
USC ELECTRICAL ENGINEERING PROGRAM OBJECTIVES

The electrical engineering program objectives at the University of Southern California are designed to promote technical competence, professional development, and citizenship in the global community.

1. Technical Competence

- A. Graduates will have the proficiency in mathematics, science, and engineering necessary to apply these disciplines to the solution of problems encountered in modern electrical engineering practice.
- B. Graduates will have the ability to model, analyze, design, and experimentally evaluate components or systems that achieve desired technical specifications subject to the reality of economic constraints.

2. Professional Development

- C. Graduates will have the professional skills necessary to compete effectively in a world of rapid technological change as well as to assume leadership roles within industrial, entrepreneurial, academic, or governmental environments in the broad context of electrical engineering.
- D. Graduates who have chosen an appropriate plan of study will be capable of professional redirection into such diverse fields as medicine, business, law, computer science, multimedia, and music through graduate-level studies and the process of life-long learning.

3. Citizenship in the Global Community

- E. Graduates will have the capabilities and communication skills necessary to function effectively either as individuals or as members of multidisciplinary teams in a diverse global economy.
- F. Graduates will have an understanding of the importance of high ethical and professional standards as well as the significance of engineering decisions and solutions in a global, environmental, and societal context.

ELECTRICAL ENGINEERING UNDERGRADUATE HANDBOOK

The department of Electrical Engineering has created this undergraduate handbook to assist students in planning their course schedules and academic career at USC. The degree requirements are described in this handbook to help you to stay on track and graduate on time. Please remember that although the department makes every effort to assist you with your course planning and degree requirements, it is the ultimate responsibility of the student for completing all department, major, degree, and university requirements.

STUDENT RESPONSIBILITY

Your responsibilities as a student can be described as follows:

- Learn, know, and adhere to all appropriate academic policies and procedures as stated in your University Catalogue.
- Learn about the specific requirements for your major, and minor, if applicable.
- Learn and know about your general education requirements.
- Seek assistance from a staff and/or faculty advisor as needed. It is recommended that you seek some sort of advisement every semester.
- Meet all graduation requirements for your degree objective.

To graduate with a Bachelor of Science in Electrical Engineering, students must earn at least 131 units of course work. A description of the distributions of units is described in the following pages. The EE major allows for a great deal of freedom of choice in electives, and making good choices about these courses can help you align yourself for your future goals.

A final word on how to use this handbook... This handbook concentrates on items pertinent to the Electrical Engineering department. You may have unanswered questions regarding requirements and how you might be able to fulfill them. So, you, as the student and owner of your education, are strongly urged to consult the student services advisor in our department, the student services personnel in Engineering Student Affairs, the Undergraduate Engineering Bulletin, and/or the University catalogue for further information. Please note, that whenever there is a contradiction in this handbook, or from other information sources, the policies outlined in the University catalogue will prevail. Finally, if you have any ideas about other items that are needed for this book, please contact the department with your welcomed suggestions.

Best of luck in your academic career!

