

Worksheet for _____, _____ Date: _____

(Last Name) (First Name)

CSE 04-06

Computer Systems 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 455,3 cr, Intro. to Discrete Structures See Note 11 3	ECE 313 Signals & Systems 4	ECE 314 Prob. & Random Proc. See Note 6	CSE Senior Elective See Note 9 3-4	CSE Senior Elective See Note 9 3
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	CSE Junior Elective See Note 7 3-4	CSE Senior Elective See Note 9 3	CSE Senior Elective See Note 9 3-4
CHEM 111 General Chemistry I 4	Biological Science Elective See Note 3	ECE 221 Intro. to Digital System Design 4	ECE 232 Hardware Organization & Design 3	ECE 353 Computer Systems Laboratory I 3	ECE 354 Computer Systems Laboratory II 3	CSE Senior Elective See Note 9 3	Engineering Elective See Note 10 3
ENGLWP 112 College Writing 3	PHYSICS 151 & 153 (lab) General Physics I 4	PHYSICS 152 & 154 (lab) General Physics II 4	ECE 242 Data Structures and Algorithms (w/ Java) 3	ECE 303 Junior Seminar 1	ECE 397A Operating Systems 3	ECE 415 Senior Design Project I See Note 8 2	ECE 416 Senior Design Project II See Note 8 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 3	Social World Elective See Note 4 3	Social World Elective See Note 4 3
17 credits	17 credits	18 credits	16 credits	15 credits	16-17 credits	14 - 15 credits	14 - 15 credits Total: 126-130 credits

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

Notes 1 through 11 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.

CSE

- Notes for the Computer Systems Engineering Curriculum for the Classes of 2004-2006 -

Note 1 • Choose one of the following: ENGIN 110 Chem. Eng. I, ENGIN 111 Civil & Env. Eng. I, ENGIN 112 Elec. & Comp. Eng. I, ENGIN 113 Mech. & Indus. Eng. 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 Bio. 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 • Take MATH 235 (Linear Algebra) + MATH 331 (Ordinary Differential Equations). MATH 331 can be taken before MATH 235 if desired.

Note 6 • Take ECE 314 or STAT 515, keeping in mind that ECE 314 is a prerequisite for ECE 563 - Intro. to Communication and Signal Processing. Therefore, CSE majors who desire to keep the ECE 563, 564, 565 options open, should take ECE 314. The prerequisites for ECE 314 no longer include MATH 233.

Note 7 • CSE Junior Elective • Choose one of the following:

ECE 324 - Electronics II (2nd sem)
ECE 344 - Semiconductor Devices & Materials (2nd sem)
MATH 233 - Multivariate Calculus
New: ECE 397B – Software Engineering (first offering Spring 2002)
CMPSCI 287 - Programming Language Paradigms (both sem) 4 cr
or any CSE Senior Elective from Note 9 list.

Seniors will have priority over juniors for enrollment in senior electives in both ECE and CMPSCI courses. CMPSCI 311 (Algorithms) and CMPSCI 320 (Software Engin.) are now listed as CSE Senior Electives in order to reflect the enrollment priority given to seniors.

Note 8 • Enroll in ECE 415-416 (Senior Design Project, 1st sem, 2 cr. & 2nd sem, 2 cr.). Team assignments begin in the junior year.

Note 9 • CSE Senior Electives

Choose five from the list. At least one must be an ECE course.

CSE Senior Electives, in numerical order:

ECE 333 - Fields and Waves I (1st sem) 4 cr
ECE 344 - Semiconductor Devices and Materials (2nd sem)
ECE 397B - Software Engineering
or CMPSCI 320 - Software Engineering (both sem) 4 cr
ECE 558 - Intro. to VLSI Design (1st sem) 4cr
ECE 559 - VLSI Design Project (2nd sem)
ECE 563 - Intro. to Comm. & Signal Processing (1st sem)
ECE 564 - Communication Systems (2nd sem) 4cr
ECE 565 - Digital Signal Processing (2nd sem) 4cr
ECE 568 - Introduction to Computer Architecture (1st sem)
ECE 571 - Microelectronic Fabrication (2nd sem) 4cr
ECE 572 - Optoelectronics (1st sem)
ECE 580 - Feedback Control Systems (1st sem) 4cr
ECE 581 - Digital Control of Dynamic Systems (2nd sem)
ECE 597 - Computer Networks & Wireless Comm. (2nd sem)
ECE 597 - Intelligent Systems (2nd sem)

CMPSCI 311 - Introduction to Algorithms (both sem) 4 cr

CMPSCI 320 (see ECE 397)

CMPSCI 383 - Artificial Intelligence (both sem)

CMPSCI 401 - Formal Language Theory (2nd sem)

CMPSCI 445 - Information Systems (1st sem)

CMPSCI 453 - Computer Networks (2nd sem)

CMPSCI 491A - Compiler Techniques (1st sem)

CMPSCI 520 - Software Engineering: Synthesis (2nd sem)

CMPSCI 521 - Software Engineering: Analysis & Eval. (1st sem)

CMPSCI 530 - Programming Languages (2nd sem)

CMPSCI 570 - Computer Vision (2nd sem)

CMPSCI 585 - Natural Language Processing (1st sem)

CMPSCI 589 - Machine Learning (2nd sem)

Optional: CSE students are not required to complete senior elective sequences. However, each student should consult with her or his advisor as to the advantages of these year-long sequences:

- INTEGRATED CIRCUIT (IC) ENGINEERING
- IC DESIGN - VERY LARGE SCALE INTEGRATION (VLSI)
- COMMUNICATIONS & SIGNAL PROCESSING
- COMPUTER NETWORKS
- CONTROL SYSTEMS
- MICROELECTRONICS & OPTOELECTRONICS
- SOFTWARE ENGINEERING

Note 10 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

Note 11 CMPSCI 250, 4 cr., Introduction to Computation can be taken instead of MATH 455, 3 cr., Introduction to Discrete Structures.