

UNDERGRADUATE HANDBOOK

INDUSTRIAL AND ENTERPRISE SYSTEMS ENGINEERING
FRESHMEN ENTERING PRIOR TO FALL 2006

IESE

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
INDUSTRIAL AND ENTERPRISE SYSTEMS ENGINEERING
117 TRANSPORTATION BUILDING
104 S. MATHEWS AVENUE
URBANA, IL 61801

107 TB	GRADUATE PROGRAMS	217-333-2730
117 TB	MAIN OFFICE	217-333-2731
104 TB	SENIOR PROJECT DESIGN	217-244-8835
209 TB	UNDERGRADUATE PROGRAMS	217-333-0068

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ADVISING

IESE Undergraduate Programs Office

The Industrial and Enterprise Systems Engineering Undergraduate Programs Office is located in 209 Transportation Building. It is directed by the Associate Head and Chief Undergraduate Advisor, Professor Manssour Moeinzadeh. Kris Blazek is the Academic Advisor and Coordinator of Undergraduate Programs. Holly Tiffin is the Undergraduate Program Secretary.

Office hours for the Undergraduate Programs Office are Monday through Friday; 8:00 a.m.-12:00 noon and 1:00 pm-4:30 p.m. You may contact the office at 217-333-0068 or by email at iese-advisor@uiuc.edu. Office personnel will be able to assist you with your Degree Audit, registration questions, academic program planning, course scheduling, adds/drops, credit/no-credit, curriculum modifications, transfer course equivalencies, available electives, honors contracts, Secondary Field of Concentration, curriculum transfers, advisor changes, and other course related items.

Advisors

Each GE and IE student is assigned a faculty advisor. Advisor assignments are made during the 3rd or 4th week of each semester. Any advisor change requests must be submitted prior to advisor assignment. All advisor assignments are available through UI Integrate and are posted outside of 209 TB. Advisor contact information is available on the IESE website.

All students are required to meet with their advisor every semester during early enrollment. Advising letters are sent to all students, outlining the advising steps for early enrollment. Failure to meet with your advisor each semester will result in a hold on your account. You will have to wait until the end of early registration and see Professor Moeinzadeh, Chief Undergraduate Advisor before you can register.

Advisors can provide information on such topics as technical interest areas in engineering, electives, academic program planning, careers in engineering, research opportunities, course adds and drops, and other topics. You are encouraged to establish a good rapport with your advisor. Advisors are good sources of letters of recommendation for both future employment opportunities and graduate school applications.

IE 2.25 Rule and Technical GPA Requirements (IEs only)

The 2.25 Rule: To qualify for registration in the engineering courses shown in the third (junior) year of the curriculum, a student must have completed the mathematics, chemistry, physics, computer science, and College of Engineering courses or equivalent courses that are shown in the first (freshman) and second (sophomore) years of the curriculum with a combined grade point average of at least 2.25 (A=4.0).

Technical GPA Requirement: To remain in good academic standing and to graduate from the IE curriculum, a student must have a GPA of at least 2.0 in all 200-, 300-, and 400-level required College of Engineering courses and technical elective courses taken on this campus.

Academic Progress, Probation, and Drop Rules

Information regarding the University's Academic Progress, Probation, and Drop Rules may be found at:

http://www.admin.uiuc.edu/policy/code/article_3/a3_3-109.html

http://www.admin.uiuc.edu/policy/code/article_3/a3_3-110.html

D Grade Retake Rule

If a student earns a D+, D, or D- in a course that is a pre-requisite for another course, the student **NEEDS TO** retake the pre-requisite course prior to enrolling for the follow-up course. Concurrent registration may be permitted on a petition basis. If you have questions regarding your situation, stop by the IESE advising office in 209TB for assistance.

Repeated Courses

If a student repeats a course, both grades and all hours are included in the student's grade point average. Repeated courses count **ONLY ONCE** towards graduation/degree requirements.

Transfer Courses

The College of Engineering accepts transfer credit from most community colleges and four-year institutions. Questions regarding the transferability of courses may be directed to the College of Engineering or the IESE Undergraduate Programs Office. You may also check the Illinois Course Applicability System (CAS) for transfer course information:

<http://uic.transfer.org/cas/index.jsp>

1. Click "Guest Login" on the left side
2. Click "Course Equivalency Guide" on the left side
3. Select "University of Illinois-Urbana Champaign" as the institution
4. a) If you select "Search by Course" you will enter a UIUC rubric to find the courses at other schools that have been reviewed and determined equivalent to that particular UIUC course.
b) If you select "Browse by School" you will select the school you want to see equivalencies for and then you can further search by rubric from the drop down boxes.