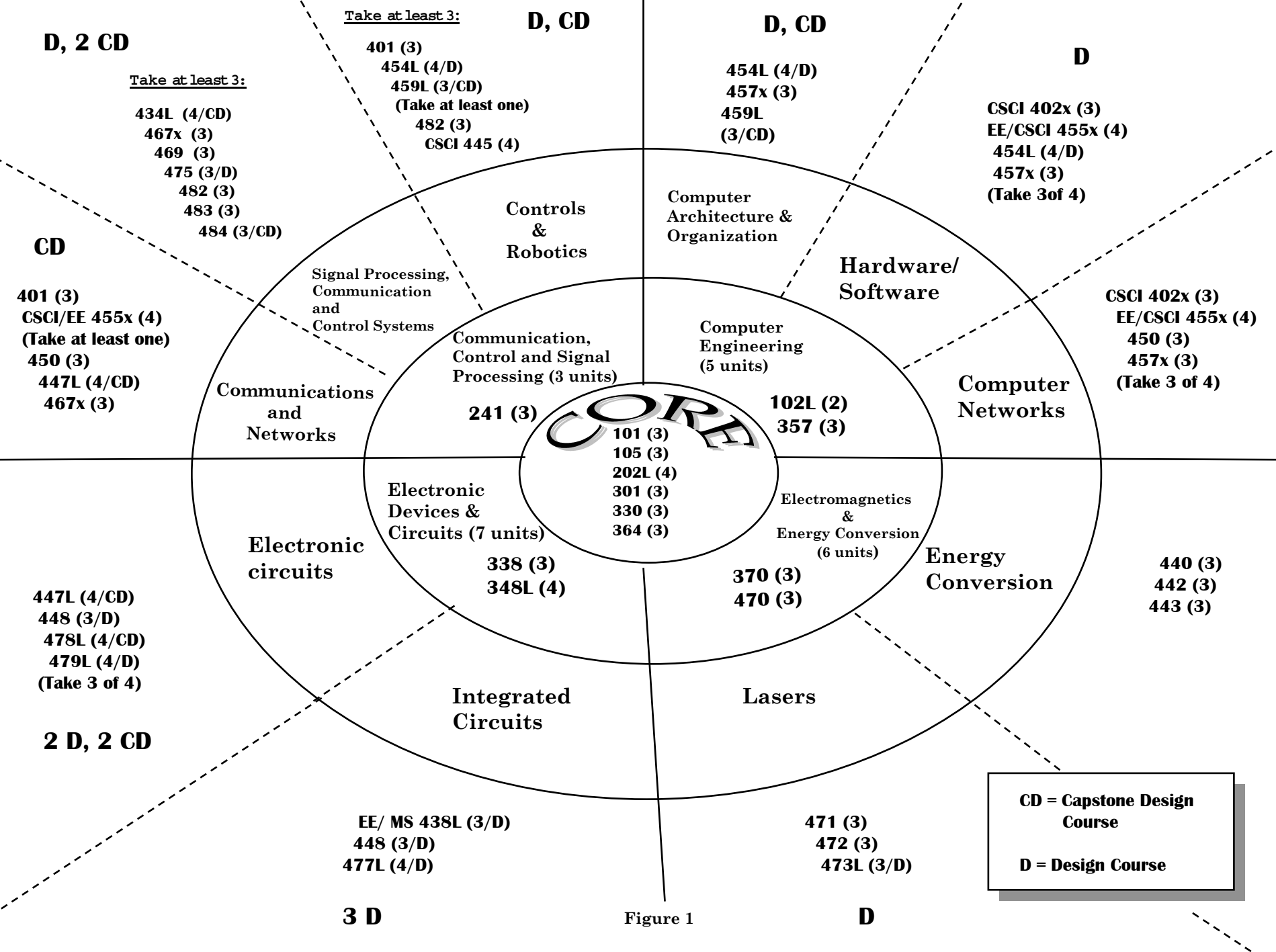


Figure 1

DEGREE REQUIREMENTS

There are two main types of requirements that must be fulfilled to complete your BSEE degree. These are: (1) EE major requirements-including core and elective courses, and (2) School of Engineering requirements and University requirements- including General Education, GPA, and unit requirements. These requirements are discussed in the following sections beginning with the specific EE major requirements.

I. EE MAJOR REQUIREMENTS

A good overview of the requirements and options of the Electrical Engineering portion of the curriculum can be obtained from the diagram shown in Fig. 1. In this diagram, the central region contains the core courses, which are required of all EE students. The ring surrounding the central area of the diagram is divided into four sectors which are labeled with the four topical areas into which modern electrical engineering can be divided: Communication, Control, and Signal Processing; Computer Engineering; Electromagnetics and Energy Conversion; and Electronic Devices and Circuits.

Under each of the four topical areas are listed “entry level courses” which are prerequisites to most of that area’s more advanced courses. Completion of the entry-level courses in any one of the four topical areas (as well as the core courses) provides the background necessary to enter any of the more advanced-level courses in that area. Students are required to take all of the entry-level courses in three of the four areas. The more advanced courses are listed in the outermost ring of the diagram, and are grouped into “areas of specialization,” each of which represents a cohesive group of related courses allowing specialization in that particular topic. Students are required to complete at least one area of specialization.

A. CORE COURSES

These courses are required of all EE majors. The core courses provide the student with a solid foundation in the basic fundamentals of electrical engineering. The core EE courses are as follows:

- EE 101 Introduction to Digital Logic (3 units)
- EE 105 Introduction to Electrical Engineering (3 units)
- EE 202L Linear Circuits (4 units)
- EE 301 Introduction to Linear Systems (3 units)
- EE 330 Electromagnetics I (3 units)
- EE 364 Introduction to Probability and Statistics for Electrical Engineering (3 units)

B. ENGINEERING ELECTIVES

All elective courses are to be 200-level or above. You are required to complete all upper division EE electives with a GPA of 2.0 or better. Engineering electives are to be chosen from the courses listed under Entry-Level Electives, Areas of Specialization, Non-EE Engineering Science Elective, and EE Design Electives.

a. Entry-Level Electives

EE majors are required to complete the entry-level courses in 3 of the 4 topical areas. The completion of the entry-level courses in three areas helps to ensure that students has adequate breadth in electrical engineering and assist the student in selecting an area of specialization. The entry level electives in the four topical areas are listed below.

