Chair: Haluk Ogmen

Electrical and Computer Engineering Program

Incoming transfer students must earn a grade of C or better in all
engineering, mathematics, and science courses. No grade below C
will be accepted on any course transferred to the University of
Georgia. Transfers for electrical and computer engineering curricula
will be accepted only from accredited programs in engineering,
named in the Accreditation Board for Engineering and Technology
(ABET).

Students must earn a 2.000 grade point average in all courses. One
student has attempted 12 semester hours of ECE courses, a cumulative
GPA of 2.200 or better must be maintained to continue in good
standing in the major. The major grade point average is calculated
using all ECE courses except for ECE 1112 and ECE 2506. In addition, for
computer engineering majors only, the major grade point average will
also include all CS courses that could be applied to be Bachelor of Science
in Computer Engineering degree.

The number of hours at an ECE course is limited to two. Attempt is
defined as formal registration that results in a student's name being listed
on an official grade report, which includes grades of W, Q, and I.

Students must complete ECE 1110 & 2311. Before attempting any
2000 level ECE course, they must complete all 1000 level ECE courses,
before attempting any 3000 level ECE course except for ECE 2506 and
2515. They will be automatically included with ECE 3331. A
minimum grade point average of 3.0 and consent of graduate
director is required for an undergraduate or graduate student to enroll in
electrical and computer engineering graduate courses (both and
above 6000)

Students with a bachelor's degree in electrical engineering who want to
pursue a second bachelor's degree in computer engineering, (a)
students with a bachelor's degree in computer engineering who want to
pursue a second bachelor's degree in electrical engineering, and
(b) students who want to pursue the two degrees simultaneously must
meet all requirements for each degree including any co-requirements.
In addition, University policy requires that a student must earn a
minimum of 30 semester hours in addition to the minimum hours stated
for the first degree, regardless of whether the two degrees are completed
simultaneously or successively. A student falling into any one of the
categories above must file a petition with the ECE Department,
declaring precisely which courses will comprise the additional 30 hours.
Such petitions must be approved by the department at least one semester
prior to completion of the second degree. It is not possible to earn both
a BSEE and a BSC degree without following these regulations.

Bachelor of Science in Electrical Engineering

Electrical engineering: Students may choose from two degree plan options,
both leading to the BSEE degree: The Electrical Engineering Option and
the Computer Engineering Option. The first and second years are the
same for both options.

First Year

Fall Semester

Course Hours
CHEM 1117 Chemistry for Engineers Laboratory 3
CSCI 1372 Chemistry for Engineers 3
CHEM 1100 Introduction to Electrical and Computer Eng. 3
ENGR 1065 Freshman Composition I or ENGL 1104. 3

Spring Semester

Course Hours
CHEM 1117 Chemistry for Engineers Laboratory 3
CSCI 1372 Chemistry for Engineers 3
CHEM 1100 Introduction to Electrical and Computer Eng. 3
ENGR 1065 Freshman Composition I or ENGL 1104. 3

Second Year

Fall Semester

Course Hours
ECE 2531 Numerical Methods for ECE 3
HUM 2010 Humanities Core 3
MATH 2433 Calculus III 4
PHYS 1225 University Physics II 3
POLS 357 U.S. Government: Congress, President, and Court 3
Total 16

Spring Semester

Course Hours
ECE 3500 Circuits Lab 1
ECE 2500 Circuit Analysis 3
ECE 3517 Applied Electricity & Magnetism 3
ENGL 2504 Technical Communications 3
MATH 3521 Engineering Mathematics 3
VISUAL & PERFORMING ARTS Core 3
Total 16

Third and Fourth Year, EE Option

Students choosing the EE option must select their ECE electives as
follows: At least 21 hours consisting of at least 6 ECE electives (3+ or 4-
hour ECE courses) are required, electing to satisfy:

Breadth Requirements: At least one course must be taken in each of the
following five ECE concentration areas: (1) Power & Controls, (2)
Signals & Communications, (3) Electromagnetics and Solid State Devices, (4)
Power & Controls, and (5) Signals & Communications. Courses available
in each area are posted in the department.

Electronics Requirement: At least two additional courses must be
taken at the 5000 level.

Two remaining courses may be any ECE elective at the 3000 level or
above except ECE 3331.

Third Year-EE Option

Fall Semester

Course Hours
ECE 3517 Applied EM Waves 3
ECE 3331 Programming Applications in Electrical 3
and Computer Engineering 3
ECE 3537 Electrical Engineering Analysis I 3
ECE 3564 Circuits & Systems 3
ECE 4545 Electronics 4
Total 16

Spring Semester

Course Hours

English Composition for Non-native Speakers 1
HST 1376 or 1377. The United States to 1877 3
MATH 1431 Calculus I 4
POLS 1356 U.S. and Texas Politics and Constitutions 3
Total 19
### Fourth Year – EE Option

#### Fall Semester
- ECE 4119: Solid State Devices Laboratory
- ECE 4333: Engineering Circuit Analysis
- ECE 4446: Microprocessor Systems
- ECE 4477: Digital Logic Design
- ECE 4455: Electromagnetics

#### Spring Semester
- ECE 4334: Electrical & Computer Engineering Systems Design
- ECE 4335: Electromagnetic Principles
- ECE 4336: Introduction to Materials

#### Total Hours
18

### Degree Total
131

### Third and Fourth Year, Computer Option

Students choosing the computer option must select their ECE electives as follows: At least 7 hours consisting of at least two ECT electives. The electives may consist of any non-required 3 hour lecture or 4 hour lecture/homework ECE courses at the 3000 level or higher except ECE 3336.

