Apparel/Textile Engineering Technology
- Biology
- Civil Engineering Technology
- Computer Engineering Technology
- Computer Science
- Construction
- Electrical Engineering Technology
- Industrial Engineering Technology
- International Studies: Global Technology
- Management
- Mathematics
- Mechanical Engineering Technology
- Physics
- Surveying and Mapping
- Technical and Professional Communication

Bachelor of Science in Information Technology

Bachelor of Science in Software Engineering

Bachelor of Science in Telecommunications Engineering Technology

Certificates

In addition to the above degree programs, SPSU also offers certificates in the following areas:

Graduate

- Graduate Certificate in Software Engineering (CSE)
- Graduate Certificate in Quality Assurance (ETM)
- Graduate Transition Certificate in Computer Science (CSE)
- Graduate Transition Certificate in Information Technology (CSE)
- Graduate Certificate in Information Technology (CSE)
- Graduate Certificate in Technical Communication

Undergraduate

- Professional Certificate in Programming (CSE)
- Certificate in Apparel Product Development (ETM)
- Certificate in Quality Principles (ETM)
- Certificate in Production Design (ETM)
- Certificate in Logistics (ETM)
- Certificate in Engineering Sales (ETM)
- Certificate in Land Surveying (ACC)
- Professional Certificate in Project Management (Construction) (ACC)
- Professional Certificate in Development (Land) (ACC)
- Professional Certificate in Specialty Construction (ACC)
- Professional Spanish

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

Admissions Information

General Information

Admission to Southern Polytechnic State University is made without regard to race, nationality, sex, or religion. Admission to Southern Polytechnic State University 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

Formal appeals of the University's admission decision may be filed with SPSU's Director of Admissions. Contact the Office of Admissions 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 Admissions Office by the application deadline date for the semester in which the applicant plans to enroll.

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

- All applications must be accompanied by a non-refundable \$20.00 application fee. Checks should be made out to Southern Polytechnic State University.
- Complete both sides of the application, sign and return with application fee, to the Admissions Office. Southern Polytechnic State University, 1100 South Marietta Parkway, Marietta, GA 30060-2896.
- Request that **ALL** colleges and universities that you have attended send **Two (2)** official transcripts to the Admissions Office. Only official transcripts mailed directly from the colleges will be accepted. Official student copies will not be accepted. Note: If you have attended Southern Polytechnic State University, you need only the transcripts which are not already on file.*
- Complete the Certificate of Immunization and return it to the Admissions Office. Note: If you attended Southern Polytechnic State University, you are not required to complete the Certificate of Immunization.

- Submit three reference forms from former college professors, employers, or other people who are familiar with your abilities. Mail the reference forms to the address listed on the front of the form. Technical and professional communication applicants are required to submit three reference letters instead of reference forms.
- Students whose native language is not English must submit minimum TOEFL scores of a total of 550 (213 computer-based) to the Admissions Office. Students who are on F-1 visas will also need to provide a financial affidavit indicating financial security to the Admissions Office. Students who have academic work outside of the United States will also be required to complete and submit to the Admissions Office an International Educational Summary Sheet. Note: Southern Polytechnic State University reserves the right to require applicants to send their international educational credentials to a professional evaluation service before being considered for admission.
- Submit individual graduate program requirements as indicated.

*** TWO (2) OFFICIAL TRANSCRIPTS FROM EACH COLLEGE ATTENDED ARE REQUIRED TO BE SUBMITTED TO THE ADMISSIONS OFFICE.**

Special Accommodations

Upon acceptance and before enrollment, any student with a documented disability or special need must notify the Disability Services Coordinator in the Advising, Tutoring, Testing, and International Center (ATTIC) of any particular accommodations required.



Financial Aid Information

Purpose and Philosophy

Southern Polytechnic State University subscribes to the principle that the primary purpose of a financial assistance program is to provide aid to students who without such assistance would be unable to attend or remain in school.

The financial aid program is intended to assist students in meeting normal university expenses and to help as many students as possible. An applicant should realize, however, that the amount of financial aid granted seldom meets all the student's educational expenses.

Steps to Apply for Financial Aid

Usually, step one in applying for financial aid is to fill out the Free Application for Federal Student Aid (FAFSA), which is available at the Student Financial Aid Office, or on the World Wide Web at www.fafsa.ed.gov.

Although applications are processed until all federal funds are expended, students who apply by the March 15 deadline have a greater chance of receiving the maximum amount of federal 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. Office of Education. An application, each year, is required to continue to receive financial aid.

Information and applications 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.

Types of Financial Aid

Types of aid for which graduate students might be eligible include:

- The Federal Work Study Program (FWSP)
- The Federal Family Educational Loan Program

Depending on financial need, the maximum that a graduate student may borrow from the combined Subsidized and Unsubsidized Stafford Loan Program is \$18,500 per year and only \$8,500 in subsidized per year maximum. The total limit is \$138,500 and not more than \$65,500 can be in subsidized loans.

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:

- (1) a maximum time frame requirement,**
- (2) a completion rate requirement, and**
- (3) 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.

Completion Rate Requirement

In order to complete a program of study within the required time frame, the aid recipient must complete 66.7% 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

Graduate students receiving financial aid must maintain a cumulative grade point average (GPA) 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.

Other Financial Information

Tuition and Fees

SEMESTER RATES, EFFECTIVE FALL 2005

Georgia Residents

Credit Hours	1	2	3	4	5	6	7	8	9	10	11	12 or more
Undergraduate	386	496	606	716	826	936	1046	1156	1266	1376	1486	1587
Graduate	407	538	669	800	931	1062	1193	1324	1455	1586	1717	1848

Non-Residents

Credit Hours	1	2	3	4	5	6	7	8	9	10	11	12 or more
Undergraduate	713	1150	1587	2024	2461	2898	3335	3772	4209	4646	5083	5519
Graduate	801	1326	1851	2376	2901	3426	3951	4476	5001	5526	6051	6567

Distance Learning Options

1. SPSU Distance Learning Tuition and Fees 2005-2006

Courses to which distance learning tuition and fees apply are those courses in which at least 94% of the content is delivered via distance education (Internet, GSAMS, others) as determined by the SPSU faculty. These courses are designated in the bulletin as Section 900 or above courses.

<u>Program or Level</u>	<u>Tuition</u>
Undergraduate (resident and non-resident)	\$180.00 / credit hour
Graduate (resident and non-resident)	\$216.00 / credit hour
Technology Fee	\$75.00 / semester

2. WebBSIT Distance Learning Tuition and Fees 2005-2006

The WebBSIT is a Bachelor of Science in Information Technology degree offered online via the Internet. It is a collaborative project of five University System of Georgia colleges and universities including SPSU.

<u>Program or Level</u>	<u>Tuition</u>
Web BSIT (resident or non-resident)	\$265.00 / credit hour
Technology Fee	\$75.00 / semester

3. eCore Distance Learning Tuition and Fees 2005-2006

SPSU is a USG eCore Affiliate. eCore classes include the university core curriculum offering in a fully online format. For more information or to enroll in eCore please contact Extended University at 678/915-3714.

<u>Program or Level</u>	<u>Tuition</u>
eCore Classes (resident or non-resident)	\$138.00 / credit hour

Student Fees

The Board of Regents of the University System of Georgia establishes matriculation and Non-Resident fees. All fees and charges are subject to change without notice; however, Southern Polytechnic will make every effort to communicate changes as they occur.

The following required fees are included in the above charges for all enrolling students:

- Activity \$41
- Recreation - Wellness Center \$51
- Athletic \$86
- Health Service \$23
- Technology \$75

Parking Fees of \$15.00 are not included.

OTHER APPROVED FEES

DETAILED STUDENT CHARGES FOR FALL, SPRING, SUMMER SEMESTER(s) 2005 - 2006

Miscellaneous Fees	Amount
PO Box Rental	\$9.00
Credit by Examination Fee	\$50.00
Student Center Locker Rental- Initial	\$8.00
Student Center Locker Rental -Renewal	\$5.00
Graduation Fee	\$25.00
Late Graduation Petition Fee	\$100.00
Graduation Update Fee	\$25.00
Late Registration Fee	\$25.00
Returned Check Fee	\$25.00
International Student Insurance (per term) <i>Pro-Rated for Summer Term</i>	\$189.00
Vehicle Parking (per term)	\$15.00
Application Fee - Domestic Applicants	\$20.00

DORMITORY RATES	Amount
Howell Hall - Double Room Occupancy Only	\$1,605.00 per Term
Norton Hall - Double Room Occupancy Only	\$1,605.00 per Term

APARTMENT RATES Per Unit (rented by the bedroom)	Amount
University Commons Apartments 2 Bedrooms, 2 Baths	\$515.00 Per Month
University Commons Apartments 4 Bedrooms, 2 Baths	\$435.00 Per Month
University Courtyard Apartments 4 Bedrooms, 4 Baths	\$495.00 Per Month
Application Fee	\$100.00

- All Dormitory Residents are Required to Purchase Either a Fourteen or Nineteen Day Meal Plan

MEAL PLANS *	Amount
Seven Meal Plan (One Meal Per Day over a Seven Day Period)	\$650.00
Fourteen Meal Plan(Two Meals Per Day over a Seven Day Period)	\$980.00
Nineteen Meal Plan - 3 Meals Per Day(Includes a Weekend Brunch and Dinner)	\$1,140.00

- All Dormitory Residents are Required to Purchase Either a Fourteen or Nineteen Day Meal Plan

Fee Payment

Registration and fee payment dates are published in the registration bulletin. Payment of fees and other charges may be made with:

- Cash
- Checks
- Approved financial aid
- Credit cards

(Visa, MasterCard, and American Express are accepted on campus in the Business Office and the University Bookstore.) Debit cards issued under the HONOR system (ATM) are also accepted.

Registration fees may be paid on the SPSU web site using the same credit cards. 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 shall be considered enrolled and space shall be reserved in the class(es) for the duration of the term.

Payment of matriculation or non-resident matriculation shall not be accepted after the close of business at the end of the official drop/add period. Students are encouraged to register and pay fees as early as possible to avoid potential problems. Students who pay residence hall fees after the official drop/add period will be assessed a non-refundable late payment fee of \$45.

All payments returned to the University due to insufficient funds are subject to a \$25.00 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 of twenty five percent in addition to the original debt owed to the University.

Cancellation of Registration

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

Advanced Registration

SPSU offers an advanced registration period for currently enrolled students to give them the opportunity to secure a schedule for a coming term. In order to keep a schedule that is produced during advanced registration, students must:

- Register for classes during the advanced registration period
- Pay for classes (or apply for financial aid) before the published fee payment deadline for advanced registration (students who have signed an official award letter which signifies acceptance of the financial aid award are considered to have paid their fees)

If these actions are not taken, the schedule will be removed from the computer system and the student will be required to register again during regular registration.

Regular Registration

Regular registration is the period immediately before the beginning of a term when a student registers for classes.

The registration process is not complete until payment of 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 deadline for regular registration is published each term in the registration bulletin.

Delinquent Accounts

All delinquent debts and/or obligations to the University 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 of twenty five percent in addition to the original debt owed to the University.

Refund of Fees and Charges

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.**

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 in the Registration Bulletin.

Residence hall charges are refunded on a pro-rata basis, only by separate application to the Director of Housing and Residence Life. Refunds are subject to the rules and regulations regarding student responsibilities in the residence halls, as outlined in the Student Handbook.

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.

Vehicle Parking Fee

Students who are currently enrolled may purchase a parking permit each term at a cost of \$15. Permits valid for the academic year (fall, spring, and summer terms) are available at a cost of \$45. A limit of one vehicle per student is allowed on campus at any given time. To avoid traffic fines, parking permits must be purchased prior to the end of the first week of classes. For additional information and a copy of university parking regulations, contact the University Police Department.

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.

Graduation Fee

Every student receiving a degree must pay a graduation fee of \$25. **The final due date for payment of this fee is published in the registration bulletin. Students who fail to observe the petitioning deadline are charged a late fee of \$75.00 (in addition to the \$25.00 fee).**

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 Office of Business and Finance along with payment of tuition and miscellaneous fees. Purchase of this insurance policy is mandatory each semester.

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 matriculation and 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



Student Affairs and Student Life

The student affairs areas at Southern Polytechnic State University include:

- Student housing
- Student activities
- The Student Center
- Student health services
- Recreational sports and intercollegiate athletics
- Career & Counseling services
- Cooperative education
- Judicial Programs

The Dean of Students supervises a professional staff which is responsible for providing these services and activities for students. In addition, the Dean of Students should be contacted by students with hardship situations or by those who are encountering difficulties with campus life.

Emergency Locator Service

Emergency assistance in locating a student is provided by the Office of the Dean of Students (678-915-7374) during normal school hours, 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 (678-915-5555).

Student Housing

With the addition of newly built and acquired apartment units, SPSU now offers nearly 1200 on-campus beds for student housing. In addition to providing a convenient and economical “home”, on-campus living also meets a student’s physical needs of shelter, comfort, and attractive surroundings. Living on campus contributes to the educational development of each student through exposure to students of varied backgrounds, experiences, and personal philosophies. The Director of Residence Life, who is assisted by a professional staff from the Ambling Management Company and paraprofessional student staff, supervises the Residence Life program. The primary function of the residence life staff is to create and maintain a desirable environment for all residents.

Application

All students who have applied for admission to Southern Polytechnic State University and who have requested information about on-campus housing will be sent an application. Since space is limited, it is important to make requests for housing early. A request for housing consists of:

- The completed and returned Residence Life lease agreement
- A \$100 application fee

The application and fee should be sent to the University’s Residence Life Office. However, completing the request does not guarantee housing will be assigned. When the lease agreement and deposit have been received, a notification of housing status will be sent by Residence Life.

The Director of Residence Life is responsible for all room assignments. Preferences for a specific residence hall or apartment will be honored whenever possible. Mutual roommate requests should be so marked on the lease agreements of both students. Consideration of a roommate request will be given providing the request is mutual and space is available.

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. If the nurse cannot provide sufficient medical treatment, she

may refer the student to a medical 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.

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 for any student paying the Student Health Fee.

Career and Counseling Center

Counseling Services

The Career and Counseling Center offers a variety of counseling services to students, including help with 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 environment and from their classes. Professional counselors provide **individual sessions for students** seeking confidential assistance with these and other personal issues.

Part of the career development process involves increasing our self-understanding in such areas as our 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 around 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 to develop skills in stress management, overcoming test anxiety, test-taking strategies, academic motivation, and enhancing memory by understanding learning style.

The Career and Counseling Center provides a variety of tests that are adjunctive to counseling services. With the student's consent, counselors use these instruments when they feel that the data provided will facilitate the student's use of the service.

Counselors provide outreach programs on many topics, including stress management, assertiveness training, depression, deciding on a major, relationship building, and special student concerns.

All counseling services are **free of charge**, confidential, and are available on an appointment or a walk-in basis.

Career Services

The Career and Counseling Center provides placement assistance for graduates and students seeking full-time or part-time 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
- Resume referral
- Campus interviews

In addition, the Center maintains employer and occupational information as well as part-time and temporary job listings.

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

Students interested in part-time or temporary employment should survey the jobs listed on the Career and Counseling Center web page. Some of the jobs require technical expertise; however, many require no experience. Most students seeking part-time employment are able to find suitable work in the metro area. Alumni assistance is also offered through the Career and Counseling Center. Employment opportunities for alumni are posted through our Career Lane database on the Center's web page.

Internship Program

The Southern Polytechnic State University Internship program is a short-term work experience in a professional environment where the emphasis is on learning versus earnings. It is designed to enhance academic, personal, and professional development and will assist you in making a smooth transition from the classroom to the world of work, or 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.

Internship Eligibility and Requirements:

- Must be a registered student at the time of application to the program
- Must have completed at least one semester
- Must have maintained at least a 2.0 GPA (undergraduate)
- Must have maintained at least a 3.0 GPA (graduate)

International Students

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

Advantages include:

- Providing career related hands-on work experience
- Earning a competitive salary for school and tuition expenses
- Learning the company culture
- Networking with professionals
- 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
- Improving opportunities for post graduate jobs
- An opportunity to work with professionals in your field
- Learning to work with colleagues

The Student Center

Southern Polytechnic State University's Student Center includes:

- Food service and dining areas
- A 475 seat theater for films, concerts, and entertainment productions
- A bookstore
- A post office
- A large recreation room featuring pool and ping-pong tables
- Additional meeting rooms, lounges, and TV/video viewing areas
- A Cyber Café offering 8 internet & e-mail computer stations

Offices for the Dean of Students, Student Activities, and Counseling & Career Services are also located in the student center.

The student center is the focal point for the majority of entertainment activities provided by the Campus Activities Board including concerts, dances, and videos. Also, the student government, newspaper, radio station, fraternity/sorority and other student organization offices are located here. The Student Center is where the Southern Polytechnic State University community comes together to eat, meet, relax, and be entertained.

The 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.

The Post Office

The Southern Polytechnic State University 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.

Athletics and Recreational Sports

The Department of Recreational Sports maintains a comprehensive program of activities that appeal to the leisure time interests and needs of the campus community.

Activities available through the intramural sports program include competitive team sports leagues such as flag football, volleyball, basketball, and softball.

There are also individual competitive tournaments such as billiards, golf, tennis, and racquetball.

In addition to the intramural sports program, the department offers:

- A club sport program
- A wellness program
- Special events
- An outdoor recreation program

The outdoor recreation program sponsors various adventure trips throughout the year.

Recreational Facilities

The Recreation and Wellness Center, opened in the summer of 1996, offers many recreational opportunities to the student. A state of the art weight room that includes free weights, Cybex weight training, 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 and one large multipurpose field for student use. The intramural sports program makes use of these fields throughout the year with flag football, soccer, and softball leagues. Also included in the complex are 9 tennis courts and a half-mile jogging trail. The Southern Polytechnic Tennis Team uses the tennis courts for matches and practice.

Athletic Facilities

SPSU competes in the NAIA (National Association of Intercollegiate Athletics) Division I and is a member of the Southern States Athletic Conference. The University has three intercollegiate sports teams:

- Men's Basketball
- Woman's Basketball
- Baseball

The Athletic Department offices are located in the Athletic Gymnasium.

The ATTIC

The ATTIC (Advising, Tutoring, Testing, International Center) represents the collaboration of student services at SPSU. Located in J 253, the ATTIC houses advising for Joint Enrollment and General Studies students, Tutoring, Testing, International Student Services and Disability Services. For more information, call (678) 915-7361.

Tutoring

The ATTIC provides opportunities for individualized assistance to Southern Polytechnic students. Tutors help students with core courses in English, mathematics, physics, and ESOL (English to Speakers of Other Languages). Tutoring is conducted in J210 from 9:00-2:00 Monday-Friday and 5:00-8:30 Monday-Thursday.

Disability Services

The Disability Services/Testing Advisor coordinates academic support services for students who have a permanent or temporary disability. Individuals eligible for services include, but are not limited to, those with mobility, hearing, learning, visual, speech, or specific neurological disabilities. Services are available free of charge on a self-referral basis.

Students at Southern Polytechnic State University who have a disabling condition and need academic accommodations have the responsibility to voluntarily self-identify by scheduling an appointment with the Disability Services Advisor as soon as possible.

The ATTIC is responsible for providing special assistance for students diagnosed as having specific learning disabilities. To become eligible for special services at Southern Polytechnic State University, students must verify the specific learning disability by having a psychological evaluation on file in the ATTIC.

If you believe you have a specific learning disability, visit the ATTIC for more information.

Under the Americans with Disabilities Act (ADA), special services are available through the ATTIC to any learning-disabled student at Southern Polytechnic State University. All such services are offered based on individual needs.

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. CultureFest introduces international students' culture, food, and talent to the SPSU community. Friends of Internationals and AMIS (American Ministry of International Students) sponsor family and community activities.

