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## 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 to regularly check their SPSU 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).

The Civil, Computer, Electrical, Industrial, Mechanical, and Telecommunications Engineering Technology programs are accredited by the Technology Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, Telephone: 410-347-7700

The Bachelor of Architecture program is accredited by The National Architectural Accrediting Board, Inc. (NAAB). ([www.naab.org](http://www.naab.org))

The Bachelor of Science program in Construction Management is

21202-4012, Telephone: 410-347-7700; email  
accreditation@abet.org, website: <http://www.abet.org>.

## **Programs of Study**

Southern Polytechnic State University offers the following  
graduate programs of study:

### *Masters Degree Programs*

(See the Graduate Catalog)

Accounting (Master of Science)

Master of Business Administration (MBA)

Computer Science (Master of Science)

Construction Management (Master of Science)

Engineering Technology (Electrical Concentration) (Master  
of Science)

Information Design and Communication (Master of Science)

Information Technology (Master of Science)

Instructional Design and

Management)

Certificate in Engineering Sales (ETM)

Certificate in Land Surveying (Civil Engineering Technology)

Certificate in Logistics (Industrial Engineering Technology)

Certificate in Production Design (Industrial Engineering Technology)

Professional Certificate in Project Management:

Construction (Construction Management)

Professional Certificate in Programming (Computer Science)

encouraged to apply early in order to be assured of there being

## **General Information**

This section contains information that pertains to all graduate programs.

Admission Information – All applicants require:

- A completed application form
  - A \$20 non-refundable application fee
  - Three letters of reference
  - An official transcript from each previous college attended
- Tn4b**





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.



## 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.

## 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
- Certain Credit cards

Registration fees may be paid on the SPSU web site using credit cards. On-line transactions are fully encrypted for the safety of both the student and the university. SPSU does not accept VISA.

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.

Students are encouraged to register and pay fees as early as possible to avoid potential problems.

All payments returned to the University due to insufficient funds are subject to a 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 registration.

## 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 on the Registrar's web site.

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 rule 21-1-2.1 (J 144) of the Georgia Code.



The student affairs areas at Southern Polytechnic State University include:

-

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.

## **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.

## **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.

## **Career and Counseling Center**

-



Speakers of Other Languages). Tutoring is conducted in J210 from 9:00-2:00 Monday-Friday and 5:00-8:30 Monday-Thursday.

the FE exam is eligible to take the PE exam in Georgia or other

## 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.

## 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





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). In most cases 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 in

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.

## 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.

## 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 applying as a new student to the desired program and meet all admissions requirements.

### 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 their SPSU email daily for notices posted to them.*

## 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

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.

- (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.

## 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".

**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

## Grading System

## General Requirements

In all graduate programs, a minimum of a 3.0 G.P.A. is required. No grades below 'C' may be applied to a graduate program's requirements, and a maximum of 2 'C' grades at the level of 6000 or above may be applied to a graduate program's requirements.

A graduate 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 (3.00 for graduate students)
- 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 satisfied any program related requirements
- Has merited the recommendation for the degree by the faculty and the President of the university
- Has earned 75% of the total hours required for the degree in residence at SPSU

## 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 encouraged to petition early.

## 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.

## Maximum Credit Hours

Graduate students may register for a maximum of 12 hours each term. Academic department chairs may authorize additional hours under unusual circumstances. The maximum number of hours during summer term is 8.

## 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.**

## 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.

## 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.

## 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



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.

## **Transfer Credit, Policy for Acceptance of**

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

Transfer credit for graduate de

## **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.

## **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

**G** - - - - - **D** - - - - - **P** - - - - -

## Accounting

### Master of Science in Accounting Program Degree Requirements

MSA Degree Curriculum

Course	Course Title	Hrs.
ACCT 6003	Accounting Theory	3
ACCT 6007	Advanced Accounting Information Control Systems	3
ACCT 6006	Advanced Management Accounting	3
ACCT 6013	Emerging Auditing Technology	3
ACCT 6021	Professional Judgment	3
ACCT 6030	Taxation of Entities	3
MGNT 6059	Legal Environment	3
ACCT 6078	Fund Accounting	3
ACCT 6058	Financial Statement Analysis	3

An undergraduate degree in accounting with a minimum GPA of 2.75 on a scale of 4.0. Special consideration will be given to applicants with GPAs below 2.75 who have obtained the CPA or CMA designations and/or who have substantial relevant experience.