Please pay particular attention to the far right hand column that gives EFFECTIVE DATES. This is very important. If the course has an ending date of 9999, then it is in effect. If it has an ending date, for example, of 1998, then the course is no longer transferable as stated.

You should check your Degree Audit carefully to ensure that courses have transferred as expected. Note any discrepancies and report them to the IESE Undergraduate Programs Office.

Send official transcript from the college or university you attended to:

Office of Admissions and Records
Attn: Beth Clark
901 W. Illinois
Urbana, IL 61801

DARS Audit

A DARS Audit is an unofficial audit of your degree progress that reflects courses completed and currently in progress. It is recommended that you run an audit at least once a semester to verify that the courses you are taking are completing your degree requirements as expected. Please stop by the IESE Undergraduate Programs Office with any questions about this report. You may access your DARS audit at:

<http://www.oar.uiuc.edu/current/dars/generate.html>

Transcript Requests

Unofficial transcripts can be printed from your UI Integrate site

Official transcripts are available at a cost of \$5.00 each. Requests for your official transcript should be made to:

<http://www.oar.uiuc.edu/current/transcripts/request.html>

Transferring Into or Out of IESE (students in the College of Engineering)

Students interested in transferring to another department within the College of Engineering must complete the Inter-Departmental Transfer Petition (available in most departmental offices and at the College of Engineering). A student is required to see the Chief Advisor of the department they are wishing to leave, the Chief Advisor of the department they wish to enter, and have a review in the Academic Affairs Office in the College of Engineering.

Transferring Into or Out of IESE (students **not** in the College of Engineering)

Any student wishing to transfer out of IESE to another department not in the College of Engineering, should notify the IESE Undergraduate Programs Office & see the Chief Advisor in the department to which they plan to transfer. Students will be allowed one transition semester before they must transfer out of IESE.

Students who wish to transfer into GE or IE in the IESE department must complete the Inter-College Transfer form, available from a Dean in the Engineering Academic Affairs Office (206 Engineering Hall) and receive permission to pursue a transfer. Exact procedure is outlined on the College of Engineering website at:

<http://www.engr.uiuc.edu/Advising/transferguidelines.html>.

GE CURRICULUM

**Industrial & Enterprise Systems Engineering
General Engineering Undergraduate Curriculum
(131 credit hours)
(Effective for first-year students entering Fall 1997 – Summer 2006)**

Semester 1

CHEM 102 [101]—General Chemistry	3
CHEM 103 [105]—General Chemistry Lab	1
ENG 100—Engineering Lecture	0
GE 100—Intro to General Engineering	1
GE 101 [103]—Engineering Graphics & Design	3
MATH 220 [120]—Calculus I ²	5
Elective in Social Sciences or Humanities ³	<u>3</u>
	16

Semester 2

ECE 110—Intro Elec & Comp Engrg	4
GE 161 [188]—Intro to Business Side of Eng	1
MATH 242—Calculus of Several Variables	3
PHYS 212 [112]—Univ Physics, Elec & Mag	4
TAM 211 [152]—Statics	3
Elective in Social Sciences or Humanities ³	<u>3</u>
	18

Semester 3

ECE 211—Topics Analog Ckts & Systems	2
GE 310 [221]—Intro General Eng Design	3
GE 320 [222]—Introductory Control Systems	4
Secondary Field of Concentration Elective ¹	3
Elective in Social Sciences or Humanities ³	<u>3</u>
	15

Semester 4

GE 400 [292]—Engineering Law ³	3
TAM 335 [235]—Introductory Fluid Mechanics	4
Design Elective ⁷	3
Engineering Science Elective ⁶	3
Secondary Field of Concentration Elective ⁴	<u>3</u>
	16

Semester 5

CS 101—Intro to Computing, Eng & Sci	3
MATH 230 [130]—Calculus II	3
MATH 225—Introductory Matrix Theory ²	2
PHYS 211 [111]—Univ Physics, Mechanics	4
RHET 105—Principles of Composition ¹	<u>4</u>
	16