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 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 program and service units. For more information regarding these programs and services, contact the EU Dean's Office at 678/915-3714, stop by J -330, or visit the unit's web site at: <http://eu.spsu.edu>

Office of Continuing Education

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

- BICSI/SPSU Telecommunications
- Certified in Convergent Network Technology (CCNT)
- Certified Information Systems
- Certified Professional Fiber Optic Installer
- Certified Quality Manager
- CISCO Certified Network Associate (CCNA)
- Distribution Fundamentals (TDF)
- E-Business Solutions in Java
- Embedded Systems (Yamacraw)
- Linux Professional and Linux +
- Microsoft Certified Systems Administrator
- Microsoft Office Specialist
- Network + and A +
- Oracle9i Database
- Outside Plant Engineering
- Practitioner (SSCP)
- Professional Project Management Certificate
- Security +
- Security Professional (CISSP)
- Six Sigma – Green and Black Belt
- Systems Security Certified
- Web Development

Call 678/915-7240 for additional information or check the OCE web site at: <http://oce.spsu.edu>

Office of Distance Learning (ODL)

The Office of Distance Learning (ODL) provides administrative, marketing and technical support for distance learning activities at SPSU. SPSU has offered distance-learning options in a variety of formats since 1995. Academic programs maintain the responsibility for program selection, content and delivery and ODL assists with administration and marketing as well as providing full technical support including development and delivery support. Methods for distance delivery at SPSU include videoconferencing, web and satellite. For more information go to <http://eu.spsu.edu/DistanceLearning>

Center for Quality Excellence (CQE)

The CQE, a training and consulting unit of the Office of Continuing Education, is an organizational development and improvement center that provides information, training, consulting, technical assistance, and research, focused on the body of knowledge that relates to Quality Management, ISO 9001:2000, Six Sigma, CQM, CQIA, Customer Service, and Team Development. The CQE provides these services to private and public organizations to help them improve their organizational effectiveness and compete more successfully in the global marketplace. For more information go to: <http://cqe.spsu.edu>

Academic Certificate Programs

Academic programs at SPSU may select to develop academic credit certificate programs through the Extended University. Certificate programs may enhance the University's programming by:

- Providing "bridge" programs to existing or new degrees
- Providing career transition opportunities
- Offering professional continuing education to selected professions
- And/or responding to industry-identified needs for retraining.

Current credit certificates include:

Undergraduate Programs in:

- Professional Certificate in Programming (PCIP)

- Certificate in Apparel Product Development (CAPD)rrrrrrrrrrrr1
- Certificate in Quality Principles (CQP)
- Certificate in Production Design (CPD)
- Certificate in Logistics (CL)
- Certificate in Engineering Sales (CES)
- Professional Certificate in Project Management (PCPM)
- Land Surveying Certificate (LSC)
- Professional Certificate in Development Land (PCD)
- Professional Certificate in Specialty Construction (PCSC)
- Certificate in Professional Spanish

Graduate Programs in:

- Graduate Certificate in Software Engineering (GCSWE)
- Graduate Certificate in Quality Assurance (GCQA)
- Graduate Transition Certificate in Computer Science (GTCCS)
- Graduate Certificate in Information Technology (GCIT)
- Graduate Transition Certificate in Information Technology (GTCIT)
- Graduate Certificate in Technical Communication (GCTCOM)

For more information go to: <http://eu.spsu.edu/CertificatePrograms>

Grant Development Center (GDC)

The Grant Development Center is designed to assist faculty and staff with identifying and securing sources of external funding to increase research and service. For more information go to:

<http://eu.spsu.edu/GrantDevelopmentCenter>

The Usability Center (UC)

Since 1995, The Usability Center at Southern Polytechnic has been helping clients apply usability concepts to products in the development process. This allows the user's experience to improve the product before it reaches market. The Usability Center provides usability testing, consultation, lab management, cognitive walk-through, heuristic evaluations, usability research, as well as participant recruitment and selection, and other customized usability related services. For more information go to: <http://usability.spsu.edu>

Computing and Software Engineering - Industry Liaison

Services include the support and development for Industry Advisory Board, CSE newsletter development, support of academic credit certificates, administration of the Software Engineering Retraining Program, management of Software Center projects and support for other special projects.

Software Center

The School of Computing and Software Engineering has long been known for applications-oriented educational opportunities. Students regularly participate in class projects, internships, and co-op assignments. In addition, the Software Center offers opportunities to connect business representatives and SPSU students and faculty in research and development projects. For more information go to: <http://eu.spsu.edu/ComputingandSoftwareCenter>

ICAPP Program Development

ICAPP Advantage prepares people to be knowledge workers (workers who generate value for others by creating, sharing or using ideas) in occupations that are in high demand and short supply in specific regional labor markets. ICAPP Advantage is directly tied to specific job commitments by employers.

- ICAPP was created to help employers succeed in Georgia. ICAPP is company-focused, and is not intended to create new degree programs at institutions.
- ICAPP Advantage can be used as an economic development incentive to encourage a company or other employer to either expand in or relocate to Georgia.
- ICAPP Advantage students earn credit hours that can count toward earning a degree. Students may also earn career-related certificates with the academic credit earned.

For more information go to: <http://www.icapp.org>

English Language Services (ELS)

ELS Language Centers provides 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. We provide full-time daily classes year-round in four-week terms. In addition, we offer specialized programs that are customized to fit your needs. For more information go to: <http://eu.spsu.edu/EnglishLanguageServices>

Center for Teaching Excellence (CTE)

At the Center for Teaching Excellence, our job is to facilitate communication on teaching and learning issues and help SPSU continue to be an exceptional teaching-focused university.

The goals of CTE are:

- To provide state of the art teaching resources
- To promote excellence in teaching and learning
- To identify and share best practices in teaching
- To recognize and reward excellence in teaching

For more information go to: <http://cte.spsu.edu>

The Library

General Information - The Lawrence V. Johnson Library collection consists of some 118,000 cataloged volumes and more than 1,300 periodical and serial titles. Other formats include microforms, U.S. Geological Survey maps for the State of Georgia, and CD-ROM products. The Reserves collection of professor reserves, and sample tests is made available to students for use in-house. E-Reserves is an increasingly popular service whereby professors and the library scan journal articles, lab schedules, sample tests, notes, and syllabi and deliver them electronically to the students.

GALILEO - Georgia Library Learning Online, popularly known as GALILEO, is an initiative funded by the University System that allows access to online databases, including full-text and full-image files. Faculty and students have access to more than 100 indexing and abstracting services and to the Internet. Additionally, students who bring their laptops will be able to access GIL, GALILEO and the Internet for research purposes in any of the Library's 30 study rooms.

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.

Additional information about services offered at the Johnson Library may be accessed at <http://www.spsu.edu/library/library.html>.

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.

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 <http://police.spsu.edu>.



Academic Regulations and Administrative Procedures

General Information

The university's academic rules and regulations are developed and approved by the faculty. The set of processes used to enforce regulations and maintain order are called administrative procedures. In general, each academic rule has an underlying administrative procedure.

For example, the criteria against which a student is judged for graduation is developed and approved by the faculty. The process that is used to examine records and declare a student eligible to graduate is an administrative procedure. Students may appeal either the faculty rule using a petition to the faculty, or the administrative procedure by using an administrative procedure petition. Examples of the kinds of issues that may be appealed are provided in the appropriate sections below.

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, a student who is within a year of graduating should review the graduation section and comply with the time table for petitioning to graduate. Frequently, the phrase "nobody told me" is used as justification for an appeal to a specific rule. Such justification is not acceptable.

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.

Definitions

Full-time Student – Full-time status is defined for each student level in the table below. Remember that other agencies (such as federal financial aid) may have different definitions of full-time. The definitions below are used when enrollment verifications are produced by SPSU. Note that the definition of full-time changes for summer semester.

Fall and Spring Semester				
	Part-Time	Half-Time	$\frac{3}{4}$ Time	Full-Time
Undergraduate	Less than 6 Hours	6, 7, or 8 Hours	9, 10, or 11 Hours	12 Hours or More
Graduate	Less than 4 Hours	4 or 5 Hours	6 or 7 Hours	8 Hours or More

Summer Semester				
	Part-Time	Half-Time	$\frac{3}{4}$ Time	Full-Time
Undergraduate	Less than 4 Hours	4 or 5 Hours	6 or 7 Hours	8 Hours or More
Graduate	Less than 3 Hours	3 or 4 Hours	5 Hours	6 Hours or more

NOTE: Most forms of financial aid (except HOPE) require that a student be registered for at least 6 hours without regard to the institutional definition of a full-time student.

Part-time Student – See table above.

Good Standing – A graduate student is in good standing who has a cumulative GPA of 3.00 or higher.

Grade Point Average – The grade point average is calculated by dividing the total quality points earned, by the total number of hours of credit for which grades have been received. Additional information is available on the registrar’s web pages.

Advanced Registration – The first period of open registration for a term. Dates are determined by the registrar and posted to the academic bulletin. The purpose of the advanced registration period is to allow current students in good standing the opportunity to secure needed classes and to provide an indicator of course needs for the university. In order to remain registered, students are required to secure their classes by paying for them either through financial aid, or with legal tender.

Regular Registration – The registration period immediately before the term begins. Regular registration includes a period of free registration that extends into the new term by several days. There is no implied or explicit intent to allow students to use regular registration and the drop/add period to “shop” for classes. The intended purpose of the drop/add period is to allow students ample time to develop a schedule and make necessary adjustments.

Audit – Students who audit classes must declare their audit status during the drop/add period. Auditing provides students with the opportunity to attend a class without penalty or risk. The "V" 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. Courses taken under the audit status carry the same tuition and fees as courses taken in the normal mode. See “Registration” later in this chapter for details about auditing courses.

Withdrawal – Withdrawal is defined as the official act of discontinuing participation in a course or courses during a time in which withdrawal is permitted (usually after the drop/add period or regular registration, but before the mid-point of the term). Withdrawal must be initiated by the student. Students who withdraw during the withdrawal period earn a grade of “W”. See “Registration” later in this chapter for details about withdrawing.

Drop – The term “drop” refers to the removal of a course from a student’s schedule during the official drop/add period. Dropping classes results in no grade being issued and no charge for tuition or fees.

Administrative Procedures – Administrative procedures are the steps and actions taken in order to follow established rules and regulations.

Term GPA – The term GPA is the pure GPA earned during any particular term of attendance at SPSU.

Cumulative GPA – The cumulative GPA is a student’s GPA that includes all course work taken throughout all terms of attendance at SPSU. Grades from other institutions are not included in a student’s SPSU cumulative GPA.

Appeals and General Processes

Exceptions to Academic Regulations

Exceptions to the Academic Regulations of Southern Polytechnic State University may be made by the faculty or by the Registrar whenever a consideration of the student's complete record indicates that the application of a specific regulation will result in an injustice.

Appeals Procedure

Any rule, regulation, or procedure can be appealed. Decisions are based on evidence that the student was treated unjustly or was not afforded the same opportunities as other students. It is not enough to simply claim "nobody told me". You must have quantitative proof that you were misadvised or misinformed by someone on SPSU's staff, or that you were not treated as other students were treated. Your version of the series of events that led to this situation must be clearly articulated and credible. Your evidence does not have to be prima facie, but it must provide enough reasonable doubt that you were afforded proper guidance to make a policy exception for your case.

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. Check with the Registrar's Office for the procedure to follow.

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:

- Receiving a grade of "W" past the withdrawal date
- Extension of the time limit for converting a grade of "I"
- Exceptions to residency requirements

Students should complete a Petition to the Faculty form when they feel the academic policies or procedures have not been applied, or will not apply, fairly or appropriately to them.

Students desiring to petition the faculty for an exception should see the registrar's office for information on how to proceed.

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.

Administrative Procedures Appeals

Matters requiring administrative petitions include requests for consideration for exceptions to established procedures, whether formal or informal. Examples include:

- Adding or dropping classes when registration is not open
- Correcting errors made during registration
- Having a schedule reinstated after it was removed for non-payment
- Having a schedule removed from the system for administrative reasons

Students should complete an administrative petition, available in the registrar's office, when they feel the administrative procedure has not been applied fairly or appropriately to them.

Exceptions to policy are based on evidence that the student was treated unjustly or was not afforded the same opportunities as other students. It is not enough to simply claim "nobody told me". You must have quantitative proof that you were misadvised or misinformed by someone on SPSU's staff, or that you were not treated as other students were treated.

The petition is reviewed and the student is notified of the decision by email. If the student wishes to appeal the decision, a second administrative petition should be initiated and marked as an appeal. A decision will be rendered by the appeal committee and delivered to the student via email.

Administrative Changes

Students are expected to keep the university apprised of changes to their postal address, and phone number. The official means of communication with students is via email. All SPSU students are provided an email account free of charge and are responsible for information and notices that are posted for them.



Classroom Regulations

Classroom Attendance

There are no formal institutional regulations regarding class attendance. Each classroom or laboratory instructor sets his or her own attendance policy. 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.

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.

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.

Attendance or participation in a class for which a student has not registered and paid is strictly prohibited without express permission from the office of the registrar.

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 the student cannot be reached, he or she will be given the grade of "Incomplete" until such time as he or she can be reached. The student shall have the right of appeal of the faculty member's decision

- first to the faculty member's Department Chair
- then to the appropriate school dean,
- and, if necessary, to the Vice President for Academic Affairs

Removal from a course under this provision will result in a grade of "F". 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.

Registration

Auditing Classes

The following rules apply to Audit courses:

- Audit courses count at full value in determining the number of credit hours for which the student is enrolled.
- No academic credit is granted for audited courses.
- Students may not change a class to or from audit status after the close of the drop-add period.
- The grade assigned for auditing is "V" (visited), and will have no effect upon the student's scholastic average.

Students will not be permitted to receive credit for their participation in a course as an auditor.

Additionally, students who audit a course will not be allowed to receive credit by examination or credit by experience for the same course.

Enrollment Verification and Student Status

Students desiring that their enrollment status be reported to an outside agency such as another university, or an insurance company, should fill out an enrollment verification request form in the registrar's office. Student status shall be reported as follows:

Fall and Spring Semester				
	Part-Time	Half-Time	$\frac{3}{4}$ Time	Full-Time
Undergraduate	Less than 6 Hours	6, 7, or 8 Hours	9, 10, or 11 Hours	12 Hours or More
Graduate	Less than 4 Hours	4 or 5 Hours	6 or 7 Hours	8 Hours or More

Summer Semester				
	Part-Time	Half-Time	$\frac{3}{4}$ Time	Full-Time
Undergraduate	Less than 4 Hours	4 or 5 Hours	6 or 7 Hours	8 Hours or More
Graduate	Less than 3 Hours	3 or 4 Hours	5 Hours	6 Hours or more

Note that the federal government and some other agencies have different definitions of student status. For example, without regard to the above table, all undergraduate students must be enrolled in at least 6 hours to qualify for most types of financial aid (HOPE excepted).

Maximum Credit Hours

Students may register for a maximum of:

Fall And Spring	Student Type	Maximum Hours
	Undergraduate	18
	Graduate	12
Summer		
	Undergraduate	14
	Graduate	12
Students On Probation		
	Undergraduate	13
	Graduate	12
For an exception to these maximums, see your academic Department Chair.		

Classification of Students

Credit Hour

Definition of a Credit Hour - One credit hour 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. Some exceptions exist.

Full-time Students

Undergraduate students enrolled for 12 or more credit hours are considered full-time students. Undergraduate students enrolled for 8 or more hours during summer term are considered full-time.

Graduate students enrolled for 8 or more credit hours are considered full-time students. Graduate students enrolled for 6 or more hours are considered full-time during summer term.

Note that the federal government and some other agencies have different definitions of student status. For example, without regard to the above table, all undergraduate students must be enrolled in at least 6 hours to qualify for most types of financial aid (HOPE excepted).

Withdrawal From Classes

Students desiring to withdraw from one or more classes before the midpoint of the term may do so by:

- Completing a Request to Withdraw at the Registrar's Office
- Or withdrawing through the Web-based registration system
- Or by sending a signed fax or letter to the registrar's office

After doing so, the student will be assigned a grade of "W" for those course(s). While a grade of "W" does not count in the student's cumulative grade point average, it does count in attempted hours for financial aid purposes and could affect a student's eligibility for aid if there are repeated withdrawals.

Refunds associated with withdrawals are made only in the case where a student withdraws completely from all classes for a term. Refunds are based on the date of the withdrawal and are pro-rated. By University System of Georgia rule, refunds are not initiated for withdrawing from a portion of registered classes.

Withdrawing After the Mid-Point

Students who withdraw after the midpoint of the term are not eligible for a grade of "W" except in cases of hardship or extenuating circumstances as approved by the faculty. (See Administrative Procedures for instructions.) Students withdrawing after the withdrawal deadline date receive a grade of "WF" for the course(s), which counts the same as an "F" for grade point purposes.

Grades, Transcripts, Student Records and Academic History

Changing Your Student Record

Changing your major

If any student decides to pursue a different program of study than the one originally listed on the admissions application, the student must officially change majors by:

- Visiting the registrar's office and completing a change of major form
- Or visit the student information system on-line and initiate a change of major.

Note that you must have permission to enter some majors.

Changing your demographic information

Most demographic information such as address or phone number can be changed by the student using the student information system on the World Wide Web. To change your name or social security number, you must visit the registrar's office with appropriate documentation.

Note that the official means of communication between the university and students is email. It is the responsibility of the student to check in the student information system and to check email daily for notices posted to them.

Removal of Previous Major Courses

Students may request deletion of previous major courses for graduation scholastic average and hours purposes by completing a Petition to the Faculty. 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 non-core 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. Courses included in the University System of Georgia core are not excluded.

Transcript Request

Students must request transcripts in writing from the Registrar's Office. All transcripts will include the entire academic record; no partial or incomplete record will be issued as a transcript. Though transcripts are normally issued promptly, requests should be made several business days before the document is required, particularly at the beginning or end of a semester. A transcript will not be issued when a student's record shows financial indebtedness to the institution. Transcripts may be ordered in person in the Registrar's Office, or by faxing or mailing a signed request.

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 in the Registrar's Office.

Cross Registration

Students may not attend Southern Polytechnic State University and another institution concurrently for transfer purposes, except under the cross registration program.

Southern Polytechnic State University 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.

Applications and additional information about cross registration can be obtained from the Registrar's Office.

Withdrawals After the Deadline

A request for a grade of "W" (past the deadline date) is properly made on a Petition to the Faculty form, available in the Registrar's Office.

- The petitions must be completed and signed by the student's instructor(s), instructors' Department Chair(s), and major Department Chair.
- The petition must be accompanied by documentation sufficient to support the extenuating circumstances claimed.

Students will be advised in writing by the Registrar's Office as to the action taken on their petition.

No student will be allowed to withdraw from a course after the final class day of the term except via the petition process.

Students withdrawing from **all** classes during the refund period are entitled to a refund of a portion of the fees paid for the course(s). Students should check the Registration Bulletin to determine the date and amount of refund (if any) available. **No refunds are made for partial withdrawal.**

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, 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
- Place of birth
- Class schedule
- Current enrollment status
- Dates of attendance
- Major field of study
- Participation in officially recognized activities and sports
- Degrees and awards received
- Hometown
- Weight and height of members of athletic teams
- Prior college(s) attended

Policies and procedures

Specific policies and procedures for the maintenance of student records according to the Board of Regents of the University System of Georgia and the test of the Family Educational Rights and Privacy Act of 1974 are available for review in the Registrar's Office.

Destruction of Records

The complete academic record of all matriculating students will become permanent records of the institution. Following the third continuous term of non-enrollment by a student, the nonacademic records will be placed in an inactive, but accessible status. Following the end of the ninth year of inactive status, the nonacademic records will be purged and destroyed by the official responsible for their maintenance.

Students also have the right to file complaints with the FERPA Office of the Department of Education, Washington, D.C., 20201, regarding alleged violations of the Act.

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 1111K (Trigonometry based Physics I) and then takes PHYS 2211K (Calculus based Physics I), only one may be counted as hours earned, and only one may be used for graduation purposes.

Credit for Courses Completed More than Ten Years Prior to Graduation

Work completed more than ten years prior to the date of graduation may be credited toward degree program requirements with the approval of the student's major Department Chair, or if the student's enrollment at Southern Polytechnic State University has been continuous since the course was taken.

Continuous Enrollment

To remain continuously enrolled, a student must not have an absence of two or more consecutive terms of matriculation at Southern Polytechnic State University, summer semester included.

Academic Standing

In order to graduate a graduate student must achieve a cumulative grade point average of 3.00

Good Standing

To be considered in good academic standing a graduate student must have a cumulative GPA of 3.00 or better.