An undergraduate degree in any field with a minimum GPA of 2.75 on a scale of 4.0; at least 18 hours in general business courses; and completion of the following four courses (or equivalent) with a minimum passing grade of "C":

- Intermediate Accounting I
- Intermediate Accounting II
- Advanced Financial Accounting
- Cost Accounting/Management

Those with a CPA and/or 5 years of experience in the accounting field will receive special consideration.

Provisional admission will be given to students who do not have all of the four required transitional accounting courses listed under number 2 above. These four courses are offered as transition courses. Students who earn a B average in the transitional courses will be fully admitted into the program; otherwise a student will be placed on probation or dismissed from the program.

International Student Admission Requirements:

All of the above requirements

Official TOEFL scores (if English is not your native language) 213 computer based score or 79 Internet based score or IELTS score of 6.5.

International students are required to submit an International Student Affidavit of Financial Support

SPSU reserves the right to request a transcript evaluation from a credible evaluation agency. SPSU approved agencies:

- WES [www.wes.org](http://www.wes.org)
- Silny & Associates [www.jsilny.com](http://www.jsilny.com)
- Education Credential Evaluators [www.ece.org](http://www.ece.org)

These requirements are subject to change. For current requirements go to:

<http://www.spsu.edu/business/webx//curriculum/msaadd.htm>

#### Admission Procedure

An applicant may begin the MSA program in August, October, January, or March. Once an application packet is complete and submitted, an admission decision will be issued from the Graduate Admissions Office within 10 business days. All applications must be made online through the SPSU Graduate Admissions Office.

To apply, please go to:

[29](https://www.ap.0001app q1appcie.2958 TD -.0014.0493 0 TD .- 1 Tf 5 Tw [i9.3(mit(bx(r)-(n Cr(i)5.5cur[i9pt i)6eivei)6eih)-4.4(ould [(wm)-8.5(ns)3.3(</a></p>
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**Transition Certificate Courses**

The following transition courses cover the Common Professional Core and may be required for students who have not previously taken business courses. These courses may not be used to satisfy degree requirements.

MGNT 5000	Survey of Management	1.5
MGNT 5002	Survey of Financial Accounting	1.5
MGNT 5004	Survey of Managerial Accounting	1.5
MGNT 5006	Survey of Corporate Finance	1.5
MGNT 5008	Survey of Marketing	1.5
MGNT 5010	Survey of Business Law	1.5
MGNT 5012	Survey of Economics	1.5
MGNT 5014	Survey of Statistics	1.5



## Computer Science

Offering the Master of Science Degree

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What field of study has seen mo

Graduate Degree Programs

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
Computer Science Electives		15
<b>Total For The Program</b>		

## Construction Management

Offering:

The Bachelor of Science in Construction Management  
 The Masters of Science in Construction management  
 Professional Certificate in Project Management,  
 Professional Certificate in Land Development  
 Professional Certificate in Specialty Construction  
 On- Line Professional Certificate in Specialty Construction  
 Minor in Construction Management

The Master of Science program in Construction Management is designed to offer education in construction and project management to:

- 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
- Persons holding a baccalaureate or higher degree who are actively pursuing a construction industry career but lack education in construction and project management.

Program 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

### Admissions

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

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

In many cases, other degrees 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 in Construction Management 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)
- An official transcript 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.

Students who are accepted into the CM graduate major must attend the mandatory orientation.

### Admission Criteria

Applicants for admission to the Master of Science program in Construction Management 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

**Provisional Admission:** Applicants not meeting the minimum requirements will be considered for provisional admission based on an evaluation of

- Undergraduate GPA
- Professional industry experience
- GRE/GMAT scores

### Commitment to graduate studies

In the event that any aspect of an applicant's application does not meet the required minimum, probationary acceptance may be granted by the Construction Management Department's Graduate Committee.

