

EE 04-06

Worksheet for _____, _____ Date: _____
 (Last Name) (First Name)

Electrical Engineering Curriculum Worksheet for the classes of 2004-2006

| FRESHMAN YEAR | | SOPHOMORE YEAR | | JUNIOR YEAR | | SENIOR YEAR | |
|---|---|--|---|---|--|--|---|
| Fall Semester | Spring Semester | Fall Semester | Spring Semester | Fall Semester | Spring Semester | Fall Semester | Spring Semester |
| MATH 131 or 135 Calculus I 4 | MATH 132 or 136 Calculus II 4 | MATH 235 Linear Algebra See Note 5 3 | MATH 233 Multivariate Calculus See Note 5 3 | ECE 313 Signals & Systems 4 | ECE 314 Intro. to Probability & Random Processes 4 | EE Senior Elective Sequence I See Note 8 6-7 | |
| ENGIN 110, 111, 113 or ENGIN 112 See Note 1 | CHE 120, CEE 121, MIE 123, or ECE 122 (C++) See Note 2 | ECE 211 Circuit Analysis I 4 | ECE 212 Circuit Analysis II 4 | ECE 323 Electronics I 4 | ECE 324 Electronics II 3 | EE Senior Elective Sequence II See Note 8 6-7 | |
| CHEM 111 General Chemistry I 4 | Biological Science Elective See Note 3 | ECE 221 Intro. to Digital System Design 4 | ECE 222 Microprocessor Laboratory 2 | ECE 333 Fields & Waves I 4 | ECE 344 Semiconductor Dev. and Materials See Note 6 | Engineering Elective See Note 9 | EE Elective See Note 7 3 |
| ENGLWP 112 College Writing 3 | PHYSICS 151 & 153 (lab) General Physics I 4 | PHYSICS 152 & 154 (lab) General Physics II 4 | PHYSICS 284 Modern Physics I 3 | ECE 303 Junior Seminar 1 | EE Elective See Note 7 | ECE 415 Senior Design Project I 2 | ECE 416 Senior Design Project II 2 |
| Social World Elective See Note 4 3 | Social World Elective See Note 4 3 | Social World Elective See Note 4 3 | MATH 331 Ord. Diff. Eq. See Note 5 3 | ENGIN 390W Writing in Engineering (formerly ENGL 351) 3 | Social World Elective See Note 4 | Social World Elective See Note 4 | Social World Elective See Note 4 |
| 17 credits | 17 credits | 18 credits | 15 credits | 16 credits | 16 credits | 28-30 credits Total: 127 - 129 credits | |

Check the Course Catalog on <http://spire.umass.edu> for course descriptions and course requisites.

Notes 1 through 9 can be found on page 2 of this worksheet.

For more information regarding this curriculum visit <http://www.ecs.umass.edu/ece/> or call 413-545-2441.

EE

- Notes for the Electrical Engineering Curriculum, for the Classes of 2004-2006 -

Note 1 • Choose one of the following:

ENGIN 110 Intro. to Chem. Engin. I

ENGIN 111 Intro. to Civil & Env. Engin. I

ENGIN 112 Intro. to Electrical & Computer Engin. I

ENGIN 113 Intro. to Mech. & Industrial Engin. I

ENGIN 112 is taught by ECE faculty members and is recommended for all students considering CSE or EE as majors.

Note 2 • Choose one of the following:

CHE 120 Intro. to Chem. Engin. II

CEE 121 Intro. to Civil & Env. Engin. II

ECE 122 Intro. to Electrical & Computer Engin. II
(C++ Programming)

MIE 123 Intro. to Mech. & Industrial Engin. II

Note that C++ programming is required for EE and CSE majors.

Note 3 • Biological Science Elective

Choose any course with the Biological Science designation (BS). It is recommended that the student choose a 100-level BS elective without a laboratory component.

Note 4 • Social World Electives

Choose six courses consisting of:

1. One Literature elective: AL

2. One Literature or Art elective: AL, AT or I

3. One Historical Studies elective: HS

4. One Social and Behavioral elective: SB

5. One Social and Behavioral elective: SB or I

6. One more elective: AL, AT, HS, SB or I

For students who entered the university prior to Fall '02, two of the six Social World electives must carry one of the following designations: D, G or U. •• For students who entered the university on or after Fall '02, one of the six Social World electives must carry the G designation and another must carry the U designation.