Semester 6

GE 330 [288]—OR Meth for Profit & Value Eng	3
MATH 385 [285]—Intro Differential Equations	3
PHYS 214 [114]—Univ Physics, Quantum Phys	2
TAM 212—Introductory Dynamics	3
TAM 251 [221]—Introductory Solid Mechanics	3
Elective in Social Sciences or Humanities ³	<u>3</u>
	17

Semester 7

GE 312 [225]—Instrumentation and Test Lab	1
GE 311 [232]—Engineering Design Analysis	3
GE 331 [289]—Analyt Methods for Uncertainty	3
GE 424 [323]—State Space Desgn Meth in Cntl	3
Secondary Field of Concentration Elective ⁴	<u>3</u>
Elective in Social Sciences or Humanities ³	<u>3</u>
	16

Semester 8

GE 490 [291]—General Engineering Seminar	0
GE 494 [342]—Project Design, I	3
GE 495 [343]—Project Design, II	2
Secondary Field of Concentration Elective ⁴	3
Elective in Social Sciences or Humanities ³	<u>3</u>
Free Electives	<u>6</u>
	17

- 1 These two courses may be taken in reverse order depending upon RHET 105 availability.
- 2 It is recommended that freshmen with appropriate backgrounds in analytical geometry take the MATH 235, 245 calculus sequence (10 hours) instead of MATH 220, 230, 242 sequence (11 hours). If MATH 235, 245 are taken, MATH 415 (3 hours) should be taken in place of MATH 225.
- 3 Each student must satisfy the social sciences and humanities requirements of the College of Engineering, including ECON 102 or 103, and satisfy the campus general education requirements for social sciences and humanities. It is highly recommended ECON 102 or 103 be taken prior to the fourth semester.
- 4 To be selected from lists established by the department or by petition to the department.
- 5 Satisfies the General Education Advanced Composition requirement.
- 6 To be selected from the list of engineering science electives established by the department.
- 7 To be selected from the list of design electives established by the department.

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Dept. of Industrial & Enterprise Systems Engineering

"General Engineering" Curriculum Map

131-hour Curriculum (Admits prior to Fall 2006)