*NOTE: Students who are admitted under provisional admission will be changed to regular admission by obtaining a GPA of 3.0 or better in the first three CM graduate courses.*

### Foundation Requirements:

In addition to the 36 required hours for the Masters degree, students may be required to demonstrate competency in the following:

- English communication skills
- Construction graphics
- Construction methods and techniques
- Structural systems
- Computer application skills in Construction Management
- Construction scheduling
- Construction estimating
- Construction accounting and finance

Courses (undergraduate or baccalaureate) 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 course-work
- Successfully completing competency testing developed by the Program

## Master of Science Program in Construction Management Degree Requirements

CM 6000	Information Methods	4
CM 6100	Construction Law: Contracts and Claims	4
CM 6200	Strategic Bidding and Estimating	4
CM 6600	Construction Risk Analysis and Control	4
Construction Degree Option (select one of the options listed below)		20
<b>Total For The Program</b>		<b>36</b>

### Elective Option

Select five construction elective courses (four credits each), up to two of which may be **approved** courses from another graduate department.

### Thesis Option

Select two 4-hour construction elective courses at the 6000 level

12 hours of Masters thesis work:

CM 7801

CM 7802

CM 7803

### Project Option

Select five 4-hour construction elective courses at the 6000 level

Up to 3 of these courses may be replaced by project courses, CM 7701-7703

A grade of "C" or better is required for each course applied to the degree program

In all graduate programs, a minimum of a 3.0 G.P.A. is required. No grades below 'C' may be applied to a graduate program's requirements, and a maximum of 2 'C' grades at the level of 6000 or above may be applied to a graduate program's requirements.

A cumulative 3.0 grade point average is required in all courses that apply to the degree.

## Engineering Technology--Electrical

Offering the Master of Science Degree

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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,
- An official transcript from each college the applicant has attended,
- A certificate of immunization,
- A 1 – 2 page Statement of Purpose describing your career and educational goals,
- 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 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 2.75 (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).



## Information Design and Communication

The MS program in Information Design and Communication has been developed in response to a growing need for professionals in the expanding field of information design, information architecture, content development, communications management, and visual 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 information design and communication, and
- To provide a useful credential for current information designers and 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 – an Internship Option, a Thesis Option, and an all Course Work Option.

## Master of Science Program in Information Design and Communication Degree Requirements

Admission Requirements for the Graduate Certificate in Technical Communication, the Master of Science in Information Design and Communication, and Advanced Certificates in Technical Communication:

Applicants admitted into the MS in Information Design and Communication degree program, the Technical Communication Certificate program, or the Advanced Certificate program must demonstrate strong written communication skills, a solid academic record, a good understanding of how their career goals fit within the field of technical communication, and a clear potential to contribute to the profession. All degree and certificate applicants must complete the following in order to be considered for admission:

- Completed application, including a \$20 non-refundable application fee.
- One official transcript from each college attended. These must be in sealed envelopes sent directly from the school.
- For any degree/transcript reflecting a GPA below 2.75, applicants must provide an explanation for the academic performance, as well as a statement demonstrating why they feel able to perform well at the graduate level.
- Immunization certification or immunization waiver. This documentation must be submitted to the school nurse, Julie Scala, [jscala@spsu.edu](mailto:jscala@spsu.edu), fax# 678-915-7367.
- Three academic or professional references on letterhead, placed in a sealed envelope, with the writer's signature placed over the seal.
- Professional resume showing current and past work experience.

In addition, students must submit the following materials depending on their program:

### Graduate Certificate in Technical Communication

- An application essay focusing on why the applicant has chosen an online learning environment for a graduate certificate in Technical Communication. The essay should also include a list of elective courses the applicant is most interested in taking and why these courses support the applicant's professional/academic goals. Essay should be at least 2 pages, double-spaced, and typed.
- A timed essay. Contact the Program Assistant, Donna McPherson, [tcom@spsu.edu](mailto:tcom@spsu.edu), to schedule a day and time to write the essay. The essay topic and instructions will be sent via email, on the day scheduled. The applicant is responsible for timing the essay and sending an electronic copy back to the Department within three hours of beginning the essay.
- A signed Memorandum of Understanding stipulating that you understand that successful completion of the certificate program is not a guarantee of admission to the master's program.