Academic Probation

Academic probation is assigned to graduate students whose cumulative GPA falls below 3.00.

Continued Probation

A student whose cumulative grade point average remains below 3.0 for two or more consecutive terms of enrollment, but whose term average is 3.0 or higher, may continue enrollment on probation.

A student may continue enrollment while on probation. However, if a student on probation fails to achieve a term grade point average of at least 3.00 (for graduate students) the student will be placed on dismissal.

Academic Suspension

An undergraduate student whose semester grade point average is below 3.0 and whose cumulative grade point average is below 3.0 for at least two consecutive terms of enrollment shall be academically dismissed for unsatisfactory scholarship. (There are currently no provisions for the reinstatement of a dismissed graduate student.)

Grading System

Regular Grades

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

Grade	Definition	Comments
A	Excellent	
B	Good	
C	Satisfactory	Passing, but often must be repeated if needed for graduation
D	Poor	Usually must be repeated if required for graduation
F	Failure	Course must be repeated if required for graduation
WF	Late Withdrawal	A grade of "WF" in a course is assigned upon official withdrawal after the midpoint of the term, and is counted in the student's scholastic average as a failing grade.

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 symbols are used in the cases indicated but are not included in the calculation of semester or cumulative grade point averages:

Grade	Definition	Comments
I	Incomplete	This symbol indicates that a student was doing satisfactory work but, for nonacademic reasons beyond his or her control, was unable to meet the full requirements of the course (An incomplete must be removed during the next term in which the student attends classes, otherwise the Registrar's Office shall convert the "I" into an "F".)

		Once an incomplete grade is issued, a student should not re-register for the course until the grade becomes permanent, or converts to a permanent grade.
IP	In Progress	This grade indicates that credit has not been given in courses that require a continuation of work beyond the term for which the student signed up for the course. The use of this symbol is approved for thesis and project courses. This symbol cannot be substituted for an I (incomplete).
V	Audit	The "V" 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 grade of "W" is assigned when a student officially withdraws from a course before the midpoint of the term. Courses carrying the "W" grade will not be counted in the student's scholastic average.
S	Satisfactory	This symbol indicates that credit has been given for completion of degree requirements other than academic course work.
U	Unsatisfactory	This symbol indicates unsatisfactory performance in an attempt to complete degree requirements other than academic course work.

Cumulative Grade Point Average

Computing the GPA

The cumulative grade point average determines the student's scholastic standing. The cumulative grade point average is computed by dividing the total quality points earned by the total number of credit hours for which the student has received a final grade of "A", "B", "C", "D", "F", or "WF".

Courses Taken at Other Institutions

Only courses taken at Southern Polytechnic State University, or courses completed under the cross-registration program, are computed in the cumulative grade point average. Credits 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.

Quality Points are assigned as follows:

Grade	Quality Points
A	Four quality points are assigned
B	Three quality points are assigned
C	Two quality points are assigned
D	One quality point is assigned
F	Zero quality points are assigned
WF	Zero quality points are assigned

Graduate student grade point averages, for the purpose of remaining in good standing or graduating from a program are computed using only those courses in the major department and those courses approved by the program faculty.

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 Reports

Grades are reported to students by way of the student information system. Grade reports are not mailed. Students who desire a written grade report may obtain one by written request to the registrar's office.

Policy for Acceptance of Transfer Credit

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. 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 "B" 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

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

Students may be required to demonstrate proficiency by passing an examination in order to be awarded some credit.

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.

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 State of Georgia.

In addition, the following conditions must also be met by the institution where the credits were earned:

- 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
- Must be offering degrees and course work at the college or university level and
- Must have a well-established international reputation for quality instruction

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:

- Check with the appropriate Department Chair about the applicability of credit by examination to the course(s) under consideration
- If credit by exam is appropriate, obtain a Request for Credit by Examination form from the Office of the Registrar, complete it and pay the requisite fee at the Business Office
- The Business Office will validate the form, and it should then be submitted to the Department Chair who is 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 in writing of the final disposition of the credit.

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

Graduation

Graduation Requirements

Catalog for Graduation Evaluation

- 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.
- 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.
- Students changing majors will be evaluated for graduation from the catalog in effect at the time of the change, or any catalog in effect during subsequent periods of continuous enrollment.
- 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. For further information on the selection of an appropriate catalog, contact your major Department Chair or the Registrar's Office.

General Requirements

A student is eligible for graduation when he or she:

- Has satisfactorily completed the required number of hours for the degree
- Has passed all required courses for the degree
- Has achieved the necessary scholastic average (2.00 for undergraduates; 3.00 for graduates)
- Has paid all required fees, fines, and other financial obligations
- Has filed an official "Petition of Admission to Candidacy for a Degree" through the Department Chair to the Registrar's Office.
- Has passed the Regents' Test (for an undergraduate degree)
- Has 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, American Government, or Political Science satisfies this requirement; undergraduate degree only)
- Has satisfied any program related requirements
- Has merited the recommendation for the degree by the faculty and the President of the university
- Has earned 25% of the total hours required for the degree in residence at SPSU
- Has earned in residence at SPSU the last
(Transient coursework does NOT count as resident work)
 - 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

Graduation Petitions

A student must submit a formal petition for "Admission to Candidacy for a Degree" to their academic department in accordance with the deadline published in the academic bulletin.

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.

Students are allowed and encouraged to petition early.

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.



Graduate Programs

Construction
Information Design and Communication
Computer Science
Information Technology
Software Engineering
Engineering Technology: Electrical
Management
Quality Assurance
Systems Engineering

Graduate Admissions

Requirements and Procedures

This section contains information that pertains to all graduate programs.

Admission Information – All applicants require:

- An application
- A \$20 non-refundable application fee
- Three reference forms (TCOM applicants must remit reference letters)
- Two official transcripts from each previous college attended
- A certificate of Immunization

All admission materials must be received by the dates in the following schedule:

Term	Deadline for Admission
Fall	July 1
Spring	November 1
Summer	April 1

Materials received after the deadline dates will be processed, but may not be processed in time to allow students to begin that term.

Admission to Southern Polytechnic State University is made without regard to race, nationality, sex, or religion. For any information regarding admission to Southern Polytechnic State University, write the Director of Admissions, Southern Polytechnic State University, 1100 South Marietta Parkway, Marietta, Georgia 30060-2896.

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 or Board of Regents.

Each program has unique entrance requirements. For details, see the admissions requirements for the program you are interested in below.

Note: Admission to a graduate program does not entitle students to take courses in other graduate programs. The Department Chair of both programs must approve any course taken outside of the student's major.

International Students

International students applying from outside the United States must submit all admissions documents, including immunization certificates, at least 60 days prior to the above deadlines.

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

Admissions 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

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 Admissions Office.

All international students must purchase medical insurance made available through Southern Polytechnic State University or provide proof of alternate coverage through a comparable policy.

Readmission

Students who have an absence of two or more consecutive terms of matriculation at Southern Polytechnic State University and who are not academically dismissed must be approved by the appropriate graduate academic program for readmission before being eligible for registration. An application for readmission, together with any pertinent supporting information, must be submitted to the appropriate graduate academic program at least 20 working days before the registration date of the semester in which the student plans to enroll.



Admission Requirements for the Master's Program in Construction

Admission to the Master of Science program with a major in Construction is open to persons holding the bachelor or higher degree from an accredited college or university in:

- Engineering
- Engineering Technology
- Construction Management
- Construction Technology
- Architecture
- Management

In some cases, a related degree may be acceptable.

Preference in admission will be given to applicants having professional experience in a construction work environment. The admission procedure is competitive in that students will be admitted only if their academic accomplishments and work experience demonstrate that they can successfully complete the program.

Admission Procedure

Applicants for admission to the Master of Science program with a major in Construction must submit the following to the Admissions Office:

- An application for admission to the program
- An official copy of scores from the General Test of the Graduate Record Examination (GRE) or scores from the Graduate Management Admissions Test (GMAT)
- Two official transcripts from each college the applicant has attended
- A certificate of immunization
- At least three recommendation forms which have been completed by supervisors, professors, or professional colleagues; one of which must be from the current supervisor. These must be sent directly to the Construction Program.

Students desiring to change from the CNST graduate major to another graduate major, must receive prior approval of the CNST Graduate Program Coordinator and CNST Department Chair, and meet all entry requirements of the desired program. Students who are accepted into the CNST graduate major must attend the mandatory orientation.

Admission Criteria

Applicants for admission to the Master of Science program in Construction must meet the following criteria:

Regular Admission:

- A GRE score of 850 or better on the General Test (verbal and quantitative)
- Or a score of 500 on the GMAT
- An undergraduate GPA of 2.75 or better on a 4.00 scale

Conditional Admission: Applicants not meeting the minimum requirements will be considered for conditional admission based on an evaluation of

- Undergraduate GPA
- Professional industry experience
- GRE/GMAT scores
- Commitment for graduate studies

In the event that any aspect of an applicant's application does not meet the required minimum, acceptance may be granted by the construction graduate committee. In such cases, applicants must submit a written statement of applicant's professional career goals is required with the application for conditional admission to the program.

NOTE: Students who are admitted under conditional admission may be changed to regular admission by obtaining a grade of "B" or better in the first four CNST graduate courses.

Construction

The Master of Science program with a major in Construction is designed to offer education in construction and project management to persons in the construction industry in three categories:

- Practicing U.S. and international professionals educated in related disciplines such as engineering, engineering technology, business or architecture, who desire more knowledge in the construction process
- Professionals educated in construction or construction management and who wish to pursue the subject in greater depth, and
- Persons holding a baccalaureate or higher degree who are actively pursuing a construction industry career but lack education in construction and project management

Our objectives are:

- To offer a degree oriented toward the practice of construction
- To deliver this graduate education in an evening and weekend setting
- To provide a program which will enhance graduates' management skills and advancement opportunities

The requirements are a minimum of 36 hours of graduate work as designated below. A grade of "C" or better for each course is required. A cumulative 3.0 grade point average is required (in all courses that apply to the degree).

Required Courses		(16 hours)	
CNST	6000	Information Methods	4
CNST	6100	Construction Law: Contracts and Claims (or 61XX from elective listing)	4
CNST	6200	Strategic Bidding and Estimating	4
CNST	6600	Construction Risk Analysis and Control	4

Options (20 hours)

Option A

Electives (20 hours - 5 graduate courses from an approved list (4-credit hours each), including at least 3 with a CNST prefix):

- Approved list will include all 6000 level and 7000 level CNST courses.
- Students may take a course at the 6000 level or above that is offered by another program with the approval of the CNST Graduate Program Coordinator and the faculty member teaching the desired non-CNST course.

Thesis Option

*CNST 61XX, 63XX, 64XX, 65XX, 69XX 8-12
CNST 7801-7804 Master's Thesis 8-12

Project Option

*CNST 61XX, 63XX, 64XX, 65XX, 69XX 12-16
CNST 7701-7704 Master's Project 4-8

- Other 6000 level courses (as approved by Graduate Advisor)

Foundation: In addition to the 36 required hours, students must demonstrate competency in the following:

- English communication skills □□construction graphics
- construction methods and techniques □□structural systems
- computer skills □□construction scheduling
- construction estimating □□construction accounting and finance

Courses taken to show competency in these areas **will not count toward the 36** hours required for the Graduate degree. Competency can be shown by:

- Successfully completing coursework
- Or by successfully completing competency testing developed by the Program

Admission Requirements for the Master's Program in Information Design and Communication

The Master of Science program in Information Design and Communication is designed for both experienced and beginning technical communicators.

Applicants must have a baccalaureate degree from an accredited school. Because professionals in this field come from many different fields, no specific undergraduate major is required. Preferred (but NOT required) for admission is some relevant work experience.

The admission procedure is competitive in that students will be admitted only if they can demonstrate that they can successfully complete the program through their

- academic accomplishments
- work experience
- and writing ability

Admission Procedure - The Humanities and Technical Communication Department accepts master's students for fall and spring. Applicants for admission to the Master of Science program in Information Design and Communication must submit the following to the Humanities and Technical Communication Department:

- Three letters of recommendation (NOT the reference forms in the application packet) from supervisors, clients, professors, or professional colleagues
- An essay written on campus
- An essay written off campus
- Scores on the Graduate Record Examination (see exception below)

Exception: The Graduate Record Examination is required for applicants to the master's degree program in Information Design and Communication except—if an applicant has substantial, relevant experience—the applicant may submit a portfolio, along with appropriate descriptions and narrative justifications of the relevancy of the experience to the candidate's suitability for graduate degree study.

The on-campus essay must be written in a specified length of time, in response to an assignment given at that time. The off-campus essay must discuss the manner in which the master's program will satisfy the applicant's career goals.

Applicants must submit the following to the Admissions Office:

- An application for admission to the program
- Two official transcripts from each college attended
- A certificate of immunization

Applicants should have above-average grades in undergraduate communication courses. The applicant's overall undergraduate performance can correlate with success in the master's program.

Information Design and Communication

The Master's program in Information Design and Communication **was developed in response to a growing need for professionals in technical communication.**

The basic objectives of the program are:

- To educate those persons with diverse academic and work backgrounds who seek to begin their careers in the field of technical communication, and
- To provide a useful credential for current technical communicators who need advanced training to move ahead in their careers, either as employees or managers of a company or as independent consultants.

The Information Design and Communication program **offers students the choice of three program options - Plans A, B, and C - all of which require completion of thirty-six hours.**

Plan A: Internship option - Students selecting this option must:

- Take IDC 6001, IDC 6002, and IDC 6030
- Finish classroom work totaling thirty hours.
- Then complete the six-hour Master's Internship

Required Courses for Plan A			
IDC	6001	Technical Writing and Editing	3
IDC	6002	Information Design	3
IDC	6030	Foundations of Graphics	3
IDC	7601-7603*	Master's Internship	6

Plan B: Thesis Option - Students selecting this option must:

- Take IDC 6001, IDC 6002, and IDC 6030
- Finish classroom work totaling thirty hours.
- Complete the Master's Thesis (six-hour minimum)

Students in the thesis option are strongly encouraged to take IDC 6004, Advanced Research.

Required Courses for Plan B			
IDC	6001	Technical Writing and Editing	3
IDC	6002	Information Design	3
IDC	6030	Foundations of Graphics	3
IDC	7801-7803*	Master's Thesis	6

Plan C: Class Work Option - Students selecting this option must complete thirty-six hours of classroom work including IDC 6001, IDC 6002, and IDC 6030.

Required Courses for Plan C			
IDC	6001	Technical Writing and Editing	3
IDC	6002	Information Design	3
IDC	6030	Foundations of Graphics	3
Two additional courses with the IDC prefix or other courses approved by the coordinator or department chair.			6

All Information Design and Communication courses are listed below.

NOTE: IDC 6001 must be taken the first semester of work in the Master's program, and IDC 6002 and IDC 6030 and must be taken as soon as possible after admission.

Elective Courses for Plan A, Plan B, and Plan C			
IDC	6003	Advanced Editing,	3
IDC	6004	Advanced Research,	3
IDC	6040	Applied Graphics,	3
IDC	6045	Foundations of Multimedia	3
IDC	6050	Applied Multimedia ,	3
IDC	6060	International Technical Communication	3
IDC	6070	User Documentation	3
IDC	6080	Professional Oral Presentations,	3
IDC	6090	Medical Communication	3
IDC	6110	Project Management	3
IDC	6120	Usability Testing	3
IDC	6130	Online Documentation ,	3
IDC	6135	Website Design	3
IDC	6140	Instructional Systems Design	3
IDC	6145	Performance Technology	3
IDC	6150	Marketing Communication	3
IDC	6160	Rhetoric,: History, Theory, and Practice	3
IDC	6165	Writing Style in the Workplace,	3
IDC	6170	Video Production,	3
IDC	6901- 6903	Special Topics	1-3
IDC	7501- 7503	Independent Study	1-3

Graduate students may take up to nine hours outside of the program with prior approval from both the Graduate Coordinator and the Department Chair.

NOTE: A grade of "B" or better is required in all courses that are applied to graduation (with the exception of the internship and thesis, which require an "S").

* When taking the internship, students may enroll in a maximum of 9 hours per semester:

- 3 hours of internship plus two courses
- or 6 hours of internship plus one course

*When taking the thesis, students may enroll in a maximum of 9 hours per semester--to include no more than 3 hours of thesis per semester.

Graduate Certificate in Technical Communication

The Graduate Certificate in Technical Communication is an online program that prepares students for a variety of positions in technical communication. It also helps current technical communicators update and expand their knowledge and skills, enabling them to move ahead in their profession.

Admissions criteria for the online certificate are the same as for the master's degree program except that certificate applicants are not required to take the GRE. Certificate students take online versions of the following six master's courses that are taught separately from the courses offered to master's students:

- IDC 6001, Technical Writing & Editing
- IDC 6002, Information Design
- IDC 6030, Foundations of Graphics
- 3 other courses as offered online in any given semester(s)

Students completing the certificate program may apply for admission to the master's program without taking the GRE. They will need to submit a portfolio of work completed in the certificate program, which will be reviewed by the admissions committee. Completing the certificate program

does not guarantee admission to the master's program. Certificate program graduates who are accepted into the master's program may count the six courses they have completed (18 credits) toward the master's degree.

Students in the certificate program who decide to apply for admission to the graduate program before completing the certificate will need to take the GRE. If they are admitted to the master's program, a maximum of 3 certificate courses will be counted toward the master's degree.

For questions about the certificate program, contact the HTC Department. The number is 678-915-7202.



Admission Requirements for the Master's Program in Computer Science

The Master of Science program with a major in Computer Science is designed to enhance career options for a broad mix of students. The distinctions of the program include both a high quality and accessibility to nontraditional groups of students. The Master's courses are all taught by full-time faculty holding doctorates or occasionally by carefully elected experts with both academic and industrial experience. In addition to welcoming full-time students with degrees in Computer Science, we also cater to two major non-traditional groups of students: those whose schedules allow only for part-time studies and those without a degree in Computer Science. For the first group, we offer almost all of our classes during the evenings (and a few on Saturdays). For the second group of students, courses are offered that allow them to "transition" into the Master's courses. The six transition courses are packaged into the credit-based Graduate Transition Certificate in Computer Science (GTCCS).

Although no specific undergraduate major is required, applicants must have a baccalaureate degree from an accredited school.

Admission Procedure

Applicants for admission to the Master of Science program with a major in Computer Science must submit the following to the Admissions Office:

- An application for admission to the program
- Two official transcripts from each college the applicant has attended
- A certificate of immunization.

In addition, applicants must submit the following to the School of Computing and Software Engineering:

- An official copy of scores from the "General Test" of the Graduate Record Examination (GRE),
- A statement of purpose in seeking this degree, and
- Three recommendation forms completed by former or current supervisors, professors, or professional colleagues.

International students should refer to the International Students sub-section for additional admission requirements.

In addition to having a baccalaureate degree from a recognized college/university, one of the following must be met for a student to be considered for this MS program at Southern Polytechnic State University:

Basic

- Undergraduate GPA of 3.0 or better (out of a possible 4.0) or the equivalent
- Official GRE scores meeting the current admission profile
350V + 600Q + 500A

Note: Higher scores may compensate for a lower GPA. In some cases, the GMAT may be considered.

Advanced

The candidate for admission has already earned a recognized master's or doctor's degree in a closely related, quantitative field of study (e.g., engineering, physics, chemistry, mathematics); the GRE is not required for consideration. The GRE is strongly recommended if the degree is not from the United States.

Alternative

A student holding a baccalaureate degree from an accredited school who does not meet the criteria for Basic or Advanced categories may be admitted upon convincing the faculty of the School of CSE of extraordinary alternative qualifications (e.g., lengthy and distinguished employment in the computer field) that would predict the likelihood of success in completing the MS program

If the number of applicants meeting the criteria exceeds the recent profile of the program, the applicants will be ranked on academic merit for further selection.

Computer Science

The requirements are 36 hours of graduate work as designated below.

Only grades of 'C' or better may be applied to meet the degree requirements (including transition coursework).

An overall GPA of 3.0 ("B") or better is required over all graduate coursework attempted.

A maximum of 2 'C's at the level of 6000 or above may be applied if offset by the same number or more of 'A's at the level of 6000 or above.