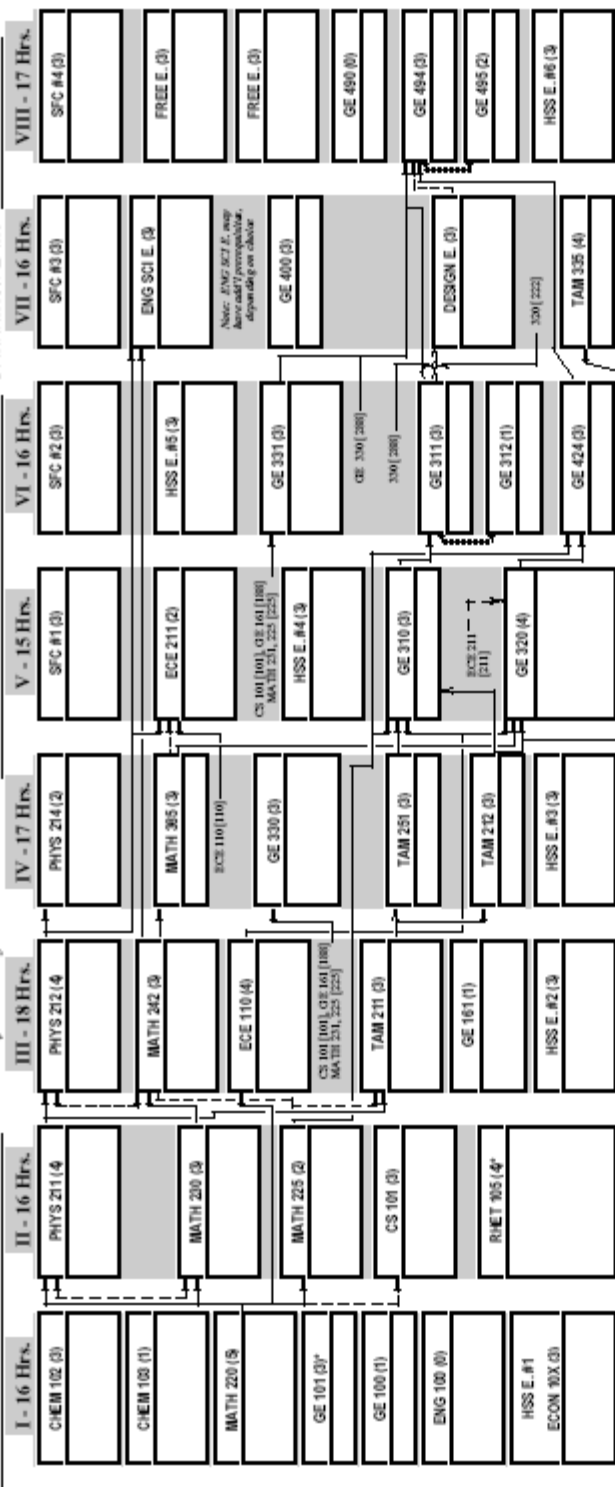
Secondary Field of Concentration

Name: _____

UIN: _____

Graduation Date: _____

Current Dept: _____



Note: ENG 371 E may have dual prerequisite, depending on choice.

NOTES

* Student will take either GE 101 or Rheto 105 based upon Rhet Code assigned at registration.

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C:\Documents and Settings\lawrady\Documents\Permetz\curriculum Map & List prior to 08/22/06\bauc\arrmagr\arr_06_06.rpt

<p>KEY</p> <p>Prerequisite (Credit)</p> <p>Credit OR Concurrent Registration</p> <p>Concurrent Registration</p> <p>Other abbreviations: HSS = Humanities & Social Sciences H = Humanities Course S = Social Sciences Course SFC = Secondary Field of Concentration E = Elective W/N = Western/Non-Western</p>	<p>One of A, B, or C is the prerequisite for D, depending on the design of elective chosen.</p> <p>A B C D</p>
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<p>Summary of Free Electives (6 Hrs.) course (credit status)</p>	<p>Summary of SFC Courses (12 Hrs.) course (credit status)</p>	<p>Campus Social and Behavioral Sciences (6 Hrs.) course (credit status S)</p>	<p>Campus Humanities & Arts (6 Hrs.) course (credit status H)</p>
<p>Advanced Composition (3 Hrs.) course (credit status)</p>	<p>Cultural Studies (2 Courses) course (credit status)</p>	<p>OTHER</p>	
<p>***131-recommended*** course (credit status)</p>		<p>Other HSS Courses course (credit status H/S)</p>	
<p>Grad School? _____</p>			

GE ELECTIVES

Design Electives

The General Engineering Curriculum requires a three-hour Design Elective from one of the following categories: Mechanics and Structures, Control Systems, or Decision-Making (Operations Research). Courses that meet these qualifications are:

- GE 410, Component Design (Pre-requisite GE 311)
- GE 420*, Digital Control of Dynm System (Prerequisite GE 320)
- GE 423, Introduction to Mechatronics (Prerequisite GE 320 and knowledge of C programming language)
- GE 413, Eng Design Optimization (Prerequisite GE 310 & 330).

Courses are subject to cancellation if very low enrollment. The planned offerings of the Design Electives are:

	FA 06	SP 07	FA 07	SP 08	FA 08
GE 410	X	(X)	(X)	(X)	(X)
GE 420	X		(X)		(X)
GE 423		(X)		(X)	
GE 413		(X)		(X)	
(X) tentative					

*Three hours of this course satisfy the Design Elective requirement. The additional hour may be applied by petition to appropriate GE Secondary Fields of Concentration or used as a Free Elective.

Engineering Science Electives

A three-hour Engineering Science Elective must be chosen from the following list:

- MSE 280 - Intro to Eng Materials
- ME 300 - Thermodynamics

GE SECONDARY FIELD OF CONCENTRATION

Basic Information

The Secondary Field of Concentration provides virtually unlimited opportunity and flexibility to tailor the General Engineering curriculum to one's interests and career goals. Secondary Fields of Concentration are of two broad classifications, pre-approved and customized, as described below.

Pre-approved concentrations have designated titles and a specified list of courses from which several may be selected. However, approval for the substitution of a course for one on the specified list may be requested via a petition form submitted to the department.

Customized Secondary Fields of Concentration may be created to achieve goals in areas not provided by pre-approved concentrations. To participate in the customized option, a suitable title and all the courses must be petitioned for acceptance to the department. Petition approval is based on the merit of the Secondary Field of Concentration and the coherence of the courses within it relative to the student's goals.