### The Master of Science in Information Design and Communication

- GRE scores (Test scores may be waived, if an applicant has 2 or more years of relevant work experience. An applicant may submit, to the ETCMA Graduate Review Committee, a portfolio of work, along with appropriate descriptions and narrative justification of the relevancy of the work experience to the candidate's suitability for graduate degree study. ie.: explanation of audience, purpose of each of the samples, and the applicant's role in creating them.)
- An application essay focusing on why the applicant has chosen an online/hybrid learning environment for an MS degree in Information Design and Communication. The essay should also include a list of elective courses the applicant is most interested in taking and why these courses support the applicant's professional/academic goals. This essay should be at least 2 pages, double-spaced, and typed.
- A timed essay. Contact the Program Assistant, Donna McPherson, [tcom@spsu.edu](mailto:tcom@spsu.edu), to schedule a day and time to write the essay. The essay topic and instructions will be sent via email, on the day scheduled. The applicant is responsible for timing the essay and sending an electronic copy back to the Department within three hours of beginning the essay.

### Advanced Certificates in Technical Communication Admission requirements:

- A graduate certificate or master's degree in technical communication or related field from SPSU or another university.
- A portfolio reflective of your work with a description of the audience, purpose, and your role in creating each product.
- An application essay focusing on career goals and explaining how the Advanced Certificate program will help the applicant meet these goals.

Note: SPSU Certificate in Technical Communication and/or MS Information Design and Communication graduates need only to submit a portfolio reflective of your work with a description of

## Graduate Degree Programs

the audience, purpose, and your role in creating each product, along with an application, in order to apply for one of the advanced certificates.

IDC 6001	Professional Practices of Communication	3
IDC 6002	Information Design	3
IDC 6030	Foundations of Graphics	3
IDC Electives	Select 7 elective courses with an IDC prefix	21
IDC Option	(Select one of the options listed below)	6
<b>Total For The Program</b>		<b>36</b>

### **Internship Option**

Internship (IDC 7601-7603)

While taking the internship, stud



**Graduate Certificates in Technical Communication**

The Graduate Certificates in Technical Communication are online programs that prepare students for a variety of positions in technical communication. They also help current technical communicators and information developers update and expand their skills and knowledge.

## **Information Technology**

Offering the Master of Science Degree

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The Master of Science in Information Technology (MSIT) program

## Master of Science Program in Information Technology Degree Requirements

<b>IT Core</b>	<b>All five courses are required</b>	<b>15</b>
IT 6203	IT Design Studio	3
IT 6413	IT Service Delivery	3
IT 6423	IT System Acquisition and Configuration	3
IT 6823	Information Security Concepts and Administration	3
IT 7883	IT Strategy, Policy and Governance	3

<b>IT Required Elective</b>	<b>Select 1 course from the list below</b>	<b>3</b>
IT 6723	Managing Operating & Network Systems	3
IT 6733	Database Administration	3
IT 6753	Advanced Web Development	3
IT 6873	Information Security Seminar	3

**Choose 6 of the following in Addition to the Required Electives. (A Maximum of 3 Approved Electives might be Outside of IT)**

		<b>18</b>
IT 6403	Windows Application Development	3
IT 6473	Multimedia Applications	3
IT 6553	Business Continuity Risk Assessment	3
IT 6563	Business Continuity Planning	3
IT 6573	Business Continuity Implementation	3
IT 6643	Issues in Information Management	3
IT 6663	Data Center Management	3
IT 6683	Management of Information Technology	3
IT 6723	Managing Operating and Network Systems	3
IT 6733	Database Administration	3
IT 6753	Advanced Web Concepts and Applications	3
IT 6763	Electronic Commerce	3
IT 6833	Wireless Security	3
IT 6843	Ethical Hacking: Network Security and Penetration Testing	3
IT 6853	Computer Forensics	3
IT 6863	Database Security and Auditing	3
IT 6873	Information Security Seminar	3
IT 6903	Special Topics in Information Technology	3
IT 7803	Master's Thesis (Term 1)	3
IT 7803	Master's Thesis (Term 2)	3

**Total For The Program 36**

### Transition Courses

The following transition courses might be required if the Undergraduate degree is outside of IT or a closely related discipline to IT, or for provisionally admitted students. Specific assignment of the transition courses is completed during

orientation and advisement. Students with no background in IT or computing might benefit from self-study prior to starting this certificate using a reading list available from the IT Department. These courses may not be used to satisfy degree requirements.

IT 5101	Intro. to Database Systems	1.5
IT 5102	Intro. to Security	1.5
IT 5201	Intro. to Platforms	1.5
IT 5202	Intro. to Networks	1.5
IT 5301	Intro. to Programming	1.5
IT 5302	Intro. to Web Development	1.5

## Graduate Certificate in Information Technology Fundamentals

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

Students with no background in IT or computing might benefit from self-study prior to starting this certificate using a reading list available from the IT Department. These courses may not be used to satisfy degree requirements.