Students applying to the program who do not have a degree in Computer Science or Software Engineering may be accepted conditionally. Upon acceptance, the admissions committee will evaluate the student's transcripts. If the committee determines necessary prerequisite courses the student must take before being fully admitted into the Master's Program, the student will be admitted with Conditionally Matriculated status. The required prerequisite courses are listed on the student's conditional acceptance letter and are required to make up deficiencies in the student's academic background.

Upon completion of the prerequisite courses with a grade of "B" or better, the student will be fully admitted into the Computer Science program and eligible to register for regular Master's (6000 level) coursework. None of the prerequisite courses (5000 level) will count towards the Master's Program.

Transition Courses			
None of these courses may be used to meet degree requirements.			
CS	5123	Advanced Programming and Data Structures	3
CS	5153	Database Systems	3
CS	5183	Object-Oriented Programming	3
CS	5223	Computer Architecture	3
CS	5243	Operating Systems	3
CS	5423	Mathematical Structures for Computer Science	3

Some students may be advised to start with the undergraduate Computer Science I course.

Required Core Courses			
CS	6123	Theory and Implementation of Programming Languages	3
CS	6153	Advanced Database Systems	3
CS	6223	Advanced Computer System Architecture	3
CS	6413	Theory of Computation	3
CS	6423	Algorithmic Processes	3
SWE	6623	Software Engineering I	3
Total Required Courses			18

Electives (18 hours - 6 graduate courses from an approved list, including at least 3 with a CS prefix):

- Approved list will include all 6000 level and 7000 level CS and SWE courses, with the exception of SWE 7903 – Software Engineering Capstone.
- No more than one approved Information Technology course at the 6000 level may be counted toward the Master's degree in CS. The approved IT courses include: IT 6643, IT 6663, IT 6683, IT 6723, IT 6753, and IT 6763.
- Students may take a course at the 6000 level or above that is offered by another program with the approval of the CS Department Chair.

Note that, although a thesis is not required, a thesis option is available, which requires a student to take six credits of CS 7803 - Master's Thesis as part of his/her electives.

Graduate Transition Certificate in Computer Science

The Graduate Transition Certificate in Computer Science prepares individuals for Master's level computer science programs or entry-level positions in the industry. The program is designed for those students holding an accredited bachelor's degree in an area unrelated to computer science and having an interest in computer science.

The focus is on providing broad-based knowledge and skills. The required courses are:

- CS 5123
- CS 5153
- CS 5183
- CS 5223
- CS 5243
- CS 5423

Admissions prerequisites include:

- Some knowledge of programming (equivalent to CS 1301)
- Calculus

Applicants with additional preparation may be allowed to substitute up to two approved 6000-level courses for the same number of required courses.



Admission Requirements for the Master's Program in Information Technology

The Master of Science in Information Technology program is designed to enhance career options for a broad mix of students. The program is designed for those students interested in pursuing a career in the management and performance of information systems planning, development, implementation, and operation.

Although no specific undergraduate major is required, applicants must have a baccalaureate degree from an accredited school. Students will be evaluated on an individual basis and will be admitted only if their academic accomplishments, recommendations, and motivation predict the ability to complete the program successfully.

Admission Procedure

Applicants for admission to the Master of Science program with a major in Information Technology must submit the following to the Admissions Office:

- An application for admission to the program
- Official transcripts from each college the applicant has attended
- A certificate of immunization
- An official copy of scores from the "General Test" of the Graduate Record Examination (GRE) or GMAT.

In addition, applicants must submit the following to the Information Technology Department:

- A statement of purpose in seeking this degree
- Three recommendation letters completed by former or current supervisors, professors, or professional colleagues.

International students should refer to the International Students sub-section for additional admission requirements.

One of the following must be met for a student to be fully admitted to this MS program at Southern Polytechnic State University:

Basic

- Undergraduate GPA of 3.0 or better (out of a possible 4.0) or the equivalent
- Official GRE scores, OR for those students taking the GMAT use the following index:
$$\text{GMAT} + (200 \times \text{undergraduate GPA}) = 1000$$

Advanced

(A candidate for admission who has already earned a recognized master's or doctor's degree in another field of study)
The GRE/GMAT is not required if an advanced degree has already been completed in the United States.

MSIT Coursework

Transition Courses (These courses, as indicated at acceptance time, may NOT be counted toward degree requirements)			
CS	1301	Computer Science I (Required if no prior programming)	4
IT	5113	Advanced Programming & Applications	3
IT	5123	Web Development	3
IT	5133	Data Communications & Networks	3
CS	5153	Database Systems	3
MGNT	5653	Financial Decision Making	3
MGNT	5773	Managerial Decision Making	3
Core Requirements (18 hours)			
IT	6403	Windows Application Development	3
IT	6683	Management of Information Technology	3
OR			
MIS	6010		
MGNT	6025	Managing Professionals	3
SWE	6623	Software Engineering I	3
SWE	6633	Software Project Management	3
OR			
MIS	6050	Project Management	
IT	6643	Issues in Information Management	3
Capstone			(3 hours – Required)
IT	7833	IT Strategy and Policy	3
Electives (choose from the list below. At least 2 courses must be IT) (15 hours)			
CS	6323	Human Factors	3
IT	6473	Multimedia Applications	3
IT	6663	Data Center Management	3
IT	6723	Managing Operating and Network Systems	3
IT	6733	Database Administration	3
IT	6753	Advanced Web Concepts & Applications	3
IT	6763	Electronic Commerce	3
IT	6823	Information Security Concepts and Administration	3
IT	7803	Thesis (may substitute 2 thesis courses for 2 electives)	3
MGNT	6055	Total Quality Management	3
MGNT	6090	Strategic Management	3
MKTG	6010	Marketing Management	3
SWE	6743	Object-Oriented Analysis and Design	3
** Students may substitute 2 courses of Thesis (6 hours) for 2 electives listed above. Other approved 6xxx courses from existing Software Engineering, Computer Science or Management Master's programs may be used as electives (check with Department Chair).			
Total			36

Graduate Transition Certificate in Information Technology

The Graduate Transition Certificate in Information Technology prepares individuals who have an accredited bachelor's degree unrelated to information technology and who have an interest in either:

- Transitioning to a master's program in Information Technology
- Or in obtaining an entry-level position in industry

Participants enroll in two classes per semester for three semesters. Applicants with additional preparation in the field of information technology may be allowed to substitute up to two approved 6000-level courses for the same number of required courses listed below.

Required Courses			
18 hours			
CS	1301	Computer Science I (Required if no prior programming)	4
IT	5113	Advanced Programming & Applications	3
IT	5123	Web Development	3
IT	5133	Data Communications & Networks	3
CS	5153	Database Systems	3
MGNT	5653	Financial Decision Making	3
MGNT	5773	Managerial Decision Making	3

Graduate Certificate in Information Technology

The Graduate Certificate in Information Technology prepares individuals who hold an accredited bachelor's degree and have undertaken the Graduate Transition Certificate in Information Technology (or the equivalent through other coursework) to advance their knowledge in the field of information technology.

Participants enroll in two classes per semester for three semesters. There are four required courses and two electives.

Required Courses			
12 hours			
IT	6403	Windows Application Development	3
MIS	6010	Management Information Systems (AKA IT 6683)	3
SWE	6633	Software Project Management (AKA MIS 6050)	3
SE	6623	Software Engineering I	3
Elective Courses (choose 2 from the following list)			6
hours			
IT	6473	Multimedia Applications	3
IT	6663	Data Center Management	3
IT	6723	Managing Operating and Network Systems	3
IT	6733	Database Administration	3
IT	6753	Advanced Web Concepts & Applications	3
IT	6763	Electronic Commerce	3
IT	6823	Information Security Concepts & Administration	3

Admission Requirements for the Master's Program in Software Engineering

The Master of Science in Software Engineering program is designed to meet the high demand for a professional degree in Software Engineering within the context of a non-traditional audience (working professionals who attend part-time at night or on weekends). Although no specific undergraduate major is required, applicants must have a baccalaureate degree from an accredited school.

Admission Procedure

Applicants for admission to the Master of Science in Software Engineering program must submit the following to the Admissions Office:

- An application for admission to the program,
- An official transcript from each college the applicant has attended, and
- A certificate of immunization.

In addition, applicants must submit the following to the Computer Science Program:

- An official copy of scores from the "General Test" of the Graduate Record Examination (GRE)
- A statement of purpose in seeking this degree
- Three recommendation forms completed by former or current supervisors, professors, or professional colleagues
- Documentation of at least one year of software project-related work experience (or comparable co-op work)

International students should refer to the International Students sub-section for additional admission requirements.

In addition to having a baccalaureate degree from an accredited college/university and documentation of at least one year of software project-related work experience (or comparable co-op work), one of the following must be met for a student to be considered for this MS program at Southern Polytechnic State University:

Basic

- Undergraduate GPA of 3.0 or better (out of a possible 4.0) or the equivalent
- Submission of official GRE scores meeting the current admission profile; if GMAT has ALREADY been taken recently, official GMAT scores may be considered.

Advanced

The candidate for admission has already earned a recognized master's or doctor's degree in a closely related, quantitative field of study (e.g., engineering, physics, chemistry, mathematics), or a baccalaureate degree with a GPA of 3.0 or better in Computer Science, Computer Engineering, or Software Engineering from a recognized college/university. GRE is strongly recommended if the degree is not from the United States.

Alternative

A student holding a baccalaureate degree from an accredited school who does not meet the criteria for Basic or Advanced categories may be admitted upon convincing the faculty of the School of CSE of extraordinary alternative qualifications (e.g., lengthy and distinguished employment in the computer field) that would predict the likelihood of success in completing the MS program.

If the number of applicants meeting the criteria exceeds the recent profile of the program, the applicants will be ranked on academic merit for further selection.

Graduate Certificate Program Admission Requirements

Applicants must have earned a baccalaureate degree from an accredited college.

Students applying for any of the graduate certificate programs must submit the following to the Admissions Office prior to the registration term:

- An application for graduate certificate program admission, along with a \$20 nonrefundable application processing fee (check made payable to Southern Polytechnic State University),
- An official college transcript showing degree earned date, and
- The certificate of immunization

Software Engineering

The Master of Science in Software Engineering (MSSWE) program at Southern Polytechnic State University has the primary objective of meeting the high demand for a professional degree in Software Engineering within the context of a non-traditional audience (working professionals who can only attend part-time at night or on weekends).

Software Engineering has emerged nationally as a specialized area of computer science that emphasizes solving the problems and complex issues associated with developing and maintaining mission-critical software to meet the needs of business and industry. It uses the life-cycle concept from traditional engineering with an emphasis on specification, design, and implementation but calls on the focused application of computer science concepts rather than those of traditional engineering.

The position "software engineer" has become a common job title for software developers in business and industry and represents the fastest growing segment of software professionals.

Students accepted for the program must document at least one year of software project-related work experience (or comparable co-op work). The typical student is:

- A working professional in metro Atlanta
- With at least a bachelor's degree
- And the other usual credentials expected for acceptance to a graduate program

However, **it is not necessary** that students have a formal degree or specific previous coursework in software engineering or computer science since a transition path is available.

The requirements for earning the degree are 36 hours of graduate work as designated below. **Only grades of 'C' or better may be applied to meet the degree requirements** (including transition coursework). An overall GPA of 3.0 ("B") or better is required over all graduate coursework attempted. **A maximum of 2 'C's at the level of 6000 or above may be applied** if offset by the same number or more of 'A's at the level of 6000 or above.

Students applying to the program who do not have a degree in Computer Science or Software Engineering may be accepted conditionally. Upon acceptance, the admissions committee will evaluate the student's transcripts. If the committee determines necessary prerequisite courses the student must take before being fully admitted into the Master's Program, the student will be admitted with Conditionally Matriculated status.

The required prerequisite courses are listed on the student's conditional acceptance letter and are required to make up deficiencies in the student's academic background. Upon completion of the prerequisite courses **with a grade of "B" or better**, the student will be fully admitted into the MSSWE program and be eligible to register for regular Master's (6000 level) coursework. None of the prerequisite courses (5000 level) will count towards the Master's Program.

Transition Courses:			
CS	5123	Advanced Programming and Data Structures	3
CS	5153	Database Systems	3
CS	5183	Object-Oriented Programming	3
CS	5223	Computer Architecture	3
CS	5243	Operating Systems	3
CS	5423	Mathematical Structures for Computer Science	3
SWE	1301	Software Development I	4
NOTE: None of these courses may be used to meet degree requirements.			

Required Core Courses 18 hours			
SWE	6623	Software Engineering I	3
SWE	6633	Software Project Management	3
SWE	6723	Software Engineering II	3
SWE	6743	Object-Oriented Analysis and Design	3
SWE	6763	Software Metrics and Quality Management	3
SWE	6883	Formal Methods in Software Engineering	3

Project Option			
SWE	7903	Software Engineering Capstone (Project)	3
	Electives:		15 hours
NOTE: The student may choose five electives to complete 36 hours. The electives must be:			
<ul style="list-style-type: none"> Choose 6000 Level SWE, CS or IT Courses (at least 2 SWE, at most 1 IT) Not already used to meet a requirement Approved by the program 			

Thesis Option			
SWE	7803	Master's Thesis	6
	Electives:		12 hours
NOTE: The student may choose four electives to complete 36 hours. The electives must be:			
<ul style="list-style-type: none"> Choose 6000 Level SWE, CS or IT Courses (at least 2 SWE, at most 1 IT) Not already used to meet a requirement Approved by the program 			

Graduate Certificate in Software Engineering

The Graduate Certificate in Software Engineering prepares practitioners to advance into leadership positions.

Applicants should have:

- A bachelor's degree in Computer Science or a closely related field (or a bachelor's degree with professional competence and knowledge equivalent to a Computer Science degree)
- At least one year of software project-related work experience (or comparable co-op work)

The focus is on sharpening capabilities to function effectively in software engineering teams producing higher quality software.

The curriculum involves an on-campus program including three core courses and the choice of three electives. Participants enroll in two classes per semester for three semesters. The required core courses are:

SWE 6623 SWE 6633 SWE 6723

Participants may select three electives from the following list of nine options:

CS 6153 CS 6323 CS 6353
SWE 6343 SWE 6683 SWE 6743
SWE 6763 SWE 6883 IT 6643.

Admission Requirements for the Master's Program in Engineering Technology, Electrical Concentration

Admission to the Master of Science program with a major in Engineering Technology, Electrical Concentration, is open to persons holding the bachelor or higher degree in engineering, engineering technology, or a related degree from an accredited college.

Preference in admission will be given to applicants having professional experience in a technical work environment. The admission procedure is competitive in that students will be admitted only if their academic accomplishments and work experience demonstrate that they can successfully complete the program.

Admission Procedure

Applicants for admission to the Master of Science program with a major in Engineering Technology, Electrical Concentration must submit the following to the Admissions Office no later than the semester deadline date before the beginning of the semester in which the applicant plans to enroll:

- An application for admission to the program,
- An official copy of scores from the "General Test" of the Graduate Record Examination,
- Two official transcripts from each college the applicant has attended,
- A certificate of immunization
- At least three recommendation forms which have been completed by former or current supervisors, professors, or professional colleagues. These recommendation forms must be sent directly to the Electrical Program.

International students should refer to the International Students sub-section for additional admission requirements.

Admission Criteria

Applicants should have an undergraduate degree in Electrical, Computer, or Telecommunications Engineering Technology or Electrical, Computer, or Telecommunications Engineering from an accredited college or university.

Applicants must have at least a 2.70 (on the 4.00 scale) undergraduate grade point average.

Applicants must score a minimum of 500 on either the quantitative or analytic components of the General Test of the Graduate Record Examination (GRE).

Admission Status

The program coordinator in conjunction with the graduate admissions committee determines the student admission status.

Full Graduate Status students have met all the criteria shown above and have been judged acceptable by the graduate programs committee.

Post-Baccalaureate students are graduate students who have not met all the criteria shown above. They are limited to 12 semester hours of graduate credit, during which they must qualify for full graduate status. Post-Baccalaureate students are not guaranteed full graduate status.

Provisional students are graduate students who have not met all the criteria shown above. They are limited to designated courses, either graduate or undergraduate, during which they will be evaluated to determine their likelihood of success. Provisional students are not guaranteed full graduate status.

International Students

International applicants who do not possess a bachelor's degree from a college within the United States must submit the following additional information to the Admissions Office:

- An official transcript (translated into English) of college-level education,
- Score on the Test of English as a Foreign Language (TOEFL)
- An affidavit indicating financial security

The University reserves the right to require applicants to send their international educational credentials to University approved professional evaluation service before being considered for admissions.

A minimum TOEFL score of 213 on the computer version or 550 on the paper version is required. International students on F-1 and J-1 visas must purchase medical insurance made available through Southern Polytechnic State University or provide proof of alternate coverage through a comparable policy.

International applicants applying from outside of the United States must submit all admissions documents, including Immunization Certificate, at least 60 days prior to the deadline dates.

Transfer Credit

Students may wish to transfer credit from other graduate programs in which they have been enrolled. Transfer credit is limited to 25% of the hours required in their programs subject to the discretion of the head of the academic program where the program resides. Students may apply for transfer credit if:

- The student was enrolled as a graduate student
- The course is completed with a grade of "B" or better
- The course was not used toward a degree
- The course is equivalent to one offered in a Master of Science program at Southern Polytechnic State University
- The course credit was earned within the last five years

Post-Baccalaureate Students

Persons holding a recognized bachelor's degree may be admitted as post-baccalaureate students if they are interested in taking additional classes for personal growth or professional development but not involving a new degree objective. Such students must have program approval where prerequisites are involved or if enrollment is desired in a graduate-credit class.

To apply as a post-baccalaureate student, the student must submit to the Admissions office:

- An undergraduate application form along with a \$20 non-refundable application processing fee (check made payable to Southern Polytechnic State University)
- Two official transcripts showing completion of a bachelor's degree or above from a recognized institution of higher education
- The certificate of immunization

If a student in this category chooses to later apply for degree-seeking status, the student must follow the regular Master's program admission procedure. Following regular program admission, graduate credit earned in the non-degree-seeking category may be counted only with the permission of the program where the degree is housed.

At the discretion of the program where a given Master's program is housed, a student who has supplied the above-stated materials for admission may be admitted as a post-baccalaureate student with the indicated major while full admission is being sought. Ordinarily, no more than 8 hours of graduate coursework completed in this provisional status may be applied to the degree.

Engineering Technology

Electrical Concentration

The scope of electrical engineering technology has become very broad as the knowledge base and applications associated with this discipline continue to expand at an accelerating pace.

The Master of Science degree is offered to meet the needs of individuals who wish to pursue advanced studies in modern electrical, electronic or computer technologies in order to fulfill their personal or career goals.

There are four principal objectives to the graduate program in Engineering Technology:

- To provide continuing in-depth technical education to individuals who hold an ABET-accredited baccalaureate degree in Electrical or Computer Engineering or Engineering Technology.
- To provide advanced studies in electrical, electronic or computer technologies to help individuals advance in their chosen careers. These individuals may work as engineers, engineer/technologists, technical managers, independent consultants, or in similar professions.
- To provide additional technical education to those individuals who desire to teach at the college, technical school, or high school level.
- To provide an opportunity for practicing professionals, who possess an accredited baccalaureate degree in a related discipline, to shift their career path into the electrical, electronic or computer fields.

Each graduate student will pursue an individualized course of study within the guidelines of one of the programs listed below. The student and his/her academic advisor will identify the graduate courses that will comprise that student's course of study. The courses will be chosen to:

- Meet the student's career goals
- Provide a high-quality educational experience for that student
- Satisfy the requirements of one of the programs

Grade Requirements

A grade of "C" or better is required for each course within the student's graduate program and it is required that each student maintain a cumulative grade point average of 3.00 or higher in order to graduate.

Programs

Project-Based Program

- 36 hours of graduate-level ECET courses including:
- ECET 6704: Project Proposal
- ECET 7704: Project
- 4 hours of graduate-level free electives

Research-Based Program

- 36 hours of graduate-level ECET courses including:
- ECET 7504: Research
- 4 hours of graduate-level free electives

Admission Requirements for the Master of Business Administration (MBA) Program

Admission to the MBA program is open to persons holding the bachelor or higher degree from an accredited college.

