

**DOUBLE MAJOR REQUIREMENTS\***  
**BACHELOR OF SCIENCE IN COMPUTER ENGINEERING (Software) & ELECTRICAL ENGINEERING**  
**FOR STUDENTS ENTERING CATALOG YEAR 1999 OR 2000**  
**COLLEGE OF ENGINEERING, UNIVERSITY OF FLORIDA**

GENERAL EDUCATION\*\*\*

Composition (ENC 2210).....	3	Humanities*.....	6-9
Social and Behavioral Sciences*.....	6-9	International Studies and Diversity**.....	6

\* Both categories combined must total 15 hrs with no fewer than six and no more than nine hrs taken in either category.  
 \*\* These courses may be selected from courses that simultaneously fulfill the general education area requirement in social and behavioral science (S) and humanities (H).  
 \*\*\* The mathematics, physical and biological science requirements are listed with the departmental requirements below.

DEPARTMENTAL REQUIREMENTS

**Mathematics (21/24)**

MAC 2311 Analytic Geometry & Calculus 1 (SAT II=540) .....	4
MAC 2312 Analytic Geometry & Calculus 2 .....	4
MAC 2313 Analytic Geometry & Calculus 3 .....	4
<u>MAP 2302 Elementary Differential Equations (Cal 2) .....</u>	<u>3</u>
MAS 3114 Computational Linear Algebra (Cal 2 & a prg. lang.) .....	3
<u>OR MAS 4105 Linear Algebra 1 (Cal 3) .....</u>	<u>4</u>
STA 4321 Mathematical Statistics (Cal 3) .....	3

**Physics (8)**

PHY 2048 Physics w/Cal 1 (HS Physics, Cal 1; Cal 2, PHY2048L) .....	3
PHY 2048L Lab for PHY 2048 (PHY 2048) .....	1
PHY 2049 Physics w/Cal 2 (PHY 2048; Cal 3, PHY 2049L) .....	3
PHY 2049L Lab for PHY 3049 (PHY 2049) .....	1

**Chemistry/Biology (7)**

CHM 2045 General Chemistry (SAT II=480; CHM 2045L) .....	3
<u>CHM 2045L Lab for CHM 2045 (CHM 2045).....</u>	<u>1</u>
CHM 2046 Chemistry & Qualitative Analysis (CHM 2045) .....	1
<u>OR PHY 2464, or any 3000-level PHY, or any non-CHM</u>	<u>2000- level course with a Gen. Ed. Designation of (P) or (B).....</u>

**Required CEN & EE Major Courses (22)**

CIS 3020 Intro to CIS (Cal 1) .....	3
<u>OR CIS 3023 Program CIS Majors 2 (CIS 3022) .....</u>	<u>3</u>
EGN 4034 Professional Issues in Engineering (4EG) .....	1
EEL 3701C Digital Logic & Computer Systems (CIS 3020) .....	4
EEL 3135 Discrete-Time Signals & Sys.(Cal 3, CIS 3020, MAP2302) .....	3
EEL 3111C Circuits 1 (PHY 2049, Cal 3) .....	4
EEL 4744C Microprocessor Applications (EEL 3701C) .....	4
EEL 4914 Computer Systems Design-Senior Project (4EG) .....	3

**Required CEN Major Courses (27)**

COT 3100 Applic. Discrete Struct (Cal 1, CIS 3020/CIS 3023) .....	3
COP 3530 Data & Algorithm Structures(CIS 3020, COT 3100, Cal 2) .....	4
CDA 3101 Intro to Computer Organization (Cal 1, CIS 3020) .....	3
CEN 3031 Intro to Software Engineering (COP 3530) .....	3
COP 4600 Operating Systems (COP 3530, CDA 3101) .....	3
CEN 4500C Comp. Network Fund. (COP 3530, CDA 3101, COP 4600) .....	4
COT 4501 Numerical Analysis (CIS 3020, MAS3114) .....	3
EEL 4712C Digital Design (EEL 3701C).....	4

**Required EE Major Courses (32)**

EGM 2500 Elements of Statics (PHY 2048, <u>MAC 2313</u> ) .....	2
EEL 3304C Electronics Circuits 1 (EEL 3111) .....	4
EEL 3396 Solid-State Electronic Devices (EEL 3111) .....	3
EGM 3400 Elements of Dynamics (EGM 2500, MAC 2313) .....	3
EEL 3112 Circuits 2 (EEL 3111) .....	3
EEL 3211 Basic Electric Energy (EEL 3111) .....	3

EEL 3472 Electromagnetic Fields (EEL 3111) .....	3
EEL 4514 Commun Sys & Comput (EEL3112 & EEL 3135) .....	3
<u>EEL 4657 Linear Control Systems (EEL 3112 &amp; EEL 3135) .....</u>	<u>3</u>
EEL 4306C Electronic Circuits 2 (EEL 3304C & EEL 3112)	
<u>OR EEL 4310C Digital Integ. Circuits (EEL 3304 or EEL 3396) .....</u>	<u>3</u>
<b>LABORATORIES - Choose 2 from the following</b>	
EEL 4201L Electric Energy Lab (EEL 3211) .....	1
EEL 4514L Communications Lab (EEL 3304C) .....	1
EEL 4657L Linear Controls Lab .....	1
<b>CEN-Engineering Core (0)</b>	
Satisfied by EGM 2500 & EEL 3396 .....	5

**CEN Technical Electives\* (12)**

CAP 4410 Digital Image Processing (COP 3530, Cal 2) .....	3
CAP 4621 Artificial Intelligence & Heuristics (COP 3530) .....	3
CAP 4680 Knowledge-Based Sys.:Theory & Prac. (CAP 4621) .....	3
CAP 4730 Comp. Structures in Computer Graphics (COP 3530) ....	3
CAP 4800 Systems Simulation (COP 3530) .....	3
CDA 4102 Computer Architecture (CDA 3101, COP 3530) .....	3
CEN 4012 Software System Development (CEN 3031) .....	3
CGS 3065 Legal & Social Issues in Computing .....	3
CIS 4301 Info System Design and Devel.(CIS3020/3023, COT3100) .....	3
CIS 4905 Independent Study .....	1-4
CIS 4912C IPPD (CDA 3101, COP 3530, consent of instr.) .....	3
CIS 4930 Special Topics (advisor approval) .....	3
CIS 4940 Internship (advisor approval) .....	1
CIS 4949 Co-op (advisor approval) .....	1
COP 4020 Programming Language Concepts (COP 3530) .....	3
COP 4331 Object-oriented Programming (COP 3530) .....	3
COP 4343 UNIX System Administration (COP4600) .....	3
COP 4620 Translators & Translator Writing Sys. (COP 3530) .....	3

\*At most, 3 credits of programming courses may count towards CISE technical elective credit. See CISE Advisor for approval.

**EE Technical Electives (7)**

See EE Advisor for approved list of courses.

**NOTES:**

- CISE Dept. requires ENC 2210 and CIS 3020/CIS 3023 to be completed with a C or better. Please see EE Dept. for additional course requirements.
- Courses in parenthesis are prerequisites.
- Underlined courses are corequisites.
- An Exit Interview is required during your last semester. Please see an academic advisor in both departments.

\*Minimum Total Hours.....154