1. *Communication, Control, and Signal Processing*

- EE 241 Applied Linear Algebra for Engineering (3 units)
- 2. *Computer Engineering*
 - EE 102L Introduction to Digital Circuits (2 units)
 - EE 357 Basic Organization of Computer Systems (3 units)
- 3. *Electromagnetics and Energy Conversion*
 - EE 370 Electromechanics (3 units)
 - EE 470 Electromagnetics II (3 units)
- 4. *Electronic Devices and Circuits*
 - EE 338 Physical Electronics (3 units)
 - EE 348L Electronic Circuits (4 units)

b. Areas of Specialization

The areas of specialization represent a cohesive group of related courses in a specialized topic. Students are required to complete at least one area of specialization, although more than one is allowed.

Communication, Control & Signal Processing

(Take at least three courses in one Area of Specialization)

Communications and Networks

- EE 401 Transform Theory for Engineers (3 units)
- EE/CS455x Introductions to Programming Systems Design (4 units)
(take at least one):
- EE450 Introduction to Computer Networks (3 units)
- EE 447L Mixed Signal Electronic Circuits (4 units/CD)
- EE 467x Introduction to Communication Systems (3 units)

Signal Processing, Communication and Control Systems

- EE 434L Digital Signal Processing Design Laboratory (4 units/CD)
- EE 467x Introduction to Communication Systems (3 units)
- EE 469 Introduction to Digital Media Engineering (3 units)
- EE 475 Wireless Communication Technology (3 units)
- EE 482 Linear Control Systems (3 units)
- EE 483 Introduction to Digital Signal Processing (3 units/CD)
- EE 484 Communication System Design (3 units/CD)

Controls and Robotics

- EE 401 Transform Theory for Engineering (3 units)
- EE 454L Introduction to Systems Design Using Microprocessors (4 units/D)
- EE 459L Senior Design Project (3 units/CD)
(take at least one):
- EE 482 Linear Control Systems (3 units)
- EE/CS445 Introduction to Robotics (4 units)

Computer Engineering

Computer Architecture and Organization

- EE 454L Introduction to Systems Design Using Microprocessors (4 units/D)
- EE 457Lx Computer Systems Organization (3 units)
- EE 459L Senior Design Project (3 units/CD)

Hardware/Software (take 3 of 4)

- CS 402x Operating Systems (3 units)

EE/CS455x Introduction to Programming Systems Design (4 units)
EE 454L Introduction to Systems Design Using Microprocessors (4 units/D)
EE 457Lx Computer Systems Organization (3 units)

Computer Networks (take 3 of 4)

CS 402x Operating Systems (3 units)
EE/CS455x Introduction to Programming Systems Design (4 units)
EE 450 Introduction to Computer Networks (3 units)
EE 457Lx Computer Systems Organization (3 units)

Electromagnetics & Energy Conversion

Energy Conversion

EE 440 Rotating Electrical Machinery (3 units)
EE 442 Direct Energy Conversion (3 units)
EE 443 Introduction to Power Systems (3 units)

Lasers

EE 471 Applied Quantum Mechanics for Engineers (3 units)
EE 472 Introduction to Lasers and Laser Systems (3 units)
EE 473L Lasers and Optics Laboratory (3 units/D)

Electronic Devices & Circuits

Electronic Circuits (take 3 of 4)

EE 447L Mixed Signal Electronic Circuits (4 units/CD)
EE 448 Electronic Circuits II (3 units/D)
EE 478L Digital and Electronic Circuit Design (4 units/CD)
EE 479L Introduction to Integrated Circuit Design (4 units/D)

Integrated Circuits

EE 438L Processing for Microelectronics (3 units/D)
EE 448 Electronic Circuits II (3 units/D)
EE 477L MOS VLSI Circuit Design (4 units/D)

(D)- Design Elective

(CD)- Capstone Design Elective

c. EE Design Electives

At least three courses must be taken from the following list of design courses. One of these courses must be a capstone design course. Capstone design courses are noted by an asterisk.