Admission Procedure

Applicants to the MBA program must submit the following to the Admissions Office no later than the semester deadline date before the beginning of the semester in which they plan to enroll:

- An application for admission to the MBA program
- An official copy of scores from the Graduate Management Admissions Test (within the past five years)
- Two official transcripts from each college the applicant has attended,
- Certificate of immunization, and
- At least three recommendation forms which have been completed by former or current supervisor, professors, or professional colleagues. These recommendation forms are to be sent from the person completing the recommendation form directly to the Graduate Coordinator, Management Department.

International students should refer to the International Students sub-section for additional admission requirements.

Admission Criteria

Applicants for admission to the MBA program must meet the following criteria:

Regular admission index: $GMAT + (200 * \text{undergraduate GPA}) = 900$

Application forms and testing schedules for the GMAT may be obtained from the Admissions office at Southern Polytechnic State University or from:

The Educational Testing Service (ETS)
P.O. Box 6103, Princeton, NJ 08541-6103
(609) 770-7330
<http://www.mba.com/mba>

In order to have scores forwarded to SPSU you must provide our reference code number (5626) on your test application.

Advanced Admission Criteria

A candidate for admission who has already earned a recognized master's or doctorate degree in another field of study is NOT required to take the GMAT if the advanced degree has been completed in the United States.

Admission Status

The MBA coordinator in conjunction with the department head determines the student's admission status.

1. Full admission status applies to students who have met all of the admission requirements of the MBA program. Fully admitted students who have not taken courses in the common professional core (CPC) will be required to take the 5000-level transition courses or equivalent undergraduate courses to fulfill this requirement.
2. Conditional admission status applies to students who have not met all of the admission criteria. With conditional admission, students are limited to designated courses during a specified time period while they work to fulfill the full admission requirements. Students with conditional admission status are not guaranteed full admission status.
3. Post-baccalaureate status is available to students who meet the admission criteria but who are NOT seeking a degree.

Admission Requirements for the Master's Program in Management

Admission to the Master of Science program with a major in Management is open to persons holding the bachelor or higher degree from an accredited college.

Admission Procedure

Applicants for admission to the Master of Science program with a major in Management must submit the following to the Admissions Office no later than the semester deadline date before the beginning of the semester in which they plan to enroll:

- An application for admission to the program,
- An official copy of scores from the Graduate Management Admissions Test,
- Two official transcripts from each college the applicant has attended,
- Certificate of immunization, and
- At least three recommendation forms which have been completed by former or current supervisors, professors, or professional colleagues (To be sent from the person recommending directly to Dean, School of Management.)

International students should refer to the International Students sub-section for additional admission requirements.

Admission Criteria

Applicants for admission to the Master of Science program in Management must meet the following criteria:

Regular admission index: $GMAT + (200 \times \text{undergraduate GPA}) = 900$

Application forms and testing schedules for the GMAT may be obtained from the Admissions office at Southern Polytechnic State University or from:

The Educational Testing Service (ETS)
P.O. Box 6103, Princeton, NJ 08541-6103
(609) 771-7330

In order to have scores forwarded to SPSU you must provide our reference code number (5626) on your test application.

Advanced

A candidate for admission who has already earned a recognized master's or doctorate degree in another field of study is NOT required to take the GMAT if the advanced degree has been completed in the United States.

Master of Business Administration

Accreditation standards require that all students being awarded the Master of Business Administration satisfy the Common Professional Core (CPC). This requirement may be satisfied by completing graduate transition courses or undergraduate courses in these subject areas: accounting, finance, economics, business law, management and organizational behavior, marketing, operations management, and statistics. Applicants who have earned college credit for courses such as these will be considered to have satisfied the Common Professional Core for that area.

The requirement to complete the MBA degree will be 36 semester hours beyond the Common Professional Core. MBA students take eight required courses and four electives.

A grade of “C” or better is required for each course and an overall “B” average (3.0), including in the 5000-level transition courses, is required.

Transition Courses for the Common Professional Core			
MGNT	5653	Financial Decision Making	3
MGNT	5773	Managerial Decision Making	3
MGNT	5873	Strategic Environment of Business	3
NOTE: These courses do not count toward the 36 hours required for the degree.			

Required MBA Courses (24 hours)			
ACCT	6000	Managerial Accounting	3
FIN	6005	Financial Management	3
MKTG	6010	Marketing Management	3
MGNT	6005	Managerial Economics	3
MGNT	6025	Managing Professionals	3
MGNT	6090	Strategic Management	3
MIS	6010	Management of Information Technology	3
OPSM	6005	Service and Production Operations Management I	3

Electives: Select from the following courses or as approved by your advisor and the Department Chair (12 Hours)			
MGNT	6001	Management Communication	3
MGNT	6015	Technology and Innovation Management	3
MGNT	6020	R&D Management	3
MGNT	6040	Current Readings in Management of Technology	3
MGNT	6050	Project Management	3
MGNT	6055	Total Quality Management	3
MGNT	6060	Entrepreneurship	3
MGNT	6065	Issues in International Management	3
MGNT	6070	Employment and Labor Relations	3
MGNT	6901-3	Special Topics	1-3
MGNT	7501-3	Independent Study	1-3
MKTG	6012	Sales Management	3
MKTG	6024	Business-to-Business Marketing	3
MKTG	6028	Marketing Research	3
MIS	6020	Analysis and Logical Design	3
MIS	6030	Physical Design and Implementation with DBMS	3
MIS	6040	Physical Design and Implementation within a Programming Environment	3
OPSM	6006	Service and Production Operations Management II	3
OPSM	6025	Purchasing Management	3

Management

To earn the Master of Science degree students must complete 36 hours beyond the Common Body of Knowledge. Accreditation standards require that all students satisfy the Common Body of Knowledge. Students can satisfy this requirement if they have completed undergraduate coursework in the required subject areas or by taking the 5000-level transition courses.

Transition Courses for the Common Body of Knowledge			
MGNT	5653	Financial Decision Making	3
MGNT	5773	Managerial Decision Making	3
MGNT	5873	Strategic Environment of Business	3
NOTE: These courses do not count toward the 36 hours required for the degree.			

Required Courses (21 hours)			
MGNT	6001	Management Communications	3
MGNT	6005	Managerial Economics	3
MGNT	6025	Managing Professionals	3
MGNT	6065	Issues in International Management	3
MGNT	6090	Strategic Management	3
MIS	6010	Management of Information Technology	3
OPSM	6005	Service and Production Operations Management I	3

Management Electives: Select any of the courses below for a total of 15 hours			
MGNT	6015	Technology and Innovation Management	3
MGNT	6020	R&D Management	3
MGNT	6040	Current Readings in Management	3
MGNT	6050	Project Management	3
MGNT	6055	Total Quality Management	3
MGNT	6060	Entrepreneurship	3
MGNT	6070	Employment and Labor Relations	3
MGNT	6901-3	Special Topics	3
MGNT	7501-3	Independent Research	3
MIS	6020	Analysis and Logical Design	3
MIS	6030	Physical Design and Implementation with DBMS	3
MIS	6040	Physical Design and Implementation within a Programming Environment	3
MIS	6050	Project Management and Practice	3
MKTG	6010	Marketing Management	3
MKTG	6012	Sales Management	3
MKTG	6024	Business-to-Business Marketing	3
MKTG	6028	Marketing Research	3
OPSM	6006	Service and Production Operations Management II	3
OPSM	6025	Purchasing Management	3
NOTE: Students must complete 15 hours of electives to complete the Master of Science degree. To take graduate courses outside of the Management program, students should obtain the approval of their advisor and Department Chair.			

Students who wish to focus on a particular area of study may consider suggested courses for the following options:

Management Information Systems Option			
MIS	6020	Analysis and Logical Design	3
MIS	6030	Physical Design and Implementation with DBMS	3
MIS	6040	Programming Environment	3
MIS	6050	Project Management and Practice	3

Operations Management Option			
MGNT	6050	Project Management	3
MGNT	6055	Total Quality Management	3
OPSM	6006	Service and Production Operations Management II	3
OPSM	6025	Purchasing Management	3

Management of Technology Option			
MGNT	6015	Technology and Innovation Management	3
MGNT	6020	R&D Management	3
MGNT	6040	Current Readings in Management	3
MGNT	6050	Project Management	3

Admission Requirements for the Master's Program in Quality Assurance

Admission to the Master of Science program with a major in Quality Assurance is open to persons holding the bachelor or higher degree in engineering, engineering technology, or related degree from an accredited college.

Preference in admission will be given to applicants having professional experience in a technical work environment. The admission procedure is competitive in that students will be admitted only if their academic accomplishments and work experience demonstrate that they can successfully complete the program.

Admissions Procedure

Applicants for admission to the Master of Science Program with a major in Quality Assurance must submit the following to the Admissions Office no later than semester deadline date before the beginning of the semester in which the applicant plans to enroll:

- An application for admission to the program,
- Two official transcripts from each college the applicant has attended, and
- A certificate of immunization

In addition, applicants must submit the following to the Industrial Engineering Technology Program:

- A statement of purpose in seeking this degree
- At least three recommendation forms which have been completed by former or current supervisors, professors, or professional colleagues

International students should refer to the International Students sub-section for additional admission requirements.

Admission Criteria

Engineering and Technology Concentration:

Applicants should have:

- An undergraduate degree in engineering, engineering technology, physical sciences, and other technically orientated majors from an accredited college or university
- At least two consecutive years of experience in a full-time quality or closely related professional position
- College credit for a basic statistics math course that included hypothesis testing and confidence intervals. Students may be allowed to take QA 6610 in lieu of this requirement and use this course as a free elective

Applicants must have:

- College credit for a two (or more) course sequence in a physical science that included laboratories
- At least a 2.70 (on the 4.00 scale) undergraduate grade point average

Quality Systems Concentration:

Applicants should have an undergraduate degree from an accredited college or university in:

Engineering	Engineering Technology
Business	Social Science
Physical Sciences	Education

Other technical and non-technical majors may be acceptable.

Applicants must have at least a 2.70 (on the 4.00 scale) undergraduate grade point average.

Admission Status

The program coordinator in conjunction with the graduate admissions committee determines the student admission status.

- 1) Full Graduate Status students have met all the criteria shown above and have been judged acceptable by the graduate programs committee.
- 2) Provisional students are graduate students who have not met all the criteria shown above. They are limited to designated courses, either graduate or undergraduate, during which they will be evaluated to determine their likelihood of success. Provisional students are not guaranteed full graduate status.

Quality Assurance

The Master's Program with a major in Quality Assurance is offered by the Industrial Engineering Technology program in order to meet an established need in both manufacturing and service industries.

The program focuses on total quality management and on analytical methods such as statistics, process, analysis, and problem solving techniques. A primary objective of the degree is to provide graduate level study opportunity to individuals who are currently practicing in the quality and related fields so that they may be aware of recent advances and modern practice.

Engineering and Technology Concentration

This concentration is designed for prospective students who have undergraduate degrees in engineering technology (any major), physical science, mathematics, and other technical majors. To qualify fully for admission students will need the technically oriented undergraduate degree including a laboratory-based physical science, at least one calculus course, and a statistics course. Two years of full time experience in the field is also expected of all applicants for this concentration.

For a fully qualified student the program requires 36 semester hours of study. This includes 8 semester hours for the Master's project, which is usually performed in the employer's facility. When admitted, students will be assigned a graduate advisor. Students are required to work frequently with their advisors to plan the program of study and to maintain progress.

Required Courses			
QA	6602	Total Quality	4
QA	6611	Advanced Statistical Applications	4
QA	6612	Advanced Experimental Design	4
QA	6615	Applied Systems Reliability	4
QA	6620	Inspection Systems Design	4
QA	6650	Quality Systems Design	4
		Electives	8
Project Options			
QA	7604	Applications in Quality	4
Non-Project Options			
QA	6620	Inspection Systems Designs	4
QA	7504	Research Methods	4

Note: A grade of "C" or better is required for each course.

Quality Systems Concentration

This concentration is designed for students who are working in the quality, training, and related developmental disciplines. The program has been established to meet the needs of the professional who has not received a formal technical education in quality, yet must support total quality, continuous improvement, process management, and re-engineering efforts within their organization.

The program focuses on total quality management and on analytical techniques. Students may elect a thesis or non-thesis option as part of their studies. A primary objective of the degree is to provide graduate level study opportunity to individuals who are currently practicing in a quality related field who have not had any formal technical education in the discipline.

The concentration is designed for prospective students who have undergraduate degrees in business, social science, education, and other non-technical majors. To qualify fully for admission students will need to hold a bachelor's degree and either be working in a quality related field, e.g., human resources or training, or desire to work in the field.

For a qualified student the program requires 36 semester hours of study. Students electing the thesis option will complete an 8 hour thesis. The remainder of the curriculum includes graduate coursework in Total Quality, Process Analysis, Technical Training, Quality Systems Design, Quality Cost Systems, and Statistical Process Control.

Required Courses			
QA	6600	Methods of Analysis	4
QA	6602	Total Quality	4
QA	6610	Statistics for Quality Assurance	4
QA	6611	Advanced Statistical Applications	4
QA	6620	Inspection Systems Design	4
QA	6630	Technical Training Methods	4
QA	6650	Quality Systems Design	4

Research Option			
QA	6640	Quality Cost and Supplier Evaluation	4
QA	7504	Research in Quality	4

Note: A grade of "C" or better is required for each course.

Admission Requirements for the Master's Program in Systems Engineering

Admission to the Master of Science program with a major in Systems Engineering is open to persons holding the bachelor or higher degree in engineering, engineering technology, computer science or physical science from an accredited college.

Preference in admission will be given to applicants having professional experience in a technical work environment. The admission procedure is competitive in that students will be admitted only if their academic accomplishments and work experience demonstrate that they can successfully complete the program.

Admissions Procedure

Applicants for admission to the Master of Science Program with a major in Systems Engineering must submit the following to the Admissions Office no later than the published deadline date before the beginning of the semester in which the applicant plans to enroll:

- An application for admission to the program,
- Two official transcripts from each college the applicant has attended, and
- A certificate of immunization.

In addition, applicants must submit the following to the Industrial Engineering Technology Program:

- An official copy of scores from the "General Test" of the Graduate Record Examination (GRE) and
- At least three recommendation forms which have been completed by former or current supervisors, professors, or professional colleagues.

International students should refer to the International Students sub-section for additional admission requirements.

Admission Criteria

Applicants shall have:

- An undergraduate degree in engineering, engineering technology, computer science, physical science or other technically orientated major from an accredited college or university,
- A minimum of two consecutive years of experience in a full-time engineering or technical professional position,
- A minimum of a 3.00 (on the 4.00 scale) undergraduate grade point average, and
- Official GRE scores meeting the current admission profile (350V and 600Q). Documentation of substantial engineering experience (more than five years) may be considered in lieu of the GRE requirement.

Admission Status

The program coordinator in conjunction with the graduate admissions committee determines the student admission status.

1. Full Graduate students have met all the criteria shown above and have been judged acceptable by the graduate programs committee.
2. Provisional students are graduate students who have not met all the criteria shown above. They are limited to designated courses, either graduate or undergraduate, during which they will be evaluated to determine their likelihood of success. Provisional students are not guaranteed full graduate status.

Systems Engineering

The Master of Science program with a major in Systems Engineering is offered by the Department of Industrial Engineering Technology in order to meet an established need in both manufacturing and service industries. The principal goal of the Systems Engineering Graduate Program is to provide an opportunity for working professionals to acquire advanced systems engineering skills through part-time study. These professionals will learn to design, analyze and manage the implementation of complex systems for business and industry.

The Systems Engineering Graduate Program will serve to educate professionals to solve industry challenges of the 21st century. These professionals will also develop the fundamental systems engineering knowledge to assess program risks, understand requirements and develop solutions to meet the complex needs of business and technology.

The Systems Engineering Graduate Program consists of the following options:

- Graduate Certificate
- Advanced Graduate Certificate
- Master of Science Degree

SPSU also offers an MS in Systems Engineering with a Civil Concentration.

Graduate Certificate Course Requirements

- SYE 6005 Introduction to Systems Engineering
- SYE 6010 Managing the Technical Effort Associated with System Creation
- SYE 6015 Systems Analysis and System Design
- SYE 6020 System Architecture

Total Systems Engineering hours = 12

Advanced Graduate Certificate Course Requirements

- Completion of the Graduate Certificate Requirements and
- SYE 6025 Engineering Economic Analysis
- SYE 6030 Verification Program Development & Management
- Two elective courses chosen from the following:
 - SYE 6035 Modeling and Simulation
 - SYE 6040 Advanced Configuration Management
 - SYE 6045 Process Assessment and Improvement
 - QA 6610 Statistics for Quality Assurance
 - SWE 6633 Software Project Management

Total Systems Engineering hours = 18

Total elective hours = 6

Master's Degree Course Requirements

- Completion of the Advanced Graduate Certificate Requirements and
- SYE 6050 Reliability and Sustainability
- SYE 6055 System Development Workshop or SYE 6060 Systems Engineering Workshop
- Two elective courses chosen from the following:
 - MGNT 6001 Management Communications
 - MGNT 6015 Technology and Innovation Management
 - MGNT 6020 R & D Management
 - MGNT 6025 Managing Professionals
 - MGNT 6030 Decision Making Techniques
 - MGNT 6050 Project Management
 - MGNT 6090 Strategic Management
 - CS 5123 Advanced Programming and Data Structures
 - CS 5153 Database Systems
 - CS 5183 Object-Oriented Programming
 - CS 6453 Simulation and Modeling
 - CS 6523 Artificial Intelligence
 - SWE 6633 Software Project Management
 - ECET 6102 Mechatronics
 - ECET 6401 Linear Control System Analysis and Design
 - ECET 6202 Embedded PC Systems
 - QA 6610 Statistics for Quality Assurance
 - QA 6611 Advanced Statistical Applications
 - QA 6722 Human Factors Engineering
 - TCOM 6001 Technical Writing and Editing

Total Systems Engineering hours = 24

Total elective hours = 12

Note: A grade of "C" or better is required in each to receive graduate credit.

Course Descriptions

Accounting Graduate

ACCT 6000

Managerial Accounting

Prerequisite: MGNT 5653 or ACCT 2101 or equivalent

3-0-3

The course deals with the procedures and concepts of computing and allocating costs for reporting, pricing, planning and control, and internal decision making. It will focus mainly on the principles and techniques dealing with merchandise and manufacturing costing, job order and process costing, standard and conventional costing, and make or buy decision-making.

Computer Science Graduate

CS 5123

Advanced Programming and Data Structures

Prerequisite: CS 1301 or equivalent course

3-0-3

Transition course for graduate students with a limited background in programming. Topics include pointers, recursion, data structures such as lists, stacks, queues, trees, etc., sorting and searching, data abstraction, introduction to runtime analysis and the big-oh notation. Appropriate programming projects are also included.

CS 5153

Database Systems

Prerequisite: CS 5123 or CS 1302 or IT 5113

3-0-3

Transition course. This course provides an overview of various database models including relational, object-oriented, hierarchical, and network. Also covered are various file structures including sequential, indexed sequential, and direct. It covers planning, analysis, design, and implementation of a database. Entity Relationship models and normalization are covered. It covers an SQL-based database system such as Oracle. A major project and/or paper required.

CS 5183

Object-Oriented Programming

Prerequisite: CS 5123 or CS 3424

3-0-3

Transition course. Topics to be covered include encapsulation and abstraction, objects and classes, inheritance, polymorphism, class libraries, and messaging. The course includes major project(s) and/or paper(s).

CS 5223

Computer Architecture

Prerequisite: CS 1301 or equivalent course

3-0-3

Transition Course: Topics from the principles of computer organization and architecture include number systems, digital logic, basic logic design in combinational and sequential circuits, and assembly and machine language.

CS 5243**Operating Systems**

Prerequisites: CS 5123/3424 and CS 5223/3223

3-0-3

Transition Course: Topics from the principles of operating systems include management of resources including processes, real and virtual memory, jobs, processes, peripherals, network, and files.

CS 5423**Mathematical Structures for Computer Science**

Prerequisites: An undergraduate course in Calculus

3-0-3

Transition course. Topics from discrete mathematics include set theory, relations and functions, principles of counting, introductory graph theory, formal logic, recursion, and finite state machines.