### Required Courses (9 Hours):

IT 5101	Intro to Database Systems	1.5
IT 5102	Intro. to Security	1.5
IT 5201	Intro. to Platforms	1.5
IT 5202	Intro. to Networks	1.5
IT 5301	Intro. to Programming	1.5
IT 5302	Intro. to Web Development	1.5

## Graduate Certificate in Information Technology

The Graduate Certificate in Information Technology prepares individuals with a bachelor's degree in a field other than information technology. (36)TJ

## **Graduate Certificate in Information Security and Assurance**

The Graduate Certificate in Information Security and Assurance (ISA) Program is designed for IT professionals who have a bachelor's degree and have taken the Graduate Transition Certificate in Information Technology (or the equivalent through other course work) to advance their knowledge in the field of information security and assurance.

Students graduating with this program will have a strong background in fundamental principles and applications of computer security and information assurance, as well as hands-on experience with security tools commonly used in industry.

Candidates must complete the three core courses in Information Security and Assurance and one elective course for a total of 12 credits.

### **Required Courses (9 Hours):**

IT 6823	Information Security Concepts and Administration	3
IT 6843	Ethical Hacking: Network Security	



Graduate Degree Programs

Total Required Hours	12
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In addition, students must pass a Green Belt qualifying exam at the end of their course work to earn the Graduate Green Belt Certificate.

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



Submission of the GRE score is strongly recommended to international applicants and should be considered by all applicants to strengthen the application packet. The applicant may be required to submit the GRE score after an initial review, which could delay the decision process.

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

## Master of Science Program in Software Engineering Degree Requirements

SWE 6633	Software Project Planning and Management	3
SWE 6613	Requirements Engineering	3
SWE 6733	Software Engineering Process	3
SWE 6653	Software Architecture	3
SWE 6743	Object-Oriented Analysis and Design	3
SWE 6673	Software Quality Engineering and Assurance	3
SWE 6883	Formal Methods in Software Engineering	3
	Select one of the options listed below:	15
	<b>Total For The Program</b>	<b>36</b>

### Project Option (15 hours)

12 hours of electives: Choose 6000-level Software Engineering, Computer Science, Information Technology, or System Engineering courses (at least 2 SWE and at most 2 CS, IT, or SE) **and**

SWE 7903 Software Engineering Capstone

Electives	12 hours of 6000-level SWE, CS, IT or SE courses	12
SWE 7903	Software Engineering Capstone (Project)	3

### Thesis Option

9 hours of electives (Choose 600-Level SWE, CS, IT, or SE courses (at least 2 SWE)) and

SWE 7803 Master's Thesis

Electives	9 hours of 6000-level SWE, CS, IT or SE courses	9
SWE 7803		



## Systems Engineering

### Offering the Master of Science Degree

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The Systems Engineering program is a multidisciplinary program that blends engineering, systems thinking, and management topics. The increasing complexity of systems, the growth of global competitiveness, the enhanced focus on cost and profitability, and ever more challenging customer expectations have led a number of premiere organizations in the defense and commercial sectors to assume the role of system integrators. These organizations are increasingly adopting an evolving business model that emphasizes the selling of functionality, solutions, or capabilities, instead of focusing on providing systems, system elements, and products.

The System Engineering Program is housed in the Division of Engineering. The program offers a Master of Science degree with a major in Systems Engineering and a Graduate Certificate in Systems Engineering. The curriculum emphasizes the development of large-scale, complex, and multifunctional systems in a number of domains. Core courses in the SyE Program have a strong case study and project orientation to facilitate understanding of the concepts discussed.

All graduate Systems Engineering courses are offered online via several technologies that allow a high degree of interaction with the faculty and fit into today's professional's busy schedule.

### Admission Requirements

Applicants 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 for the semester in which the applicant plans to enroll:

- An application for graduate admission to SPSU. You can download a printable application and mail it in along with the \$20 non-refundable application fee. Or, you can set up an online account and apply over the internet,
- Official transcript to be sent from each college or university attended,
- Certificate of Immunization. Download this form and sign the waiver at the bottom for distance only students.
- An official copy of scores from the "General Test" of the Graduate Record Examination (GRE), or a request for a GRE waiver (see Admissions Criteria below),
- At least three (3) recommendation forms completed by former or current supervisors, professors, or professional colleagues,
- A 1 – 2 page Statement of Purpose describing your career and educational goals, and
- A current resume.