EE 402 Design of Analog and Digital Filters (3 units)
EE434L* Digital Signal Processing Design Laboratory (4 units)
EE 438L Processing for Microelectronics (3 units)
EE 447L* Mixed Signal Electronic Circuits (4 units)
EE 448 Electronics Circuits (3 units)
EE454L Introduction to Systems Design Using Microprocessors (4 units)
EE 459L* Senior Design Project (3 units)
EE 473L Lasers and Optics Laboratory (3 units)
EE 475 Wireless Communication Technology (3 units)
EE 477L MOS VLSI Circuit Design (4 units)
EE 478L* Digital and Electronic Circuit Design (4 units)
EE 479L Introduction to Integrated Circuit Design (4 units)

EE 484* Communication System Design (3 units)

d. Non-EE Engineering Science Elective

At least one elective must be a non-EE engineering science elective, either from the list below or others by special advisor approval: *No courses from CSCI or ITP can be considered for special approval.*

CE 205 Statics (2 units)

CE 225 Mechanics of Deformable Bodies (3 units)

CE 309 Fluid Mechanics (3 units)

CE 325 Dynamics (3 units)

CHE 472 Polymer Science and Engineering (3 units)

ME 201 Statics (3 units)

ME 310 Engineering Thermodynamics I (3 units)

ME 452 Intermediate Kinematics (3 units)

ME 453 Engineering Dynamics (3 units)

II. SCHOOL OF ENGINEERING & UNIVERSITY REQUIREMENTS

All Engineering majors need to complete foundational courses in Math, Physics, Chemistry, Computers, and Economics. For Electrical Engineering majors, these courses are described below.

A. MATHEMATICS (REQUIREMENT)

The following mathematics courses are required:

Math 125 (4) Calculus I

Math 126 (4) Calculus II

Math 226 (4) Calculus III

Math 245 (4) Mathematics of Physics and Engineering I

Math 445 (4) Mathematics of Physics and Engineering II

B. PHYSICS (REQUIREMENT)

The following physics courses are required:

PHYS 151L (4) Mechanics and Thermodynamics

PHYS 152L (4) Electricity and Magnetism

PHYS 153L (4) Optics and Modern Physics

*You may also take PHYS 161,162, and 163 honors Physics to fulfill this requirement.

C. ENGINEERING ECONOMY (REQUIREMENT)

Choose one of the following:

ISE 460 (3) Engineering Economy or

BUAD 301 (3) Technical Entrepreneurship

D. COMPUTERS (REQUIREMENT)

An introductory computer programming course is required.

CSCI 101L (3) Fundamentals of Computer Programming

E. CHEMISTRY or MATERIALS SCIENCE (REQUIREMENT)

CHEM105aL(GeneralChemistry) OR CHEM 115aL (Advanced General Chemistry) OR MASC 110L (Materials Science)

If you intend to enter industry at the BS or MS level and your interests do not require a background in chemistry (for students in communications, computers, controls, electronic circuitry, etc.), you should probably take MASC 110L. This course gives you a basic understanding of metals, polymers, ceramics, semiconductors, etc., and their applications in EE. MASC 110L will fulfill the chemistry requirement in most engineering majors except for Biomedical, Chemical, Civil and Environmental Engineering.

If you intend to pursue a research career and earn a Ph.D., or if you are interested in an area where a knowledge of chemistry is important (biomedical systems, solid state, etc.), you should take CHEM 105aL. CHEM 115aL is equivalent to CHEM 105aL but taught at a higher level. You need approval from the Chemistry Department (SGM 223, 213/740-7027) to register for CHEM 115aL.

F. WRITTEN & ORAL COMMUNICATION SKILLS (REQUIREMENT)

In industry the engineer does not work in a vacuum, but normally belongs to a team. The importance of written communications cannot be emphasized enough. WRIT 140 is a required course that is offered by the Expository Writing Program (the listing is separated from that of the English Department). This class must be taken concurrently with the Social Issues GE course. This class also must be completed by the end of the first year of study. Transfer students who have completed and transferred the equivalent of COMP 102 should proceed to the upper division portion of the writing requirement (see advisor or The Writing Program).

Also required is WRIT 340 (3) (Communications for Engineers), which is usually taken in the junior year. No portion of the communication skills requirement may be taken Pass/No Pass.

American Language Institute (ALI)

ALI provides instruction in English as a Second Language for international students at USC. No credits are given for ALI courses because they are classified as preparatory. After completing required ALI courses, the international student is still obligated to satisfy the English composition requirement. For more information, please contact ALI at the Jefferson Building, JEF 141, (213) 740-0079.