CS 6023**Research Methods and Presentations**

3-0-3

Materials and methods of scholarly research in computer science. Includes study of standard research paradigms with illustrative cases of each and the use of research methods and presentations in industrial and business settings.

CS 6103**Discrete -Time Signals and Systems**

Prerequisite: CS 5423

3-0-3

Underlying principles of discrete-time signals and digital signal processing. Topics include mathematical representation of discrete-time signals and systems, sampling theorem and aliasing, introduction to difference equations, IIR and FIR filters, DTF, FFT, and Z-Transforms.

CS 6123**Theory and Implementation of Programming Languages**

Prerequisites: CS 5123/3424 and CS 5423

3-0-3

Comparative study of programming language paradigms with emphasis on design and implementation issues. Covers formal definitions of syntax and semantics, data types, static and dynamic storage allocation, definition of operations, control of program flow, subroutine and function linkages, formal tools for characterizing program execution, and abstraction techniques.

CS 6153**Advanced Database Systems**

Prerequisite: CS 5153/3153 and CS 5423

3-0-3

An advanced course in database systems emphasizing design issues and implementation tradeoffs. It covers the theory, algorithms, and methods that underlie distributed databases. Relational algebra is discussed. The client-server architecture and application development are also covered.

CS 6163**Information Retrieval and Search Engines**

Prerequisites: CS 5123 and CS 5423

3-0-3

The course covers efficient storage and effective retrieval of large amounts of unstructured text information, including an overview of conventional IR techniques and newer perspectives.

CS 6223

Advanced Computer System Architecture

Prerequisites: CS 5243/3243

3-0-3

Topics include computer performance issues, instruction set architectures, RISC versus CISC, machine language, microprocessor design and implementation, performance enhancing techniques, cache memory design, and implications to operating system design.

CS 6243

Advanced Concepts in Operating Systems

Prerequisite: CS 5243/3243

3-0-3

Topics from the theory of operating systems include: memory and process management of high-performance architectures that address concurrent, parallel, and distributed processing.

CS 6263

Computer Networks

Prerequisite: CS 5243/3243

3-0-3

Issues involved in computer communications are examined, based on the layered ISO/OSI Reference Model and the TCP/IP Protocol suite. A bottom-up approach is taken with particular emphasis placed on the physical, data link, and network layers. Topics include WANs, LANs, ADSL, and wireless communication systems. Laboratory projects involve simulation of various aspects of computer communication.

CS 6283

Real-Time Systems

Prerequisite: CS 5243/3243

3-0-3

The software development life cycle as it applies to real-time systems. Labs involve the use of a real-time operating system and an associated development environment. Related topics such as concurrent task synchronization and communication, sharing of resources, schedulability, reliability, fault tolerance, and system performance are discussed. Project included.

CS 6293

Information Security: Implementation and Application

Prerequisites: CS 5123 and CS 5423

3-0-3

This course covers the fundamentals of computing security, access control technology, cryptographic algorithms, implementations, tools and their applications in communications and computing systems security. Topics include public key infrastructure, operating system security, database security, network security, web security, firewalls, security architecture and models, and ethical and legal issues in information security.

CS 6323**Human Factors**

3-0-3

The psychological, social, and technological aspects of interaction between humans and computers. Includes usability engineering, cognitive and perceptual issues, human information processing, user-centered design approaches, and development techniques for producing appropriate systems. Major project included.

CS 6353**Computer Graphics and Multimedia**

Prerequisites: CS 5123/3424 and CS 5423

3-0-3

A study of the hardware and software of computer graphics and multimedia systems from the programmer's perspective. Includes a survey of display and other media technologies, algorithms and data structures for manipulation of graphical and other media objects, and consideration of user interface design. Major project included.

CS 6413**Theory of Computation**

Prerequisites: CS 5423

3-0-3

A study of topics from theoretical computer science that includes automata and languages, computability theory, and complexity theory.

CS 6423**Algorithmic Processes**

Prerequisites: CS 5123/3424 and CS 5423

3-0-3

Design and analysis of algorithms. Includes notations for representing algorithms, mathematical techniques for analyzing algorithms for appropriateness, efficiency, completeness, correctness, and decidability.

CS 6453**Simulation and Modeling**

Prerequisites: CS 5123/3424, Matrix Algebra, and Probability and Statistics

3-0-3

The application of various modeling techniques to the understanding of computer system performance. Includes analytic modeling, queuing theory, continuous and discrete simulation methods, and the use of some simulation software tools to implement a major project.

CS 6523**Survey of Artificial Intelligence**

Prerequisite: CS 5123/3424 and CS 5423

3-0-3

A survey of the major issues in AI. Knowledge representation, reasoning, and learning with AI programming techniques. Current topics are also included.

CS 6563**Digital Image Processing and Analysis**

Prerequisites: CS 5123 and CS 5423

3-0-3

Theory and application of digital image processing. Topics include sensing, sampling and quantization, image enhancement and restoration, image transforms, geometrical image modifications, edge detection, image segmentation and classification, image coding, feature extraction, image representation, morphological image processing, and parallel image processing. Applications include satellite images and biomedical images.

CS 6593

Selected Topics in Artificial Intelligence

Prerequisites: As determined by the Instructor and Department Chair
3-0-3

In-depth study of specific AI topics. Possible topics include, but are not limited to, Expert Systems, Neural Networks, Genetic Algorithms, Machine Learning, Fuzzy Logic, etc.

CS 6703

Independent Study

Prerequisites: Approval of course director
3-0-3

Independent study/project under the direction of a graduate CS faculty member.

CS 6901-6903

Special Topics

Prerequisite: As determined by the Instructor and Department Chair
1 to 3 hours

Special topics selected by the Department Chair. Offered on a demand basis. A student may repeat this course with special permission.

CS 7803

Master's Thesis

Prerequisite: Consent of the Department Chair and the Thesis Advisor
3-0-3

The thesis is designed for students wanting a research focus to their degree. The student works independently under the supervision of a designated CS faculty member on a thesis of substance in computer science. The student will generate a formal written thesis and give a final defense of the thesis. This course may be repeated, but only 6 hours may be applied toward the degree.

Construction Graduate

CNST 5030

Descriptive Structural Systems

4-0-4

A descriptive study of structural behavior with an overview of statics, strength of materials, design of beams and columns for concrete, steel and timber structural systems.

CNST 6000

Information Methods

4-0-4

A course in communications technique improvement and preparation for functioning in an information based society. Conceptual and methodological issues in construction research will be explored with emphasis on construction specific

resources. Data development and analysis will be studied to include the concepts of validity, reliability, and applications of statistics.

CNST 6100

Construction Law: Contracts and Claims

4-0-4

This course focuses on the legal problems and concerns frequently encountered by constructors and others who participate in the construction process. Topics include the formation of contracts and the various contractual relationships; methods of modification and termination of the contracts; exploration of licensure and professional liability of the construction practitioner.

CNST 6110

Commercial Construction Transactions

Prerequisite: CNST 6100

4-0-4

This course is an extension of CNST 6100, with course topic discussion being devoted to commercial construction transactions in relation to the construction contracting process. Discussion is devoted to UCC Article 2, 3, and 9 as applicable to construction vendor contracts. Also, discussion is devoted to the hybrid contracting process and the legal implications of bidding for goods and services that qualify under commercial contract law.

CNST 6120

Dispute Resolution

Prerequisite: CNS T 6100

4-0-4

This course will survey the growth of the alternate dispute resolution field, giving emphasis to alternative dispute resolution theory and its application to the construction industry. A student will be exposed to different resolution processes relative to the construction industry: namely, negotiations, meditation and arbitration.

CNST 6130

Case Studies in Construction

Prerequisite: CNST 6100

4-0-4

This course is designed to explore the multiple contractual complications that typically arise within the construction contracting process. Topics will develop and explore the technical aspects of procurement, implementation, construction operations, through to post contractual obligation and liabilities inherent in the construction industry.

CNST 6200

Strategic Bidding and Estimating

4-0-4

A review of all normal bid-preparation activities that should take place in a prime contractor's organization from the initial decisions on project selection and receipt of drawings and specifications, through the estimating process and sub-bid research, final bid assembly, markup and submission, to postmortems and necessary follow-up actions. Significant attention will be devoted to bidding techniques, strategies, practices, and methods recommended to handle these functions.

CNST 6310**Advanced Scheduling and Integrated Controls**

4-0-4

An exploration of current techniques and practices of integrated project control systems for construction. Subjects covered include various methods of project scheduling and monitoring, resource management, time-cost tradeoffs, organizing and managing schedule data, forecasting and trend analysis, and presentation of schedule information. Special emphasis is placed on the use of modern integrated scheduling practices and associated computer tools.

CNST 6320**Construction Information Systems**

4-0-4

The interaction of information technology with the construction industry. Opportunities and risks for individuals and organizations are examined in the realms of information flow, decision-making and a changing world. Human and ethical issues are considered. Students are introduced through laboratory exercises to construction specific products, to construction applications of conventional database systems and to data transfer technologies.

CNST 6330**Advanced Operations: Constructability, Value Engineering, Productivity**

4-0-4

An exploration of project processes and organization including procurement, startup, documentation, payment, change order administration and job closeout. Included is project analysis for constructability, value engineering, and productivity analysis/improvement techniques.

CNST 6410**Building Failures and Defective Work**

4-0-4

A study of problems, trends and issues related to workmanship and product failures during a time of rapid change in the construction industry. It will discuss concepts, philosophy and technology behind the subject issues and seek the exchange of ideas and views. Students will be expected to gain knowledge in the subject topics and develop skill in researching for facts extended to effective written and verbal presentations of the findings.

CNST 6420**Tall Buildings**

4-0-4

A study of tall buildings in the society of today and tomorrow. Form giving factors will be identified and problems of planning, design and construction explored. The project manager's role in the tall building process will be related to specific building examples. International differences in the role of tall buildings will become apparent, yet common threads will be found which can be useful in a shrinking world and a more universal construction industry.

CNST 6430**Automation and Robotics**

4-0-4

A study of the level of application of automation and robots to construction. Techniques and equipment in varying stages of development as well as current applications will be presented for analysis and discussion. Students will be challenged

to conceptualize new ways of applying technology to improve industry productivity through automation and robotics.

CNST 6510

Marketing of Construction Services

4-0-4

An examination of how construction services are marketed in the various sectors of the construction industry. The relevant characteristics of construction organizations and target clients will be explored with various scenarios structured to highlight critical parameters of search and match. The potential contributions of the media and conventional planning/analysis techniques will be considered.

CNST 6520

International Construction

4-0-4

An introduction to the construction industry in the international arena. Projects and processes will be studied. Issues of contract law, industry regulation, currency exchange, payment guarantees and risk management will be examined and related to respective countries of concern. Operations under different cultural norms will be projected in realistic scenarios.

CNST 6530

Construction Markets

4-0-4

A study of the dominant factors at work in different construction markets. Geographic, technological, economic, political, organizational, and social influences on construction markets are included. Market groupings by type of construction are identified and paradigms of construction are explored.

CNST 6540

The Construction Company

4-0-4

Organization of the construction firm is covered in this course. Financing of the firm, marketing the various construction services of the firm and exploring the economics which are unique to the construction industry are analyzed. Strategic planning and planning for growth of a construction firm are included in the course. Insurance, bonding, employee development, and labor relations are studied. The continuing relationships with clients, bankers, bonding companies and design professionals are explored.

CNST 6600

Construction Risk Analysis and Control

4-0-4

This course focuses on the safety practices mandated by government regulation and required by good business practice. The costs of safety and the lack of it is examined. Workers' compensation insurance cost is integrated into the issues of safety. Exposure analysis, risk management, risk transfer and the costs associated with each are examined in this course.

CNST 6800

Construction Seminar

2-0-2

Business and management topics pertinent to the construction industry. The course consists of a series of seminar presentations by prominent industry representatives.

CNST 6901-6904

Special Topics

Prerequisite: Consent of the department head
1 to 4 hours

Special topics offered by the department. Offered on a demand basis.

CNST 7701-7704

Master's Project

Prerequisites: CNST 6000 and consent of the department head
1 to 4 hours

This course is designed for the students who want to focus their course of study on a particular aspect of construction. The student works independently under the supervision of the course professor on a project or an inquiry that is significant in the construction industry. The topic of the project or inquiry must be approved prior to registration and the student must continue the work in a manner that is satisfactory to the course professor. The student is expected to submit a substantial report and to defend this submittal and the course work taken in the degree program. This course may be repeated with departmental approval but no more than 8 hours may be applied toward the requirements for graduation.

CNST 7801-7804

Master's Thesis

Prerequisites: CNST 6000, completion of 28 hours of graduate
1 to 4 hours

Construction degree course work or consent of the department head, approval of thesis proposal intensive research project that results in a formal written thesis. The thesis topic will usually be in an area of interest discovered by the student in early stages of the Construction program or work experience. Students may enroll for a maximum of 4 hours per term for thesis credit. The student works independently under the supervision of the thesis advisor on an inquiry that is significant to the construction industry. The topic must be approved before registration and the student must continue the work in a manner that is satisfactory to the thesis advisor. The student is expected to submit a substantial body of research work and to defend this submittal and the course work taken in the degree program. This course may be repeated with departmental approval but no more than 8 hours may be applied toward the requirements of graduation.

Electrical and Computer Eng Tech Graduate

ECET 6001

Circuit and System Modeling with SPICE

Prerequisite: Semiconductor Device Theory and Applications; equivalent to ECET 2210, ECET 2310
3-3-4

A detailed study of circuit modeling using SPICE. The student will learn to model circuits and systems at the device level up to the behavioral level. This includes BJT and MOS transistors, op-amps, communications systems, control systems, etc. The student will also learn how SPICE numerical algorithms function and how to maximize the speed and accuracy of simulations.

ECET 6002

Programmable Devices

Prerequisites: Digital Theory and Applications, C and any AMS language equivalent to ECET 2210, ECET 4710
3-3-4

A study of the programming and applications of programmable devices for rapid time-to-market product development. Devices range from PLDs through MicroControllers through Programmable Analog devices. Practical experience will result from completing projects that develop systems using several of the devices.

ECET 6003

Advanced Test Engineering

Prerequisite: Fundamental Test Engineering equivalent to ECET 3600
3-3-4

An in-depth study of test engineering with emphasis on computer-aided instrumentation utilizing the IEEE-488 bus and protocols. LabVIEW for windows will be used to develop automated test systems and virtual instruments. Component, board, backplane, in-circuit, functional and systems testing will be researched and analyzed in relationship to cost, testability and fault analysis. Surface-mounted device and ASIC testing are also studied. Boundary-scan, VXI/VME, commercially available software and other test strategies will be explored.

ECET 6004

System Engineering

3-3-4

This course provides a knowledge base of those elements comprising good design practices beyond circuit design and analysis. Topics include: concurrent engineering, quality, reliability, maintainability, productivity, life-cycle cost, projectizing, manufacturing and logistic support.

ECET 6100

Discrete -time Signals and Systems

3-0-3

Underlying principles of discrete-time signals and digital signal processing. Topics include mathematical representation of discrete-time signals and systems, sampling theorem and aliasing, introduction to difference equations, IIR and FIR filters, Z-Transform, DFT, FFT and Spectral analysis. (Non-MSET majors only)

ECET 6101

Digital Signal Processing

3-3-4

This course is presented in three units. Unit one reviews underlying principles of discrete-time signals and systems, difference equations, and the design of finite impulse response and infinite impulse response filters. Topics of second unit include frequency response, Z-Transform, DTFT, DFT, and FFT with practical applications. The subject of third unit is implementation of digital filters and speech processing examples using popular DSP microprocessors such as TMS320, DSP56000, and ADSP21xxx families.

ECET 6102

Mechatronics

3-3-4

This course is about integrating electronics, mechanical engineering and computer science. It is essential for engineers or engineering technologists who have a need to work across disciplinary boundaries. The main topics covered in the course will be mechatronic system design which involves: 1) Modeling, analysis and control of dynamic physical systems; 2) Control sensors and actuators with special emphasis on brushless, stepper, linear and servo-motors; 3) Electronics for mechatronics with

special emphasis on special purpose digital and analog integrated devices; and 4) Analog, digital and hybrid mechatronic systems such as hard-disk drives and robots.

ECET 6201

Advanced Digital Design

3-3-4

Prerequisites: Digital Theory and Application, C and Assembly Language equivalent to ECET 2210, ECET 4710 A detailed study of modern digital design principles and techniques. Topics will be investigated utilizing advanced programmable logic devices such as CPLD's, EPLD's, and FPGA's. Device development using both VHDL and schematic capture tools will be thoroughly explored. Practical experience and additional insight will be gained in the design and development of practical solutions to modern problems.

ECET 6202

Embedded PC Systems

3-3-4

This course will focus on the latest developments in the field of embedded PCs (80186 & 80386x processors). Emphasis will be on single-board systems used in the control environment. Customizing the ROM BIOS and developing ROM code will be studied. C, assembly language and real-time executive programming tools will be used.

ECET 6203

Topics in Machine Intelligence

3-3-4

The principles, theory and current applications of fuzzy-logic and neural-networks are covered in this course. Discussions will include how neural network simulations are used to solve decision-making tasks. Other topics included are machine vision and speech analysis. Practical experience and additional insight will result from students using the principles and theories studied in class to develop practical solutions to actual problems.

ECET 6204

Networked Embedded PCs

Prerequisite: ECET 6202

3-3-4

A course covering the basics of embedded PCs and their applications in networks and wireless systems. Covers the 80x86 architecture and C++ programming, then covers network programming using TCP/IP. Emphasizes connecting embedded PCs via Ethernet, wireless systems and the Internet. Also, Win CE development will be introduced.

ECET 6300

Telecommunications Networking

3-0-3

A study of the fundamentals of telecommunications systems, emphasizing the management viewpoint. Course covers voice and data networks, and the regulations and standards affecting them. Laboratory demonstrations will illustrate key concepts. Course cannot be used as credit for ECET majors.

ECET 6301

Telecommunications

Prerequisite: Communications background equivalent to ECET 3400, ECET 4820

3-3-4

The study of technologies and services deployed in today's public and private wide-area networks. Circuit-switched and packet-switched networks for voice and data will be studied. Topics include ISDN, X.25, SONET/SDH, ATM, and more. Students gain practical experience through detailed studies of actual WAN solutions used by various organizations.

ECET 6302

Digital Communication Networks

Prerequisite: Communications background equivalent to ECET 3400, ECET 4820
3-3-4

A detailed study of local area networks emphasizing characteristics, standards, protocols, and performance. Topics include Ethernet, Token Ring, routing, domain and peer networking, and network security. The configuration and interaction of networking devices, operation systems, and applications will be examined. Lab exercises and projects illustrate concepts.

ECET 6303

Wireless Communication Systems

Prerequisite: Communications background equivalent to ECET 3400, ECET 3410
3-3-4

A detailed study of wireless communication networks with special emphasis on applications, access techniques and interconnection with other networks. Topics include cellular telephones, personal communication systems, wireless LANs, and satellite systems. Students will gain practical experience by studying networks used by enterprises to enhance productivity and competitiveness.

ECET 6401

Linear Control System Analysis and Design

3-3-4

This course is a thorough study of Modern Control Systems. Both time-domain and frequency domain methods of analysis, design and compensation of linear feedback control systems are covered. Topics include Laplace Transform methods, State Space analysis, stability analysis using Root Locus and frequency response methods, Nyquist criterion, and practical examples of design and compensation of feedback control systems. This course will make extensive use of computer-aided design packages such as MATLAB.

ECET 6402

Power Flow Studies and Fault Analysis

Prerequisite: Power system analysis background equivalent to ECET 4510
3-3-4

This is a course on modern power system analysis and design. The first part of the course is devoted to the typical topics in Power System analysis. In the second part of the course, emphasis is placed on topics such as power flow solutions, symmetrical faults, symmetrical components and sequence networks, unsymmetrical faults and power system stability.

ECET 6403

Applications of Power Electronics in Electric Drive Systems

Prerequisite: Undergraduate machinery course equivalent to ECET 3500
3-3-4

This course combines electric machinery, control and power electronics. The first part of the course is devoted entirely to Power Electronics. The second part is devoted to the application of power electronics in the speed control of electric machinery. Both dc and ac motor drive systems are covered. MATLAB and Spice will be extensively used for computation and verification purposes. Practical and hands-on experience will be gained using practical electric drive systems in the second part of the course.