[The College of Engineering Social World Depth Requirement was dropped in March 2002.]

Note 5 • Sophomore Mathematics for EEs - Take MATH 235 (Linear Algebra) + MATH 331 (Ordinary Differential Equations) + MATH 233 (Multivariate Calculus). MATH 233 may be taken in the fall and MATH 235 in the spring if desired.

Note 6 • ECE 344, Semiconductor Devices & Materials is required for EE majors. Take it in the spring of the junior year or the spring of the senior year. Remember that ECE 344 is a prerequisite for ECE 571 and ECE 572. If you choose to postpone ECE 344 until the senior year, then take two EE Electives in the spring of the junior year. See Note 7.

Note 7 • EE Electives

Choose two from the following list:

ECE 232, 3 cr., Hardware Organization & Design

ECE 242, 3 cr., Data Structures and Algorithms (with Java)

ECE 334, 3 cr., Fields & Waves II

If you take ECE 344 in the junior year, take one EE Elective in the junior year and one EE Elective in the senior year. If you choose to postpone ECE 344 until the senior year, then take two EE Electives in the spring of the junior year.

(ECE 242 will be a fall semester-only course beginning Sept. 2004.) (CMPSCI 187 is offered both semesters and is equivalent to ECE 242 but it assumes previous knowledge of Java programming.)

Note 8 • EE Senior Elective Sequences

Choose four courses (two of the following two-course sequences)

Important: If you choose two sequences below that only involve three courses you must meet with the Undergraduate Program Director to choose an additional elective. The requirement is for four courses.

COMMUNICATIONS & SIGNAL PROCESSING

• ECE 563 - Intro. to Comm. & Signal Processing (1st sem) + ECE 564 - Communication Systems (2nd sem) 4 cr.
Sequence prerequisites: ECE 313 & ECE 314.

• ECE 563 - Intro. to Comm. & Signal Processing (1st sem) + ECE 565 - Digital Signal Processing (2nd sem) 4 cr.
Sequence prerequisites: ECE 313 & ECE 314.

CONTROL SYSTEMS

• ECE 580 - Feedback Control Systems (1st sem) 4 cr. + ECE 581 - Digital Control of Dynamic Systems (2nd sem)
Sequence prerequisite: ECE 313.

• ECE 580 - Feedback Control Systems (1st sem) 4 cr. + ECE 597/583 - Intelligent Systems (2nd sem)
Sequence prerequisites: {ECE 313} + {MATH 235 + MATH 331 (or MATH 245)} + {ECE 314 or STAT 515}

MICROWAVE ENGINEERING

• ECE 584 - Microwave Engineering I (1st sem) 4 cr. + ECE 585 - Microwave Engineering II (2nd sem)
Sequence prerequisite: ECE 334

MICROELECTRONICS & OPTOELECTRONICS

• ECE 572 - Optoelectronics (1st sem)
ECE 571 - Microelectronic Fabrication (2nd sem) 4 cr. +
Sequence prerequisite: ECE 344

INTEGRATED CIRCUIT (IC) ENGINEERING

• ECE 558 - Intro. to VLSI Design (1st sem) 4 cr. + ECE 571 - Microelectronic Fabrication (2nd sem) 4 cr.
Sequence prerequisite: Senior ECE standing and ECE 344

COMPUTER SYSTEMS ENGINEERING

• ECE 558 - Intro. to VLSI Design (1st sem) 4 cr. + ECE 559 - VLSI Design Project (2nd sem)
Sequence prerequisite: Senior ECE standing

• ECE 353 - Comp. Sys. Lab I (1st sem) + ECE 354 - Comp. Sys. lab II (2nd sem)
Sequence prerequisite: ECE 232

Note 9 • Engineering Elective

Choose one course from the list below:

CEE 240 or MIE 210 - Statics

CEE 241 or MIE 211 - Strength of Materials I

MIE 201 - Introduction to Materials Science

MIE 230 - Thermodynamics I