#### Fall Semester
- ECE 3187: Applied EM Waves
- ECE 4331: Programming Applications in Electrical and Computer Engineering
- ECT 3337: Electrical Engineering Analysis I
- ECE 4441: Digital Logic Design
- ECE 4455: Electromagnetics

#### Total Hours
17

### Spring Semester
- COSC 3220: Introduction to Computer Science I
- ECT 4447: Digital Electronics
- ECE 4446: Microprocessor Systems
- ECE 4434: Elective
- PENG 2323: Engineering Statistics I

#### Total Hours
17

### Fourth Year – Computer Option

#### Fall Semester
- COSC 2329: Data Structures
- ECE 4119: Solid State Devices Laboratory
- ECE 4399: Physical Principles of Solid State Devices
- PENG 3367: Intro to Comp. Arch. & Design
- Approved CPE Elective

#### Spring Semester
- COSC 3350: Fundamentals of Operating Systems
- ECE 4334: Electrical & Computer Engineering Systems Design
- Approval CPE Elective
- ECE Elective

#### Total Hours
14

### Computer Engineering Program

#### First Year

#### Fall Semester
- CHEM 1172: Chemistry for Engineers II
- CHEM 1173: Chemistry for Engineers II
- ECE 1160: Introduction to Electrical and Computer Engg.
- ENGL 1103: Technical Writing
- PEMS 1101: Introduction to Materials
- HIST 1176 or 1177: The United States to 1877
- MATH 1411: Calculus I
- POLS 1136: U.S. and Texas Politics and Constitutions

#### Total Hours
18

### Second Year

#### Fall Semester
- ECE 1331: Computers & Problem Solving
- ENGL 1130: Technical Communication (for ECE 1330)
- ECE 1176 or 1177: The United States since 1877
- MATH 1432: Calculus II
- PHYS 1321: University Physics I

#### Total Hours
16

### Third Year

#### Fall Semester
- COSC 1324: Introduction to Computer Science II
- ECT 2308: Circuits Lab
- ECT 2309: Digital Analysis
- ECE 2337: Applied Electricity & Magnetism
- ECE 3331: Programming Applications in Electrical and Computer Engineering
- ENGL 2316: Technical Communications
- MATH 3321: Engineering Mathematics

#### Total Hours
16
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ECE 3557: Electrical Engineering Analysis</td>
<td>3</td>
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<tr>
<td>ECE 3441: Digital Logic Design</td>
<td>4</td>
</tr>
<tr>
<td>ECE 3555: Electronics</td>
<td>4</td>
</tr>
<tr>
<td>Visual &amp; Performing Arts Core Course</td>
<td>3</td>
</tr>
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<td><strong>Total</strong></td>
<td><strong>17</strong></td>
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### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>COSC 2320: Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>ECE 4457: Digital Electronics</td>
<td>4</td>
</tr>
<tr>
<td>ECE 4416: Microprocessor Systems</td>
<td>4</td>
</tr>
<tr>
<td>INDR 2333: Engineering Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>MATH 336: Discrete Mathematics</td>
<td>3</td>
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<td><strong>Total</strong></td>
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### Fourth Year

<table>
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<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>COSC 5351: Fundamentals of Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>ECE 5367: Intro to Comp Arch &amp; Design</td>
<td>3</td>
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<tr>
<td>Approval CPE: Elective 1</td>
<td>4</td>
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<tr>
<td>Approval SEC: COSC elective 9</td>
<td>3</td>
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<tr>
<td>ECON 2404: Microeconomic Principles</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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### Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>COSC 4390: Fundamentals of Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>ECE 4344: Electrical &amp; Computer Engineering Systems Design</td>
<td>3</td>
</tr>
<tr>
<td>Approval CPE: Elective 10</td>
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<tr>
<td>ECE: Elective Lab 1</td>
<td>4</td>
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<tr>
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### Degree Total

<table>
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<th>Hours</th>
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<td>130</td>
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</tbody>
</table>

1 Refer to the Academic Regulations and Degree Requirements section for information on equivalents and substitutions and to the Admission, Advising, Orientation, and Registration sections for information on advanced placement examinations.

2 Students not qualified to enroll in MATH 1431 must complete MATH 1301 or 1311, as indicated by the results of the Mathematics placement examination, prior to enrolling in MATH 1431.

3 Approved CPE or COSC elective. Any ECE course at the 3300 level or above, except ECE 3336, or choice of COSC 3480, COSC 3340, or any 4000 level COSC course.

4 ECE elective lab. Any ECE course with associated lab at the 3300 level or above except ECE 3336.