ECET 6704**Project Proposal**

Prerequisites: At least 24 hours completed toward degree and permission of project advisor
1-8-4

Guided by his/her Project Committee, the student will prepare a Proposal for his/her Masters Project. This proposal must conform to the published guidelines, be approved by the Project Committee and filed with the ECET office. In addition, the student will make substantial progress toward meeting the goals stated in the proposal and file an approved Progress Report. The filing of the Project-Committee approved Proposal and Progress Report will constitute completion of this course.

ECET 6901-6905**Special Topics**

1 to 5 hours

The topic election and credit for this course will be by written agreement among the student, the instructor and the department head.

ECET 7504**Research**

Prerequisites: At least 28 hours completed toward degree and permission of instructor
2-6-4

A seminar in research and development methods, current industrial practice and application of new technologies. Guided by the instructor, each student will choose a current topic in Electrical or Computer Engineering Technology, become informed about the principles and applications of that topic and ultimately produce a research report which is presented during the ECET Forum.

ECET 7704**Project**

Prerequisites: ECET 6704 and permission of project advisor
1-8-4

Guided by his/her Project Committee, the student will complete his/her Masters Project. The student must demonstrate completion of the project to his/her committee and obtain the committee's approval. The student will prepare a final report that completely documents the project and will present this report to the department. Written acceptance by the Committee of the Final Report will constitute the completion of this course.

Finance Graduate

FIN 6005**Financial Management**

Prerequisite: MGNT 5653 or 3125 or equivalent
3-0-3

This course includes a review of capital budgeting and ratio analysis, making further extensions in the areas of probability-dependent project analysis, co-varying risks and optimal capital structure. Other topics include working capital management, insurance and hedging strategies.

Information Design and Communication Graduate

IDC 6001

Technical Writing and Editing

3-0-3

Overview of technical writing and editing. Emphasis on drafting and editing many documents that reflect the variety of writing done in the field of technical communication. Both experienced and inexperienced writers will benefit from this course, which must be taken the first semester of enrollment in the master's program.

IDC 6002

Information Design

Prerequisite or Co-Requisites: IDC 6001, IDC 6030

3-0-3

Study of the main design elements in information products with an emphasis on rhetorical and theoretical underpinnings for design decisions. Students work on designing and redesigning products in various media. Requirements include a report on document design that demonstrates solid application of theoretical principles. Should be taken as soon as possible after admission.

IDC 6003

Advanced Editing

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002

3-0-3

Course examines the responsibilities of an editor, including the skills and talents necessary to become a successful editor. Focus is on developmental editing, copyediting, editing graphics, and editing electronic documents. Also covers (a) interpersonal skills relative to editing, (b) organizational aspects of editing, and (c) production issues such as selecting paper stock, bidding jobs, binding documents, and inspecting presses on-site for major jobs.

IDC 6004

Advanced Research

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002

3-0-3

Course prepares students to write a journal-quality article or a master's thesis. Introduces methods of quantitative and qualitative inquiry used in technical communication research, develops the skills for conducting a search and review of literature, teaches techniques of collecting and analyzing data, and covers the elements of a formal research report. Strongly encouraged for students who choose the thesis option.

IDC 6030

Foundations of Graphics

Prerequisite: IDC 6001

An introduction to the fundamental elements and principles of graphic design and application of these concepts to page design and layout. Study of elementary color theory. Introduction to production techniques and current software applications. Students who took TCOM 4030 Foundations of Graphics as undergraduates must take IDC 6040 Applied Graphics as their required graphics course instead of IDC 6030. Students who took TCOM 4030 Foundations of Graphics as undergraduates may not count IDC 6030 for credit toward their graduate degree.

IDC 6040

Applied Graphics

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Course examines the role of graphics in technical and professional communication. Students develop competency in desktop publishing, digital image editing, and vector-based graphics applications. Students complete practical projects that use typography, photographs, illustrations, engineering drawings, and data graphics. Projects focus on the role of graphics as both an independent communication and as support for text-based media used in business, industry, education, and training.

IDC 6045**Foundations of Multimedia**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

A study of the foundations of multimedia including theory, planning, scripting, storyboarding, and production. Students will submit research work on the theory of multimedia. This course is double-listed for both undergraduate and graduate students. Graduate students will be required to complete additional work that emphasizes theory and research over application. Thus, they must demonstrate a higher level of learning than undergraduates. MSTPC students who took TCOM 4045 Foundations of Multimedia as undergraduates may not count IDC 6045 for credit toward their graduate degree.

IDC 6050**Applied Multimedia**

Prerequisite: IDC 6001, IDC 6030, IDC 6045; Co- or Pre-Requisite: IDC 6002
3-0-3

Study of specific applications of multimedia in technical and professional communication, education, marketing, and training, including authoring for Web pages. Projects emphasize hypermedia, hyperlinks, and interactive design for use in technical manuals, proposals, informational kiosks, marketing presentations, resumes, and electronic information systems.

IDC 6060**International Technical Communication**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Survey of the major issues that affect technical communication from a global perspective. Topics may include cultural influences on communication, challenges associated with technical translation, differing uses of graphics, communicating within multi-national organizations, and theoretical issues related to international communication.

IDC 6070**User Documentation**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002

Introduction to the process and principles of writing manuals, with emphasis on user manuals. Students write and produce all or part of a manual. Course includes study of structured writing. Course also includes discussion of (1) production issues, (2) theory relevant to designing usable and readable manuals, and (3) current software applications. MSTPC students who took TCOM 4070 User Documentation as undergraduates may not count IDC 6070 for credit toward their graduate degree.

IDC 6080**Professional Oral Presentations**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002

Course designed to enhance students' presentation skills in a technical and business environment. Students practice various speech types such as briefings, interviews, formal technical presentations, panels, and impromptu presentations. Whenever possible, presentations are videotaped for analysis and review.

IDC 6090

Medical Communication

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Course examines the scope of medical communication, with emphasis on opportunities for technical communication professionals. Students will analyze, edit, and revise various medical document types, such as medical research abstracts, patient education materials, professional medical training documents, medical advertisements, and pharmaceutical package inserts. Students will independently study medical terminology and develop a portfolio of medical writing samples.

IDC 6110

Communications Project Management

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Course introduces and applies the literature, tools, and techniques of professional project management. Includes major online course elements. Students will choose a project in technical communication and apply the major phases of project management: definition, planning, execution, and closing. Topics of emphasis include communication skills, project management software tools, and project team dynamics.

IDC 6120

Usability Testing

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Study of the relevant research and practical application of usability testing as part of product development. Includes strategies for planning, conducting, and analyzing a test. Teams will perform tests and report results from an actual test in a usability lab.

IDC 6130

Online Documentation

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Study of the design and development of effective online Help systems and web-based documentation. Presents principles of usable online information design, task-based user analysis, and advanced tools and technologies for developing and delivering online information products, including single-sourcing, SGML, and XML. Students design and develop an HTML Help system. Instruction will be provided in the use of RoboHelp and alternative HTML Help authoring tools. Students entering the course without basic HTML knowledge will be expected to learn the basics of HTML on their own. This course is double-listed for both undergraduate and graduate students. Graduate students will be required to complete additional work that emphasizes theory and research over application. Thus they must demonstrate a higher level of learning than undergraduates.

IDC 6135**Website Design**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Advanced theoretical study and application of best practices for the design and delivery of information on the World Wide Web. Students learn the fundamentals of HTML, use of HTML authoring tools, web content writing and editing, page layout, design of web graphics and multimedia elements, and website architecture and content management. Students work individually and in teams to design and develop websites. Some classroom instruction is provided in basic HTML and XHTML coding, the composition of cascading style sheets, and the use of a current web site development software package.

IDC 6140**Instructional Systems Design**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Course introduces and applies the literature, tools, and techniques of systematic instructional design. Includes substantial online course elements. Students will study major models of instructional design and apply them to develop and refine a unit of instruction. The course addresses the literature and theory underlying formal instructional development -- particularly cognitive psychology -- and provides practice in goal analysis, team instructional development, formative evaluation, and evaluation.

IDC 6145**Performance Technology**

Prerequisite: TCOM 6001 and TCOM 6030; Co- or Pre-Requisite: TCOM 6002
3-0-3

Course introduces and applies the literature, tools, and techniques of performance technology. The performance technologist analyzes and solves human productivity and efficiency problems in the workplace. Students will examine major models of performance improvement, and adapt and apply them to simulated corporate productivity challenges, and to real opportunities in their own work experience. This highly participatory course is a natural complement to graduate courses in instructional design and instructional technology.

IDC 6150**Marketing Communication**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Course examines those aspects of technical communication that include advertising, brochures, catalogs, press releases, and other means of marketing in both print and other media. Includes analysis of web pages and the uses of the World Wide Web for marketing purposes.

IDC 6160**Rhetoric: History, Theory, and Practice**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Course introduces rhetoric as the relationship between thought and expression. Explores connections between rhetoric and writing, between a public act and a personal thinking process, by examining classical and contemporary accounts of rhetorical history and theory. Students apply theory to their own writing as they explore the relationship between writers, readers, and subjects and the range of options available to communicators. This course is double-listed for both undergraduate and graduate students. Graduate students will be required to complete additional work that emphasizes theory and research over application. Thus they must demonstrate a higher level of learning than undergraduates.

IDC 6165**Writing Style in the Workplace**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

This course examines writing style in the workplace. Topics include grammar, paragraphs, sentence structure, diction, spelling, and revision, as well as some larger issues surrounding style (persuasion, discourse communities, appropriateness, tone, bias, ethos). The objective of the course is to make students better writers of technical prose by understanding how to make effective stylistic choices.

IDC 6170**Video Production**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

Introduction to the role and use of video production for technical and professional communication. Topics include scripts, storyboards, shot selection, continuity, lighting, sound, in-camera editing, and fundamental post-production techniques. Students complete at least two assigned videos as individual or team projects. This course is double-listed for both undergraduate and graduate students. Graduate students will be required to complete additional work that emphasizes theory and research over application. Thus they must demonstrate a higher level of learning than undergraduates. MSTPC students who took TCOM 4170 Video Production as undergraduates may not count IDC 6170 for credit toward their graduate degree.

IDC 6901-6903**Special Topics**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
1 to 3 hours

A course on a special topic of importance and relevance to the field of technical and professional communication not covered in the graduate curriculum. Offered when needed.

IDC 7503**Independent Study**

Prerequisite: IDC 6001 and IDC 6030; Co- or Pre-Requisite: IDC 6002
3-0-3

A directed study for a graduate student who wishes to pursue a special interest in technical and professional communication not covered in the curriculum. The student submits to the IDC Graduate Program Director a proposal that clearly defines the course of study and the benefits to be obtained. The proposal must be submitted at least one semester prior to registration for independent study hours. Once the proposal is approved, the student is assigned a faculty advisor and registers for 3 credit hours.

IDC 7601-7603

Master's Internship

Prerequisites: Completion of 27 hours of IDC coursework or consent of the department chair, confirmation of approved internship
1 to 3 hours

Course provides student with hands-on experience in technical communication in a professional environment. Work should be typical of technical communicators. Work may be either an extended project or a variety of shorter assignments. (Total of 6 hours of Master's Internship required.)

IDC 7801-7803

Master's Thesis

Prerequisites: Completion of 30 hours of IDC coursework or consent of the department chair, approval of thesis proposal
1 to 3 hours

Intensive research project that results in a formal written thesis. Usually flows from an area of interest discovered by the student in early stages of the Technical and Professional Communication program or through work experience. Thesis work will be closely supervised by the student's advisor. Students may enroll for a maximum of 3 hours per term for thesis credit, with exceptions at the discretion of the department chair. (Total of 6 hours of Master's Thesis required.)

Information Technology Graduate

IT 5113

Advanced Programming and Applications

Prerequisite: IT 1113 or equivalent
3-0-3

This course includes topics in beginning data structures, including arrays, stacks and queues. In addition, the course examines different computer applications concentrating primarily on those used in business and management. CS and MSSE students cannot receive credit for this course.

IT 5123

Web Development

Prerequisite: IT 5113 or equivalent
3-0-3

This course examines how to create applications for the world- wide- web. Topics include current languages (such as HTML, XML, CGI, JAVA Script) and human-computer interfaces for the web.

IT 5133

Data Communications & Networks

Prerequisite: IT 5113 or equivalent
3-0-3

Fundamental concepts of computer networking. Topics include properties of signals and media, information encoding, error detection and recovery, LANs, backbones, WANs, network topologies, routing, Internet protocols, and security issues. The focus is on general concepts together with their application to support the business enterprise.

IT 6403

Windows Application Development

Prerequisite: CS 5153 or equivalent

3-0-3

This course covers the logical analysis, design, development, testing and implementation of a windows system. Students will implement an object-based, event-driven design using a programming environment.

IT 6473

Multimedia Applications

Prerequisite: CS 5153 or equivalent

3-0-3

This course introduces students to current practices, technologies, methodologies, and authoring systems in the design and implementation of systems that incorporate text, audio, images, animation and full-motion video. Students will complete multimedia projects using state-of-the-art tools.

IT 6643

Issues in Information Management

3-0-3

This course addresses current issues relating to computers, ethics, and social values. Topics include computer ethics, computer crime, abuse, social responsibility, risk analysis, computer law and cultural impact. Library and internet research components are included, and a major research paper is required.

IT 6663

Data Center Management

Prerequisite: CS 5153 or equivalent

3-0-3

Issues in setting up and running a multi-user computer or data system. Includes RFP generation, vendor selection, project planning and control methods, backup and disaster recovery plans, site preparation, managing help desks, end user training, IT professional development, contract negotiation, outsourcing relationships and job scheduling.

IT 6683

Management of Information Technology

Prerequisite: CS 5153 or equivalent

3-0-3

A study of the use of computer and information management systems in the management of organizations. Includes formal characterization of management structures, identification of information needs, and integrated tools for providing MIS support. Major project included.

IT 6723

Managing Operating and Network Systems

Prerequisite: IT 5133 and CS 5153, or equivalent

3-0-3

This course covers the installation and management of operating systems and telecommunications networks, including cost-benefit analysis, and evaluation of connectivity options. Students learn to evaluate, select and implement different operating and communications options to support an organization.

IT 6733

Database Administration

Prerequisite: CS 5153 or equivalent
3-0-3

This course covers data administration and management, backup/recovery, security, access control, performance monitoring and tuning, data warehousing, data mining, online analytical processing, centralized versus distributed environments, client server and world-wide-web database integration.

IT 6753

Advanced Web Concepts & Applications

Prerequisites: IT 5123 and CS 5153, or equivalent
3-0-3

This course covers web services and content management for advanced web applications. Students will gain familiarity with: advanced business concepts for the web; best practices and development processes for web applications; and a variety of appropriate web tools both in the proprietary and open source domains.

IT 6763

Electronic Commerce

Prerequisite: CS 5153 or equivalent
3-0-3

This course covers tools, skills, business concepts, and social issues that surround the emergence of electronic commerce. The student will develop an understanding of the current practices and opportunities in EDI, electronic publishing, electronic shopping, electronic distribution, electronic collaboration and database issues. Other issues include standards, security, authentication, privacy, intellectual property, acceptable use, legal liability, and economic analysis.

IT 6903

Special Topics in Information Technology

Prerequisite: CS 5153 or equivalent
3-0-3

Special topics selected by the Department Chair. Offered on a demand basis.

IT 7803

Master's Thesis

Prerequisite: Consent of both the department chair or graduate coordinator and the thesis advisor
3-0-3

The thesis is designed for students wanting a research focus to their degree. The student works independently under the supervision of a designated faculty member on a thesis of substance in information technology. The student will generate a formal written thesis and give a final defense of the thesis. The course may be repeated, but only 6 hours may be applied toward the degree.

IT 7833

IT Strategy and Policy

Prerequisite: CS 5153 and consent of department chair or graduate coordinator
3-0-3

This is a capstone course in which students complete a major project which integrates elements of the field.

Management Graduate

MGNT 5653

Financial Decision Making

3-0-3

Students are introduced to fundamental principles of accounting for economic events and the use of basic financial statements. The business finance component presents an overview of financial analysis, budgeting, asset management and financial strategy in business decision-making. Transition course for the undergraduate common professional core (CPC). Covers the concepts from ACCT 2101 and MGNT 3125.

MGNT 5773

Managerial Decision Making

3-0-3

Introduces the application of probability and statistics to business decision making; including descriptive statistics, probability, normal distribution, sampling, confidence intervals, hypothesis testing, and simple linear regression. The production/operations topics include productivity, competitiveness, strategy, product and service design, process selection, capacity planning, facility layout, work system design, and location planning. This course also introduces the student to the study of human behavior in organizations. It explores management and organizational behavioral practices which lead to human resource development and organizational effectiveness. Transition course for the CPC. Covers the concepts from MGNT 3105, MGNT 3505, and MGNT 4151.

MGNT 5873

Strategic Environment of Business

3-0-3

An overview of economic theory with an introduction to the impact of fiscal and monetary policies, and consumer and business decision-making. The marketing component explores buyer motivation, organizational and individual decision-making, changing buyer behavior, and market positioning and segmentation. The legal component introduces the fundamental legal and regulatory parameters that define, promote and limit business activities. Topics include constitutional law, torts, intellectual property, contracts, business organizations, employment law, agency law and antitrust law. Transition course for the CPC. Covers the concepts from ECON 2101, MGNT 3135, and MGNT 3145.

MGNT 6001

Management Communications

3-0-3

Effective communication skills are essential for managers in high technology environments. This course will emphasize skill building in writing, oral presentations, interpersonal communication, and research.

MGNT 6005

Managerial Economics

Prerequisite: ECON 2101 and MGNT 3505 or equivalent

3-0-3

Managerial economics focuses heavily on applied microeconomics issues. At its core is a value maximizing objective for the firm. Included in the course work will be

traditional topics associated with microeconomics. Analysis of demand, production, cost, market structure, pricing and capital budgeting.

MGNT 6015

Technology and Innovation Management

Prerequisite: MGNT 3105 or equivalent

3-0-3

This course emphasizes innovation and creativity, and evaluation and analysis of new technology. The objective is to learn how to evaluate new technologies (either hard or soft) in order to be able to determine whether or not to make significant investments in them.

MGNT 6020

R&D Management

Prerequisite: MGNT 6015

3-0-3

A systematic examination of product innovations ranging from planning and research to development and commercialization or implementation of new product technology. Topics include pertinent business policy and strategic management issues, the process of innovation, concepts and interconnections between product and process creativity management, technology transfer, and relevant marketing issues. Students will analyze cases and do a project.

MGNT 6025

Managing Professionals

Prerequisite: MGNT 3105 or equivalent

3-0-3

This course examines the working relationship between management and professional employees in high technology organizations. Using management theory as a foundation, the course emphasizes experiential learning in order to develop effective leadership and team building skills which students can apply immediately. Learning methods include case studies, team exercises, role playing, individual and group presentation, experiential and group discussions.

MGNT 6040

Current Readings in Management of Technology

3-0-3

This course will examine how technology impacts public issues. The content of the course will be based on the issues currently of concern and will range from ecology to health care to telecommunications.

MGNT 6050

Project Management

Prerequisites: MGNT 3105, MGNT 3505 or equivalent

3-0-3

A study of the project planning, organizing, control concepts and techniques. Coverage will include projects and specifications. Work Breakdown Structures (WBS), the Critical Path Method (CPM), the Program Evaluation and Review Technique (PERT), Gantt charting, and time/resource management.

MGNT 6055

Total Quality Management

Prerequisites: MGNT 3105 or equivalent

3-0-3

The concepts of TQM will develop leadership and interpersonal skills along with an understanding of planning and customer satisfaction, in addition to process analysis. The discussion will focus on quality and how to use project teams, such as selecting a project and choosing team members. Topics will be covered concerning setting up meetings and guidelines for productive meetings. Team aspects and team building and activities will also be discussed.

MGNT 6060

Entrepreneurship

Prerequisites: MGNT 3105, MGNT 3125, MGNT 3135 and MGNT 6005 or equivalent
3-0-3

This course addresses the management challenges associated with starting and successfully running a new venture. It provides students with an opportunity to apply the theories and tools that they have learned elsewhere in the curriculum to the venture creation process.