G. HUMANITIES/SOCIAL SCIENCE (REQUIREMENT)

A Bachelor of Science degree in electrical engineering requires 20 units in the humanities and social sciences, in addition to the required 7 units in the Written & Oral Communication Skills requirement.

The general education requirements for the Bachelor of Science in Engineering for freshman beginning at USC in Fall 1997 or later are listed below. Students who began prior to Fall 1997 should follow the transitional requirements. Students who began before Fall 1997 and have completed their requirements must follow the requirements for The School of Engineering as described in the USC catalogue from the year they entered college.

For the purpose of fulfilling this requirement, humanities and social sciences courses are to be chosen from the following:

Areas of Study:

- I. Cultures and Civilization I: 1 course
- II. Cultures and Civilization II: 1 course
- III. Scientific Principles (satisfied by PHYS 151)
- IV. Investigations in Science & Technology (1 course from I, II, or VI)
- V. Studies in Literature, Thought & Arts: 1 course
- VI. Social Issues: 1 course taken with Writing 140

Diversity Requirement:

All students beginning college Fall 1993 or later at USC or elsewhere are required to fulfill the diversity requirement. Students may complete this requirement with the courses identified by the "m" designation for multiculturalism. Some of the courses listed under diversity also meet other general education requirements.

III. AREAS OF EMPHASIS

Two Areas of Emphasis are available in electrical engineering - Computers and Manufacturing Engineering. An Area of Emphasis is a specific focus within the major and does not appear on the diploma, but is indicated on the transcript.

A. Bachelor of Science in Electrical Engineering (Computers)

The Bachelor of Science in Electrical Engineering with the special designation “Area of Emphasis in Computers” is earned by successfully completing the normal requirements for the BSEE degree with the following courses chosen as EE electives:

- EE 454L Introduction to Systems Design Using Microprocessors (4 units/D)
- EE/CS 455x Introduction to Programming Systems Design (4 units)
- EE 457x Computer Systems Organization (3 units)
- EE 478L Digital and Electronic Circuit Design (4 units/CD)

B. Bachelor of Science in Electrical Engineering (Manufacturing Engineering)

The Bachelor of Science in Electrical Engineering with the special designation “Area of Emphasis in Manufacturing Engineering” is earned by successfully completing the normal requirements for the BSEE degree with the following courses chosen as EE electives:

- EE 443 Introduction to Power Systems (3 units)
- EE 454L Introduction to Systems Design Using Microprocessors (4 units/D)
- EE 459L Senior Design Project (3 units/CD)
- EE 478L Digital and Electronic Circuit Design (4 units/CD)
- EE 482 Linear Control Systems (3 units)

C. Bachelor of Science in Electrical Engineering (Integrated Media Systems)

The Bachelor of Science in Electrical Engineering with the special designation “Area of Emphasis in Integrated Media Systems” is earned by successfully completing the normal requirements for the BSEE degree with the following restrictions: (1) students must take the following entry-level electives in the topical areas of Communication, Control and Signal Processing: EE 241 (3 units); Computer

Engineering: EE 102L (2 units), EE 357 (3 units) and Electronic Devices and Circuits: EE 338 (3 units), EE 348L (4 units). (2) The following courses in the Area of Specialization of Signal Processing, Communication and Control Systems must be taken:

- CSCI 351 Programming and Multimedia on the World Wide Web (3 units)
- CSCI 480 Computer Graphics (3 units)
- EE 434L Digital Signal Processing Design Lab (4 units/CD)
- EE 450 Introduction to Computer Networks (3 units)
- EE 469 Introduction to Digital Media Engineering (3 units)
- EE 483 Introduction to Digital Signal Processing (3 units)

(3) The student must also take at least two Design courses from the departmentally approved list.

IV. MINORS

Minors in Multimedia and Creative Technologies and in Music Recording are available specifically to undergraduates majoring in electrical engineering. Other minors are available and listed under the University Catalogue's Undergraduate Degree Programs. Application for a minor must be made to the department or professional school and an appropriate signature must appear on a Change/Addition of a Major or Minor Degree Objective form.

A. Minor in Multimedia and Creative Technologies

A minor in multimedia and creative technologies is available to undergraduate students majoring in electrical engineering, computer engineering/computer science and computer science, and to other engineering students who have sufficient background for the required courses and the engineering electives. This minor provides students with the skill necessary to compete in the multimedia technology industry.

Students are required to complete a minimum of 16 units of specific course work. Students must apply to the School of Engineering (OHE 106) for the minor and departmental approval will be required. At least 9 upper division units must be taken outside of the major department.