Pursuit of Campus or College Minors or completion of James Scholar Contracts may be integrated with Customized Secondary Fields of Concentration in the General Engineering curriculum. Courses taken may be applied to both the Minor or Contract and the Secondary Field. This may also be done for coursework applying to a second major in engineering or a dual degree in another UIUC College.

Apparent by the titles of Secondary Fields of Concentration presented on the next page, interesting and varied choices can be made. Often such Secondary Fields of Concentration are tailored to a student's long-term goals of integrating a basic engineering education with specialized activity related to engineering in direct or indirect ways. Secondary Fields of Concentration may be technically or non-technically oriented. Each requires a minimum of 12 hours of coursework.

Electing a Secondary Field of Concentration is usually done in the sophomore or junior year before the first course is taken in the Secondary Field of Concentration. Until this decision is made, you are presumably 'undecided.' In either case, you must make a declaration in the Information Survey section of the IESE Course Planning Consultant. A Secondary Field of Concentration declaration includes an option code and title. The various option categories are:

Option Code – Description	Typical Titles
1 – Undecided	Undecided
2 – Pre-approved SFC: with no course changes	Automotive Eng
3 – Pre-approved SFC: with petitioned course changes	Control Sys
4 – Customized SFC: title from list; all courses petitioned	Finance
5 – Custom SFC: both title and all courses petitioned	Modeling

Pre-approved Choices (Options 2 & 3)

Pre-approved Secondary Fields of Concentration consist of related courses in the areas of study listed below. For **Option 2**, any 12 hours of credit may be selected from the course list

given for the Field of Concentration. For **Option 3**, 12 hours still applies, but a request for the substitution of a course not in the list for Option 2 may be made via a petition form. Generally speaking, one course substitution is reasonable. Two or more suggest that a Customized choice be made. Petition approval by the IESE Department is based on the coherence of the complete set of courses chosen.

In several instances, the following course substitutions may be used interchangeably to comply with prerequisites of listed courses within the pre-approved Secondary Fields of Concentration:

- CEE 293, ECE 313, GE 289, IE 230, STAT 310/MATH 363
- CEE 292, GE 288, IE 210
- MATSE 306/ME 231, TAM 224/CEE 210
- ECE 386, GE 222 plus GE 224, ME 240

In the list that follows are titles of Secondary Fields of Concentration under Options 2 or 3, and approved course lists for those in Option 2.

- Automotive Engineering
- Bioengineering (Engineering Option)
- Business Systems Integration and Consulting
- Civil Engineering Structures
- Communications and Computer Systems
- Computer-Aided Design and Manufacturing (CAD/CAM)
- Computer Science
- Construction
- Control Systems
- Engineering Administration
- Engineering Marketing
- Environmental Quality
- Manufacturing Engineering
- Nondestructive Testing and Evaluation
- Operations Research
- Quality Control
- Rehabilitation Engineering
- Robotics
- Theoretical and Applied Mechanics

For each of these options, courses may be chosen without further approval to complete the Secondary Field of Concentration.

Approval for other courses not listed may be sought by petition. The most likely candidates are non-permanent and experimental offerings relevant to the various fields. See the list of electives each semester before early registration.

Customized Choices (Options 4 & 5)

Customized Secondary Fields of Concentration can be created to achieve specific career goals not addressed by Pre-approved Secondary Fields of Concentration. Customized Secondary Fields of Concentration differ from Pre-approved ones in that no sets of specified courses to choose from have been predefined. For all Customized Secondary Fields of Concentration, a course list must be constructed and submitted for approval by the department. To do so, a petition form stating the title and courses for the Secondary Field of

Concentration must accompany the Course Planning Consultant Information Survey declaration. Petition approval by the Department of General Engineering is based on both the merit of the Secondary Field of Concentration and the coherence of the courses within it relative to the student's goals. For **Option 4**, established titles exist, but not course lists.

Selection of courses for a Customized Secondary Field can be made through research of the Courses Catalog and with the assistance of the student's academic advisor. In addition, for petitioned Secondary Fields, a limited database of courses previously selected exists that may be reviewed in the Chief Advisor's Office. But one should note that courses cited are only suggestive, as they were approved on a case-by-case basis with pertinent goals in mind and available/appropriate course offerings have changed over time. In the list that follows, choices for Secondary Field Titles under Option 4 are effective **Fall 2005**. They represent titles for Customized Secondary Field of Concentration that have been petitioned in the past.