International students who do not possess a baccalaureate degree from a college in the United States must submit (1) an official English-translated transcript of college-level education, (2) the TOEFL scores, and (3) an affidavit indicating financial security.

Applicants to a Graduate Certif

**For more information**

For further information, contact the SyE Program Director, Dr. Renee Butler at 678-915-5414.

**Master of Science in Systems Engineering Degree Requirements**

The program consists of five core courses and a four course concentration. Additionally, students will either complete a thesis (6 thesis hours) and one Systems Engineering Elective or a project (SYE 6055) and two Systems Engineering Electives.

*Thesis Option*

SYE 6005	Introduction to Systems Engineering	3
SYE 6010 or	Managing the Technical Effort or	3
MGNT 6050	Project Management	
SYE 6020	System Architecture	3
SYE 6025	Economic Decision Analysis	3
QA 6610	Statistics	3
SYE 7803	Thesis Hours	6
	Elective (1 course)	3
	Concentration (4 courses)	12

**Program Total 36**

<i>Project Option</i>	SYE 60053	<del>Systems Engineering</del>	3
	SYE 6010 or	Managing the Technical Effort or	3

## Accounting Course Descriptions

### **ACCT 6000 Managerial Accounting**

*Prerequisites: MGNT 5002 and MGNT 5004, or undergraduate financial accounting and managerial accounting courses*

3-0-3

This course deals with the procedures and concepts of computing and allocating costs for reporting, pricing, planning and control, and internal decisions 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.

### **ACCT 6000 Managerial Accounting**

*Prerequisites: MGNT 5002 and MGNT 5004, or undergraduate financial accounting and managerial accounting courses*

3-0-3

This course deals with the procedures and concepts of computing and allocating costs for reporting, pricing, planning and control, and internal decisions 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.

### **ACCT 6003 Accounting Theory**

*Prerequisite: Transitional Courses, if required*

3-0-3

This course focuses on the evolution of the international dimensions of accounting and the national differences in accounting thought, practice, problems, and issues from other accounting systems. There is also a survey of international standards.

#### **ACCT 6075 Tax Research and Planning**

*Prerequisite: Transitional Courses, if required*

3-0-3

This course uses student's tax research skills to discover new knowledge on advanced tax topics such as passive activity losses, alternative minimum taxes, international taxation, and multi-state taxation. The course also includes gift and estate tax compliance and tax planning as well as deferred compensation.

#### **ACCT 6078 Fund Auditing**

*Prerequisite: Transitional Courses, if required*

3-0-3

This is an in-depth exposition of the current standards and specialized accounting practices of state and local government, school systems, universities and hospitals, by use of case studies.

## **Business Administration**

#### **MGNT 6001 Management Communications**

3-0-3

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

#### **MGNT 6002 Corporate Finance**

*Prerequisite: MGNT 5006 or undergraduate accounting and finance courses*

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.

#### **MGNT 6004 Service and Production Operations Management**

*Prerequisite: MGNT 5000 and MGNT 5014 or an undergraduate course in management principles and an undergraduate course in statistics*

3-0-3

A survey of service and production operations 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.

#### **MGNT 6005 Managerial Economics**

*Prerequisite: MGNT 5012 and MGNT 5014 or an undergraduate course in principles of economics and an undergraduate course in statistics*

3-0-3

An analysis of economics that applies microeconomic techniques to business decisions. In particular, it connects economic theory

and economics in business practice. Course contents include risk analysis, production analysis, capital budgeting, decision theory, and financial economics.

#### **MGNT 6008 Marketing Management**

*Prerequisite: MGNT 5008 or an undergraduate course in marketing principles*

3-0-3

This course will present the logic and common sense associated with sound marketing management principles under changing global conditions. The student will be able to apply these principles, not only to specific managerial environments, but also to understanding events occurring on a daily basis in today's dynamic global marketplace. Through cases and projects students examine strategic and tactical planning and decision making for marketing situations.

#### **MGNT 6010 Management of Information Technology**

3-0-3

A comprehensive study of the concepts and issues involved in managing information technology within organizations. Includes focus on information technologies, acquiring and applying information technologies and systems, and their utilization in managing and decision-making activities.