<u>Required courses</u>	<u>Units</u>
CNTV 405 Filmic Expression	4
CSCI 351 Programming and Multimedia on the World Wide Web	3
EE 320 Digital Media Basics for Multimedia	3
Advisor approved electives	<u>(minimum) 6</u>
	16 units minimum

Electives

One course from either:

EE 450 Introduction to Computer Networks (3) OR CSCI 480 Computer Graphics (3)

One course from the following:

- CNTV 452 Introduction to Computer Animation (2)
- CNTV 483 Interactive Entertainment and Multimedia (4)
- FA 310 Introduction to Computer Imaging in the Arts (4)
- FA 410 Topics in Computer Imaging in the Arts (4)

MUEA 474ab Electronic Synthesizer Techniques (2-4)

B. Minor in Music Recording

A minor in music recording is offered through the School of Music to provide undergraduate students with the background necessary to enter the field of recording engineering and to familiarize them with the design needs of modern recording equipment. The minor is recommended to electrical engineering majors with extensive musical training who would like to combine their technical and musical abilities while learning the engineering applications of physical and mathematical principles to the art of music recording. A minimum of 24 units of coordinated courses is required for the completion of this minor.

Prerequisite

Acceptance in the program will require either MUIN 475a or the equivalent and a personal interview by the School of Music to assure that the student has sufficient musical background and skill.

Students admitted to this minor will be expected to have a minimum GPA of 3.0 and to maintain that average with no grade lower than a “C” for all courses taken in the minor.

<u>Required Courses</u>	<u>Units</u>	
MUIN 286	Recording Production Management	2
MUIN 291 The Mixing Console	2	
MUIN 380 Tape and Tape Recorders	2	
MUIN 389 Digital Equipment and Recording	2	
MUIN 392 Acoustics and Speaker Design	2	
MUIN 475abx	Recording Arts Workshop	8
MUIN 477 Remote Recording Techniques	2	
MUIN 478 Advanced Multichannel Remix	2	
MUIN 493 Audio Signal Processing Equipment	2	
		24 units minimum

V. Taking Graduate Courses As Electives (Optional)

In cases where there is a definite need or purpose to take a 500 level course (graduate) for undergraduate credit, a student must have junior or senior standing with an overall 3.0 GPA. Students meeting this criteria must have written permission from Degree Progress (SAS 010) to present to the Registration Office (REG 100). Students not meeting this standard must initiate a petition in the Engineering Student Affairs (ESA) Office (OHE 106). The petition must be approved by the EE Department and countersigned by ESA before it is presented to the Registration Office.

If a student wishes to reserve a 400 or 500 level course for graduate credit, the student must petition to the Graduate Study Committee. The Graduate Petition Form is available from the Graduate Study Office (OHE 330G).

VI. GENERAL INFORMATION

A. COUNSELING AND TUTORING SERVICES

It is recognized that the transition from high school to a university can be a most difficult time of adjustment and can magnify both personal and academic problems. To assist students with these problems, personal counseling is available at the Counseling Center in YWCA (213/740-7711), and a

tutorial program is conducted by the Engineering Student Affairs Office (OHE 106).

a. Personal Counseling

The Counseling Center is a central resource and referral agency for all counseling offices on campus. Personal counseling and therapy are provided by psychologists, psychiatrists, licensed marriage and family therapists, and volunteer counselors from the departments of Counselor Education, Clinical Psychology, and School of Social Work. Psychological and vocational testing is available as well as a variety of encounter groups. No records are kept; all counseling is confidential. Appointments are not necessary, and all services are free.

b. Academic Tutoring

The School of Engineering conducts a tutorial program for all undergraduate engineering students. Tutoring is available for engineering, physics, chemistry, and math courses. The program is administered through the Office of Student Affairs, OHE 106 (213/740-4530), and is free to all engineering students. Tutors are highly qualified, successful students who are selected not only for their knowledge, but for their attitude and proven desire to help other students succeed. They may also help form study groups. Tutoring is available between 9:00 a.m. and 8:00 p.m. Please sign up at SBA 217 for individual appointments. Sometimes just a little help can make a big difference in how well you do in a course.