MGNT 6065

Issues in International Management

Prerequisites: MGNT 3105, MGNT 3125, MGNT 3135, MGNT 6005 or equivalent
3-0-3

This course deals with cultural, institutional, economic, and financial environments characteristic of international markets. It will focus on strategic and operational plans that managers must undertake in formulating international business activities.

MGNT 6070

Employment and Labor Relations

Prerequisite: MGNT 3105 or equivalent
3-0-3

This course will cover employment practices and employment law in unionized and non-unionized settings. The focus will be on decision making and administrative issues for managers.

MGNT 6090

Strategic Management

Prerequisites: MGNT CPC covered in 5000-level transition courses; MGNT 6001, instructor approval
3-0-3

This capstone course exposes the student to the process of strategic decision-making. Emphasis is placed on the use of various tools for strategic analyses in development of the strategic plan and the determination of the long-term character of the enterprise. Cases will be analyzed, and classroom presentations will be made by distinguished industrial executives and leaders.

MGNT 6901-6903

Special Topics

Prerequisites: as determined by the instructor and Department Chair
1 to 3 hours

Special topics selected by the Department Chair. Offered on a demand basis. A student may repeat this course with special permission.

MGNT 7501-7503

Independent Research

Prerequisite: MGNT 3105 or equivalent
1 to 3 hours

Course covers special topics of interest to the students. Course credit and topic are arranged between instructor and student.

Management Information Systems Graduate

MIS 6010

Management of Information Technology

3-0-3

A comprehensive study of the application of information technology within organizations. Includes focus on data generation, retrieval, analysis, and utilization in managing and decision-making activities.

MIS 6020

Analysis and Logical Design

Prerequisite: MIS 6010

3-0-3

This course provides an understanding of the system development and modification process. It enables students to evaluate and choose a system development methodology. It emphasizes the factors for effective communication and integration with users and user systems. It encourages interpersonal skill development with clients, users, team members, and others associated with development, operation and maintenance of the system. Topics will include project oriented analysis, design, and use of data modeling tools.

MIS 6030

Physical Design and Implementation with DBMS

Prerequisite: MIS 6020

3-0-3

This course covers information systems design and implementation within a database management system environment. Students will demonstrate their mastery of the design process acquired in earlier courses by designing and constructing a physical system using database software to implement the logical design.

MIS 6040

Physical Design and Implementation within a Programming Environment

Prerequisite: MIS 6020

3-0-3

This course covers physical design, programming, testing and implementation of the system. Implementations of object-oriented, client-server designs using a programming environment.

MIS 6050

Project Management and Practice

Prerequisites: MGNT 3105 and MGNT 3505 or equivalent

3-0-3

This course covers the factors necessary for successful management of system development or enhancement projects. Both technical and behavioral aspects of project management are discussed. The focus is on management of development for enterprise-level systems.

Marketing Graduate

MKTG 6010

Marketing Management

Prerequisite: MGNT 3135 or equivalent
3-0-3

In this course students learn to recognize and understand the mechanisms that drive production and consumption - commonly referred to as "marketing." This course will deliver the logic and common sense associated with sound marketing management principles under changing global conditions. The student will learn to understand events occurring in today's dynamic global marketplace as well as to apply these marketing principles to specific managerial environments.

MKTG 6012

Sales Management

Prerequisite: MGNT 3135 or equivalent
3-0-3

Sales management will highlight the differences in responsibilities experienced by a sales manager from those of a manager geographically located with his or her subordinates. A study of the "arms length" supervision requirements of sales management and the key role of motivation will better equip students to manage any group in a business environment. Emphasis is also placed on hiring skills because much of a sales manager's effort is devoted to maintaining and expanding a sales force.

MKTG 6024

Business-to-Business Marketing

Prerequisite: MGNT 3135 or equivalent
3-0-3

This course in business-to-business marketing builds a foundation for the student to better understand all of the underlying conditions that govern an industrial marketing transaction beyond simply analyzing the product that is being sought. The role of technology and its importance in the development of industrial products is explored along with the critical role of services and their interrelation to the products with which they are connected.

MKTG 6028

Marketing Research

Prerequisite: MGNT 3505 or equivalent
3-0-3

Marketing Research enables the student to actually conduct an opinion research project to better understand the underpinnings of a successful marketplace query. Actual business survey opportunities are sought so that the student gains "hands-on" experience in questionnaire design, data gathering and analysis. The student teams then prepare both a written and oral presentation of the results to experience the relationship between researcher and management in the gathering and communication of research information. The statistics prerequisite enables the student to effectively utilize SPSS for windows to manipulate the gathered data and disseminate it into meaningful decisions.

Operations Management Graduate

OPSM 6005

Service and Production Operations Management I

Prerequisite: MGNT 4151 or equivalent

3-0-3

A survey of service and production management. Topics include productivity, forecasting, competitiveness, operations strategy, product and service design, process design selection, capacity planning, facility layout, design of work systems, and location planning.

OPSM 6006

Service and Production Operations Management II

Prerequisites: MGNT 4151 or equivalent, OPSM 6005

3-0-3

This course is a continuation of OPSM 6005. Topics include aggregate planning, inventory management, quality assurance, materials requirement planning, shop floor management, scheduling, performance measurement, Just-in-Time, synchronous operations, and global enterprise operations.

OPSM 6025

Purchasing Management

Prerequisites: MGNT 3145, MGNT 4151 or equivalent

3-0-3

Study of the activities, responsibilities, relationships and systems involved in the purchase of materials, services and capital equipment. Topics include identifying requirements; evaluating and selecting "best value" vendors; techniques for planning and executing the purchasing function, including fundamentals of negotiating, ethical and legal aspects of purchasing; interactions with the engineering, quality, manufacturing, materials management, transportation and legal functions and with suppliers; and international aspects of purchasing. Purchasing responsibility for quality, delivery, inventory, price and contribution to profit are also covered.

Quality Assurance

QA 6600

Methods of Analysis

3-0-3

A study of the analytic processes required to identify, document, define, and measure requirements and limitations for any operating system. Classwork will focus on identifying, describing, and measuring existing manufacturing and service systems. Methods available for system improvement will be investigated.

QA 6602

Total Quality

3-0-3

A study of the functions and responsibilities of the quality organization. TQM concepts, quality function deployment, and the tools for continuous improvement are analyzed for sequence of use and application. Emphasis is placed on design and performance aspects of a system-wide quality assurance function.

QA 6610

Statistics for Quality Assurance

3-0-3

Descriptive statistics for discrete and continuous variables, probability distributions, confidence intervals and hypothesis testing, elementary control charts for variables and attributes, the design of acceptance sampling plans, analysis of variance, and regression and correlation analysis.

QA 6611**Advanced Statistical Applications**

Prerequisite: A course in statistics, such as MATH 2260 or QA 6610
3-0-3

The application of advanced statistical methodologies to the analysis and solution of quality and management problems, including probability theory, control charts, sampling, regression analysis, and design of experiments. The focus is on statistical process control and related quality technologies.

QA 6612**Advanced Experimental Design**

Prerequisite: QA 6611
3-0-3

Analysis of statistical experimental design strategies, and planning of experiments for the best strategy and objectives. The use of existing computer application packages will be stressed.

QA 6615**Applied Systems Reliability**

Prerequisite: QA 6612
3-0-3

Analysis of appropriate probabilistic models for system reliability, including the exponential, Weibull, normal, and lognormal distributions, life prediction techniques, reliability test program plans, failure mode and effect analysis, Markov models, and maintainability concepts.

QA 6620**Inspection Systems Design**

Prerequisite: QA 6610
3-0-3

Understanding inspection systems, measurement principles, and limitations. Included are acceptance sampling plans such as ANSI Z1.4, ANSI Z1.9, Dodge Romig, and stipulated risk, chain, sequential, and continuous plans.

QA 6630**Technical Training Methods**

3-0-3

Adult learning theory, the development and management of training programs, presentation techniques, instructional aids, and assessment will be investigated.

QA 6640**Quality Cost and Supplier Evaluation**

Prerequisite: QA 6602
3-0-3

A detailed analysis of cost reductions involved in continuous improvement. Supplier evaluation, including quality audits, is reviewed to establish capability. The concept of partnerships is explored.

QA 6650**Quality Systems Design**

Prerequisite: QA 6602
3-0-3

The development of the quality organization, systems, and procedures necessary for effective participation in world markets. Creating and documenting methods and procedures are stressed.

QA 6660**Six Sigma Black Belt Concepts**

Prerequisite: QA 6602 or QA 6612

3-0-3

A study and review of the Six Sigma Black Belt body of knowledge, including the DMAIC Methodology, Enterprise – wide deployment, project management, the lean enterprise and design for Six Sigma.

QA 6712**Quality Systems Simulation**

Prerequisite: QA 6611

3-0-3

The application of simulation to quality systems. Topics covered include fundamental simulation modeling techniques, random sampling procedures and methods of estimating performance measures from simulation outputs. Emphasis will be upon hands-on simulation of various quality systems using PC-based simulation languages.

QA 6722**Human Factors in Quality Assurance**

Prerequisite: QA 6600 or QA 6602

3-0-3

A comprehensive survey of human factors theory, research, and applications which are of particular relevance to quality assurance. Emphasis will be placed on operator constraints in the design of work processes, workplaces, and instrumentation.

QA 6763**Software Quality**

3-0-3

The Personal Software Process (PSP) is a technology that brings discipline to the practices of individual software engineers, dramatically improving the quality, predictability, and cycle time for software-intensive systems. PSP makes engineers aware of the processes they use to do their work and the performance of those processes. The course covers quality assessment, cost estimation, configuration management, software performance measures, proof of correctness, validation and verification, and management of the total quality environment for software.

QA 6901-6903**Special Topics in Quality**

1 to 3 hours

Students may arrange to study and perform independent research on a topic approved by a graduate faculty member. An appropriate research paper will be required and the student may be required to make an oral presentation to faculty, graduate students, and/or quality professionals.

QA 7403**Graduate Seminar**

Prerequisites: QA 6602, QA 6611 or consent of the department head

3-0-3

The course is designed to cover various topics within the field of quality assurance which are not taught in other courses. These topics might include acceptance sampling, risk analysis, regression analysis, SPC training methods, and others. This course may be used in lieu of QA 7503 or QA 7603.

QA 7503**Research in Quality**

Prerequisites: QA 6602, QA 6611 or consent of the department head
3-0-3

This course is designed to guide the student in a thorough and in-depth written examination of one or more topics relevant to the application of quality assurance. Emphasis is placed upon students using both traditional and electronic means to perform the research.

QA 7603**Applications in Quality**

3-0-3

This course is designed to guide the students through a thorough and in-depth application of quality principles in the workplace environment. Emphasis will be on the application of the principles and measurable outcomes.

Software Engineering Graduate

SWE 6343**User Interface Design and Implementation**

Prerequisite: SWE 6623
3-0-3

This course covers the major frameworks, methods, and approaches to designing, engineering, implementing, and testing user interfaces. It covers user and usability requirements gathering, task analysis, user-interface design, implementation of the user interface, and evaluation with respect to requirements and the users' tasks. Illustrative design and implementation projects are completed throughout the term.

SWE 6623**Software Engineering I**

Prerequisite: CS 5123/3424
3-0-3

This course covers the initial phases of the software-development life cycle. Topics include planning, requirements analysis, requirements specification, and design. A number of techniques for performing analysis and design are explored and applied in a major project.

SWE 6633**Software Project Management**

Prerequisites: SWE 6623
3-0-3

Focus on organizational and technical roles in software engineering. Emphasis on: models of software life cycle, software maturity framework, strategies of implementing software, software process assessment, project planning tools, software configuration management, managing software quality and usability, leadership principles, and professional and ethical issues. A required project combines technical and managerial techniques for assessing software design and development.

SWE 6723**Software Engineering II**

Prerequisite: SWE 6623
3-0-3

This course covers the entire software development life-cycle. Emphasis is placed on advanced topics including prototyping, verification and validation, formal methods, and quality management. A major component is a group project that utilizes a Computer Assisted Software Engineering (CASE) tool to assist in the analysis, design, and implementation of a system.

SWE 6743

Object-Oriented Analysis and Design

Prerequisites: CS 5183/3663 and SWE 6623

3-0-3

This course explores the object-oriented software development process including analysis, design, and programming. Emphasis is on the object-oriented paradigm.

SWE 6753

Computer Game Design & Development

Prerequisite: CS 5123

3-0-3

Topics include graphics, multimedia, visualization, animation, virtual reality simulation concepts, methods, and tools of game design and developments using the software engineering life cycle are emphasized. A team project on a game prototype is required.

SWE 6763

Software Metrics and Quality Management

Prerequisite: SWE 6623

3-0-3

This course covers the principles of software measurement such as scaling, validity, and reliability. The various software metrics on volume, effort, quality, and cost estimation are explored. The theory and principles of software verification and validation effectiveness, and reliability models are studied. The application of these measurements to software customer satisfaction and total quality management is explored.

SWE 6783

User Interaction Engineering

Prerequisites: CS 5183/3663 and SWE 6623

3-0-3

This course follows a complete software-engineering cycle to produce software objects (classes and/or components) that support users in effective, efficient, and enjoyable interactions with computers. Class exercises and a project incorporate concepts and methods including ethnographic and user analysis; cognitive ergonomics; usability metrics and criteria; software-engineering practices, conventions, standards, and documentation; device-user action mapping; person-system function allocation; quality management systems; conceptual proto-typing; embedded systems in support of ubiquitous computing; and function-behavior analysis.

SWE 6813

Component Based Software Development

Prerequisites: CS 5123 and CS 5183

3-0-3

This course covers the concepts, foundations, and architectures of component-based software development (CBSD) and its related technologies. Component-based tools and languages, approaches for implementation of CBSD, including designing, building, assembling, and deploying reusable COTS and in-house software components are discussed in depth. The current concrete realizations of component technologies will be explored. Students will do projects focused on the life cycle of software components.

SWE 6823**Embedded Systems Analysis and Design**

Prerequisite: SWE 6623

3-0-3

This project-oriented course focuses on using modern methods, techniques, and tools for specification and design of embedded systems. Topics include analytical methods, design/development methods, and notations. Performance evaluation based on modeling and simulation techniques is also covered.

SWE 6843**Embedded Systems Construction and Testing**

Prerequisite: CS 5243/3243

3-0-3

This project-oriented course focuses on the use of current software building technology, testing, reliability analysis, and benchmarking. Topics include component-based development (CBD), implementation technologies, and real-time operating systems (RTOS), with emphasis on the use of measurement tools, and domain libraries. The course also covers issues in hardware/software co-design.

SWE 6883**Formal Methods in Software Engineering**

Prerequisites: CS 5423 and SWE 6623

3-0-3

This course involves a study of formal methods applicable to software development with an emphasis on methods that support formal specification and verification. Such methods may include transformational techniques, logic-based formalisms, algebraic and model-based specifications, tools, etc.

SWE 6901-6903**Special Topics**

Prerequisite: As determined by the Instructor and Department Chair

1 to 3 hours

Special topics selected by the Department Chair. Offered on a demand basis. A student may repeat this course with special permission.

SWE 7803**Master's Thesis**

3-0-3

The thesis is designed for students wanting a research focus to their degree. The student works independently under the supervision of a designated SWE graduate faculty member on a thesis of substance in software engineering. The student will generate a formal written thesis and give a final defense of the thesis. This course may be repeated, but only 6 hours may be applied toward the degree. This course will be an alternative to SWE 7903 Software Engineering Capstone.

SWE 7903**Software Engineering Capstone**

Prerequisite: Satisfactory completion of the MSSWE core (SWE 6623, SWE 6633, SWE 6723, SWE 6743, SWE 6763, and SWE 6883)

3-0-3

This course is designed for students to give a professional focus to their degree. The students work in designated teams under the supervision of the course instructor (a CSE faculty member), on a project of practical significance in software engineering. Each of the teams will deliver a final working product, generate a substantial final report, and give a final presentation on the project.

Systems Engineering

SYE 6005

Introduction to Systems Engineering

3-0-3

The goal is to introduce the student to the essential principles, processes, and practices associated with the application of Systems Engineering. The applicability and use of Process Standards will be examined. Emphasis will focus on defining the problem to be solved, establishing the initial system architecture, understanding the role of system life-cycles, requirements development, and verification and validation of the realized system.

SYE 6010

Managing the Technical Effort Associated with System Creation

Prerequisite: SYE 6005

3-0-3

Technical management, its relationship with project and program management, elements of successful and less than successful technical management, and the elements that should be in place prior to commitment to system creation will be reviewed. The core of this course will examine three significant aspects of managing the technical effort: effective technical planning, assessment of technical progress, and control of technical activities.

SYE 6015

Systems Analysis and System Design

Prerequisite: SYE 6010

3-0-3

An examination of the current systems analysis and system design methods used to define system boundaries, constraints, and detailed technical requirements from acquirer needs and expectations. In addition, approaches to verification of the design solution, including verification methods against the specified requirements will be examined.

SYE 6020

System Architecture

Prerequisite: SYE 6015

3-0-3

Examination of concepts and techniques for architecting systems, the establishment of a bounded and integrated structure that provides a framework for system creation, work breakdown structures, cost analysis, and subcontractor control and interface will be reviewed. A structured approach to system architecture that proceeds from a topmost "system" to an aggregation and integration of systems created in lower level development layers, both internal and external to the developer as described in the standard ANSI/EIA-632 (Processes for Engineering a System) will be explored.

SYE 6025

Engineering Economic Analysis

3-0-3

Examination of the principles and methods used in evaluating costs associated with development and realization of engineering programs. This includes engineering cost estimating for determining engineering development and total life-cycle costs, application of cost-benefit analyses and cost-effectiveness analyses in the comparison

of alternative design approaches, and an examination of various engineering costing concepts such as “design-to-cost”, “should cost”, and “cost as an independent variable”.

SYE 6030

Verification Program Development & Management

3-0-3

This course will review: the establishment of criteria for planning tests, the determination of test methods, sub-system and system test requirements, and development of formal test plans to demonstrate compliance. Also examined will be methods of developing detailed test procedures for specific test conduct and acceptance test procedures for evaluating supplier products. The preparation of effective test results documentation in a fair and accurate manner will be analyzed.

SYE 6035

Modeling and Simulation

3-0-3

The use of models and simulations to validate or predict expected performance, behavior, and interaction of selected design elements in a controlled environment will be examined. This course will also present guidelines for selecting and using models and simulations on projects. Various modeling and simulation methods and tools will be examined and their value and applications probed for differing engineering development needs.

SYE 6040

Advanced Configuration Management

3-0-3

An examination of processes and methods to identify, control, audit, and track the evolution of system characteristics throughout the system life cycle will be conducted.

SYE 6045

Process Assessment and Improvement

3-0-3

This course provides an operational understanding of the differences between process standards and assessment standards where the latter provide a formal and structured means of examining a specific process or focus area to determine process capability or process maturity in an enterprise. Both EIA/IS-731-1, “Systems Engineering Capability Model”, and Capability Maturity Model® Integration (CMMISM) will be examined and the strengths and weaknesses reviewed with respect to consideration of use on projects.

SYE 6050

Reliability and Sustainability

3-0-3

Concepts for reliability and sustainability (maintainability) engineering and their integration into system development will be examined. In addition, techniques for ensuring the integration of these factors into core design decisions through specified requirements will be explored.

SYE 6055

System Development Workshop

3-0-3

This workshop will require students to attend a number of intensive 2-day, weekend workshops at SPSU’s Marietta campus. Students will be presented with an engineering problem statement constituting acquirer needs and expectations. Two

competitive teams will be established and multi-disciplinary teamwork will be required to achieve a solution to the presented problem statement. The two student teams will demonstrate effectiveness (validation) in a head-to-head operational competition judged by SPSU and industry-experienced representatives.

SYE 6060

Systems Engineering Workshop

3-0-3

This workshop will require students to attend a number of intensive 2-day, weekend workshops at SPSU's Marietta campus. The workshop engages the student with a variety of scenarios amenable to a systems engineering approach. Early activities will include systems synthesis and systems analysis following the problem definitions. Finer grain development then will be required utilizing applicable tools learned in preceding courses. Students will work in teams gaining experience in the dynamics and synergism that can be realized in systems efforts.