#### **MGNT 6015 Technology and Innovation Management**

*Prerequisite: MGNT 5000 or an undergraduate course in management principles*

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 complete a project.

#### **MGNT 6022 Sales Management**

*Prerequisite: MGNT 5008 or an undergraduate course in marketing principles*

3-0-3

Sales management will highlight the differences experienced by a sales manager from those of a manager geographically located with his or her subordinates. The "arms length" supervision requirements of sales management will better equip the student to manage and motivate any group in a business environment. Emphasis is also placed on hiring skills needed to maintain and expand a sales force.

#### **MGNT 6024 Business-to-Business Marketing**

*Prerequisite: MGNT 5008 or an undergraduate course in marketing principles*

3-0-3

This course focuses on the buying patterns practiced in the industrial marketplace. The course builds a foundation for the student to better understand the underlying conditions that govern an industrial marketing transaction beyond the immediate product or service 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 to the products with which they are connected.

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 Issues in Human Resource Management**

*Prerequisite: MGNT 5000 or an undergraduate course in management principles*

3-0-3

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

**MGNT 6090 Strategic Management CAPSTONE COURSE**

*Prerequisite: Students should take this course within the last two semesters of the degree program, requires instructor approval.*

3-0-3

Exposes the student to the process of strategic decision-making. Emphasis is placed on the use of SWOT 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.

## MBA Elective Courses

**MGNT 6091-6903 Special Topics**

3-0-3

**MGNT 7501-7503 Independent Research**

3-0-3

*Prerequisite: At least half of the MBA degree completed, requires professor approval*

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

*Note: MBA students may take selected electives in other graduate programs subject to prerequisite requirements and faculty approval.*

## Computer Science Graduate Courses

**CS 5123 Advanced Programming and Data Structures**

*Prerequisite: CSE 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 (co-requisite) or CSE 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 (co-requisite) 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 5013 Computing Fundamentals**

*Prerequisite: CSE 1301 or equivalent*

3-0-3

Transition Course: This course is designed to examine the principles and concepts of computer architecture, operating systems, and database systems. Topics from the principles of computer organization and architecture include fundamentals of computer design, instruction set principles, pipelines, performance, caches and virtual memory. Topics from the principles of operating systems include OS structures and design issues, process model and management, memory management, peripheral device management, and file systems. Topics from the principles of database systems include DB structures and design issues, entity relationship models, relational databases, normalization, and an SQL-based database system such as Oracle.

**CS 5223 Computer Architecture**

*Prerequisite: CSE 1301 or equivalent course*

3-0-3

Transition Course: Topics from the principles of computer organization and architecture include number systems, digital a



The application of various modeling techniques to the



A review of all normal bid-preparation activities that should take

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.

**CM 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.

**CM 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.

**CM 7701-7704 Masters Project**

*Prerequisites: CM 6000 and consent of the department head*

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.

**CM 7801-7804 Masters Thesis**

*Prerequisites: CM 6000, completion of 28 hours of graduate courses*

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

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**

*Prerequisites: Digital Theory and Application, C and Assembly Language equivalent to ECET 2210, ECET 4710*

3-3-4

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 & 80386ex 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

**ECET 6404 Switching Power Supplies**

3-3-4

This course presents the theory and practical skills necessary to design switching power supplies, focusing on DC-to-DC converters. Topics addressed include switching functions, converter topologies, magnetics design and feedback control. Students will design, build and test several power supplies.

**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.

**Information Design and Communication Graduate Courses**

**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 6004 Research Methods**

*Prerequisite or Co-Requisites: IDC 6001, IDC 6030*

3-0-3

Introduction to how to make practical use of research to inform information design and communication decisions. Students learn to create and to be critical consumers of research reports by getting hands-on exposure to quantitative and qualitative methods, including interviewing, survey design, and analysis. The course teaches how to use standard software products such as MS Word and MS Excel to perform basic qualitative and quantitative analyses. Although students learn to use standard software products, the course also teaches how to use standard software products.

**IDC 6045 Foundations of Multimedia**

*Prerequisite: IDC 6001 Prof. Practices of Comm 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

**IDC-6155 Online Instructional Development**

3-0-3

Course explores online instructional development and deployment in higher education and corporate arenas, addressing issues of pedagogy, current and emerging technologies, marketing, design, and evaluation. Students will create, deploy and evaluate online instructional modules in a variety of online technologies.