B. GRADES

The University's grading system includes plus and minus designations with the letter grades. Instructors have the option of using such marks to differentiate more clearly the performance of their students. Please note that the procedure is an optional one and you may continue to receive straight letter grade marks, if the instructor so desires.

a. Pass/No Pass

Certain courses outside the School of Engineering are graded as pass/no pass rather than by letter grade. It is possible for engineering undergraduates to take 12 units pass/no pass towards an undergraduate degree. However, only 4 units pass/no pass may be applied towards general education requirements. Writing 140, COMP 102 and ENGR 499 may not be taken pass/no pass. In the math, science, and engineering departments, courses cannot be taken on a pass/no pass basis. Pass/no pass courses will not affect the student's overall grade point average.

b. Grade Points

To compute your grade point average (GPA) divide your total grade points by total units. The following scale gives the grade points awarded per unit for the following grades: A 4, A- 3.7, B+ 3.3, B 3, B- 2.7, C+ 2.3, C 2, C- 1.7, D+ 1.3, D 1 D- .7.

C. PETITIONS

There are several types of petitions for undergraduates. Petitions are used to request waivers of requirements. Some of the more common petitions are listed below:

1. To extend the time for removal of an incomplete (**IN**) grade.
2. Major requirement petitions.

3. Registration related exceptions.
4. Articulation petitions.
5. Retroactive change of program.
6. General Education petitions.

Students should refer to the University Catalogue and consult the Engineering Student Affairs Office in OHE 106 (213/740-4530) or the office of Admissions and Financial Aid website at *afaweb.esd.usc.edu*, to originate the petition.

D. THE W.V.T. RUSCH UNDERGRADUATE HONORS PROGRAM

The W.V.T. Rusch Undergraduate Honors Program in the School of Engineering provides a stimulating intellectual experience that supplements the normal undergraduate engineering requirements. The Program is open to qualified students in any year of undergraduate study.

Admission to the Program is based on grade point average, faculty recommendations, and SAT scores for new students. Incoming freshmen will be considered for admission to the Program if they have achieved a minimum 3.80 high school GPA and a combined 1420 SAT or 31 ACT score. Transfer and continuing USC students will be considered if they have college GPA of at least 3.8, and a faculty recommendation. Continued membership in the Program requires a minimum 3.6 USC overall GPA. A two-semester probationary period is granted if the GPA drops below the required 3.6.

a. Advisement

Each student in the Program is assigned to a special Honors Program faculty advisor. Most faculty advisors for students in the Honors Program also serve as their regular department advisors. In this role, they provide direction for the student in the process of satisfying the curriculum requirements of the various engineering bachelor's degrees.

Furthermore, Honors advisors are able to waive or substitute any curriculum requirements involving courses within the School of Engineering and the departments of mathematics, physics and chemistry. Special forms have been printed for this purpose, copies of which must be signed by the advisor and the Department Chairman.

b. W.V.T Rusch Honors Colloquium

All students in the Program are required to register in at least one section of ENGR 100abcd - Engineering Honors Colloquium for each year they are in the Honors program. No fees are associated with the Colloquium. The course is a one unit pass/no pass course providing a series of lectures, student presentations, and field trips relevant to engineering in a high-technology society. Past lecturers have included the Director of Walt Disney Animation, USC President Sample, NASA astronaut, and the 1994 Nobel Prize Recipient, Dr. George Olah. Lecture topics have covered patent inventions, careers in space, air quality, genetic engineering, computer crime, and scientific fraud.

c. Annual Retreat

All student and faculty members of the Honors Program are invited to a retreat held annually during the weekend immediately preceding classes for the Fall semester. These retreats have been held at the USC Marine Science Center on Catalina Island, Santa Barbara, Yosemite National Park, and Gold Rush River Runners. Retreat activities included lectures and discussion of the retreat theme topic, planning for the year's Honors Program activities, recreation and entertainment, and free time. All expenses are paid by

the School of Engineering.

d. Miscellaneous Activities

Additional activities for the student and faculty members of the Honors Program include student research projects, a luncheon for graduating seniors, a summer job placement program, and various types of fund raising projects. Further information concerning the Honors Program may be obtained from:

W.V.T. Rusch Engineering Honors Program
University of Southern California
Powell Hall 630
Los Angeles, CA 90089-0271
(213) 740-4710

E. PREREGISTRATION and REGISTRATION

Preregistration:

Each semester there is a period of preregistration for continuing students. The procedures followed are the same as during registration. Preregistration is usually a less hectic time to register. A big advantage is that fewer classes are closed. This is of particular importance in courses such as math, physics, and English, some sections of which close early and make class scheduling difficult. Preregistration is March and April for the Fall semester and in November for the Spring semester. All undergraduate students are encouraged to preregister. Each student must attend a mandatory advisement meeting with the department's Academic Advisor in order to gain permission to register for classes.

If a student has an Activity Restriction printed on the Permit to Register, the restriction must be removed or cleared with the appropriate USC office. Activity restrictions will prohibit registration during the enrollment process.

Registration:

All EE courses required for your degree, require departmental clearance or "d-clearance". To obtain a d-clearance, you must have a staff or faculty advisor sign off on your "Electrical Engineering Program Form". You can obtain these forms in PHE 606. Once your form has been completed and signed, you can bring it to PHE 606 or EEB 100 for your approved coursework to be entered into the student system and reserve spaces in the EE courses you have selected. D-clearances MUST be obtained prior to your touchtone or in person registration. Since d-clearances are given on a first come, first served basis, it is worth it to organize your class schedule prior to each registration period to secure spaces in lecture, discussion, and lab times that best fit your needs.

F. GRADUATION PROCEDURES

a. Student Academic Record System (STARS)

STARS Reports are computerized printouts of a student's degree progress. STARS Reports DO NOT REPLACE degree checks, but they can be a very useful advisement tool for both advisors and students. Students will receive a STARS Report after each enrolled and completed semester. If a report is needed at any other time, please see Nicole Boyce at PHE 610 (213/740-4696) to request a printout. There will

be a 24-hour delay from the time of the request was made to the receipt of the actual STARS Report. Please plan ahead especially during advisement and preregistration.

b. Degree Check

As of Fall 1997, degree check will automatically be done after a student reaches 80 units. A degree check provides the student with an evaluation of the academic records against the degree requirements for graduation. Shortages, or areas where a student has not completed the requirements will be indicated on the Degree Requirement Summary. A copy of the summary will be mailed to the student and the academic department. This serves as the official document indicating the requirements needed to complete the student's degree. Please note that the STARS Report is not an official document for a degree check.

c. Graduation Ceremony

Commencement Instructions are available from the Engineering Student Affairs Office (OHE 106). If you have specific questions regarding Commencement, please contact the ESA Office at (213) 740-4530. The instructions include information on graduation invitations/announcements, caps and gowns.

d. Diploma

The student's diploma is not distributed during Commencement. A diploma will be not ordered until all requirements have been met and the degree posted. The diploma will indicate degree and major, and will not include any degree specialization. Once the diplomas are ordered, students should allow approximately eight weeks for the outside company to prepare the diploma, to return it to USC, and for USC to mail it to the students. Diplomas are ordered upon completion of clearing for any given semester, and once a month thereafter.

**The remainder of this booklet contains a typical sequence of courses for the BSEE.

Typical Sequence of Courses for the Bachelor of Science in ELECTRICAL ENGINEERING

First Year, First Semester

MATH 125	Calculus I (4)
CHEM 105aL	General Chemistry, or
CHEM 115aL	Advanced General Chemistry,
or MASC 110L	Materials Science (each 4)
WRIT 140	Writing and Critical Reasoning (4)*
General Ed	Social Issues (4)*
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16 Units	*Taken concurrently

First Year, Second Semester

MATH 126	Calculus II (4)
PHYS 151L **	Fundamentals of Physics I: Mechanics & Thermodynamics (4)
CSCI 101L	Fundamentals of Computer Programming (3)
EE 105	Introduction to EE (3) <core>
GE (4)	
<hr/>	
18 Units	**Satisfies GE category III requirement

Second Year, First Semester

MATH 226	Calculus III (4)
PHYS 152L	Fundamentals of Physics II: Electricity and Magnetism (4)
EE 101	Intro. to Digital Logic (3) <core>
GE (4)	
<hr/>	
15 Units	

Second Year, Second Semester

MATH 245	Math of Physics and Engineering I (4)
PHYS 153L	Fundamentals of Physics III: Optics and Modern Physics (4)
EE 202L	Linear Circuits (4) <core>
Electives (5)	
<hr/>	
17 Units	

Third Year, First Semester

MATH 445	Math of Physics & Engineering II (4)
EE 301	Intro. to Linear Systems (4) <core>
EE 364	Intro. to Probability & Statistics for EE (3) <core>
WRIT 340	Advanced writing (3)
Electives (3)	
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16 Units	

Third Year, Second Semester

EE 330	Electromagnetics I (3) <core>
ISE 460	Engineering Economy, or
BUAD 301	Technical Entrepreneurship (3)
GE (4)	
Electives (7)	

17 Units

Fourth Year, First Semester

Electives	See requirements for graduation (12)
GE (4)	

16 Units

Fourth Year, Second Semester

Electives	See requirements for graduation (16)
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16 Units

****Minimum Units for Graduation: 131**