Prerequisite IDC 6140 Instructional Systems Design.

**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

**IT 5302 Introduction to Web Development**

*Prerequisite: None.*





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

**QA 6660 Six Sigma Black Belt Concepts**



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 Design and Construction**

*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, SWE 6623, and SWE 6613 recommended*

3-0-3

The course is concerned with formal representation of the specification of software. Formal mechanisms for specifying, validating, and verifying software systems will be introduced to check for completeness and correctness as well as to discover ambiguities in the specifications. Both Propositional and Predicate Calculus will be reviewed and utilized to represent and reason about software specifications. Proof techniques and formal specification languages Z and the Object Constraint Language (OCL) will be explored.

**SWE 6863 Software Engineering Ethics and Legal Issues**

*Prerequisite: Co-requisite CS 5123*

3-0-3

This course covers ethical and legal issues related to software development. Professional ethics and responsibilities of software engineers are discussed in detail. Topics include computing and civil liberties, encryption, intellectual property and licensing, software patents and copyrights, professional codes of ethics and professional licensing, software reliability, liabilities, and hacking. Software engineering/computing case studies will be used.

**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 7903 Software Engineering Capstone**

*Prerequisite: Satisfactory completion of the MSSWE core*

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.

**SWE 7803 Masters 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 6901-6903 Independent Study**

*Prerequisites: Approval of course director*

3-0-3

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

## Systems Engineering Graduate Courses

**SYE 5000 Quantitative Foundations for Systems Engineering**

3-0-3

This course provides the quantitative foundations necessary for core courses in the Systems Engineering and Certificate programs. Topics include calculus, vectors and matrices, linear systems, and probability theory. Engineering applications of the topics will be emphasized. Cannot be taken for credit for the MS SyE.

**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**

3-0-3

Integrated framework for project organization, planning and control focusing on project management processes for large, complex programs to ensure cost-effective and quality outcomes for investments.

**SYE 6015 Systems Analysis and Design**

*Prerequisite: SYE 6005*

3-0-3

Methods used to analyze and design complex systems that meet the needs of multiple stakeholders over the system life cycle. Apply systems engineering design and analysis principles to the virtual design of a contemporary complex system.

**SYE 6020 System Architecture**

*Prerequisite: SYE 6005 and SYE 6010 or MGNT 6050*

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**

*Prerequisite: SYE 5000 or equivalent*

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 6035 Modeling and Simulation**

*Prerequisite: QA 6610*

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 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

statements to be used by decision makers internally and externally.

**ACCT 5002 Survey of Financial Accounting**

1.5-0-1.5

This course is a study of the application of accounting principles and the accounting cycle used in business of corporations to record historical economic transactions reported in financial statements to be used by decision makers internally and externally.

**ACCT 5004 Survey of Managerial Accounting**

*Prerequisite: MGNT 5002 or an undergraduate financial accounting course*

1.5-0-1.5

This course is a study of the application of accounting principles to specialized problems in business of corporations, special reports, and analyses of accounting information, fundamentals of management accounting, information and analysis for planning and controlling, decision analyses, cost management, and continuous improvement.

**ACCT 5004 Survey of Managerial Accounting**

*Prerequisite: MGNT 5002 or an undergraduate financial accounting course*

1.5-0-1.5

This course is a study of the application of accounting principles to specialized problems in business of corporations, special reports, and analyses of accounting information, fundamentals of management accounting, information and analysis for planning and controlling, decision analyses, cost management, and continuous improvement.

**ACCT 5007 Intermediate Accounting I**

*Prerequisites: MGNT 5002 and MGNT 5004, or undergraduate financial accounting and managerial accounting courses*

3-0-3

*This course covers a review of the accounting process, detailed analysis of financial statements, time value of money concepts, and current and operational assets.*

**ACCT 5009 Intermediate Accounting II**

*Prerequisites: ACCT 5007*

3-0-3

*This course covers a review of the financial statements with respect to investments, current liabilities and contingencies, bonds and other long term debt, leases and tax.*

**MGNT 5000 Survey of Management**

1.5-0-1.5

Overview of management includes managing people and production, planning and control, strategy, global business, ethics, and management careers.

**MGNT 5006 Survey of Finance**

1.5-0-1.5

This course provides an introd

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