- Accountancy
- Acoustics
- Agricultural Engineering (or any other engineering discipline)
- Agronomy
- Animal Science
- Applied Mathematics
- Applied Statistics
- Astronomy
- Audio Engineering
- Aviation
- Biology
- Chemistry
- Cinematography
- Circuit Analysis and Design
- Economics
- Energy
- Entrepreneurship
- Finance
- Finite Element Analysis
- Fluid Dynamics
- Food Science
- Geography
- Heat Transfer
- History of Engineering, Science and Technology
- Human Factors
- Industrial Design
- Industrial Psychology and Organizational Behavior
- Insurance and Actuarial Science
- Integrated Engineering and Industrial Design
- International Business
- Japanese (or any other language)
- Landscape Architecture
- Machine Design
- Mechatronics
- Meteorology
- MicroElectroMechanical Systems (MEMS)
- Mining and Geological Engineering
- Philosophy
- Political Science

- Power Systems
- Pre-Dentistry
- Pre-Law
- Pre-Medicine
- Pre-Veterinary Science
- Railroad Engineering
- Solar Energy
- Technical Journalism
- Technology and Management
- Telecommunications
- Thermal Science
- Thermodynamics
- Vehicle Dynamics

If a Secondary Field of Concentration title of interest is not found in the above lists of Pre-approved and Customized choices, a title may be created, resulting in the Secondary Field of Concentration being categorized as **Option 5**. For Option 5, the title and course list must be put into the petition, and the Option and title declared in the Information Survey section of the Course Planning Consultant.

How to Declare your Secondary Field of Concentration

Option 1 (undecided) and option 2 (Pre-approved) Secondary Fields of Concentration may be declared by entering the information into the Information Survey portion of the Course Planning Consultant: <http://ge.ge.uiuc.edu/cpc/bin/ge>

Option 3 (Pre-approved with course substitution), option 4 (Custom field from existing list of titles), and option 5 (custom field not from existing list of titles) must be declared by entering the information into the Information Survey portion of the CPC and by submitting a petition. The petition must be approved by your advisor and the Chief Undergraduate Advisor. Forms can be found in the IESE Undergraduate Office and online at <http://www.iese.uiuc.edu/ugrad/advising/forms.html>

IE CURRICULUM

**Industrial & Enterprise Systems Engineering
Industrial Engineering Undergraduate Curriculum
(132 credit hours)
(Effective for first-year students entering Fall 1997 – Summer 2006)**

Semester 1

CHEM 102 [101]—General Chemistry	3
CHEM 103 [105]—General Chemistry Lab	1
ENG 100—Engineering Lecture	0
IE 170/GE 101 [103]—Computer Aided Design/ Engineering Graphics & Design ¹	3
MATH 220 [120]—Calculus I	5
Elective in Social Sciences or Humanities ²	<u>3</u>
	15

Semester 3

CS 101—Intro to Computing, Eng & Sci	3
MATH 242—Calculus of Several Variables	3
PHYS 212 [112]—Univ Physics, Elec & Mag	4
TAM 210 [150]—Introduction to Statics	3
Elective in Social Sciences or Humanities ²	<u>3</u>
	16

Semester 5

IE 310 [210]—Intro to Operations Research	4
IE 340 [240]—Human Factors	4
ME 330 [231]—Engineering Materials	4
MATH 415 [315]—Linear Algebra	3
Elective in Social Sciences or Humanities ²	<u>3</u>
	18

Semester 7

IE 430 [337]—Economic Found of Quality Sys	3
ME/IE Elective ⁷	3
Human Factors Elective ³	3
Operations Research Elective ⁵	3
Elective in Social Sciences or Humanities ²	3
Free Elective	<u>3</u>
	18

Semester 2

CHEM 104 [102]—General Chemistry II	3
CHEM 105 [106]—General Chemistry II Lab	1
MATH 230 [130]—Calculus II	3
PHYS 211 [111]—Univ Physics, Mechanics	4
RHET 105—Principles of Composition ¹	4
Elective in Social Sciences or Humanities ²	<u>3</u>
	18

Semester 4

IE 300 [230]—Analysis of Data	3
MATH 385 [285]—Intro Differential Equations	3
PHYS 213 [113]—Univ Physics, Thermal Physics	2
PHYS 214 [114]—Univ Physics, Quantum Phys	2
TAM 212—Introductory Dynamics	3
TAM 251 [221]—Introductory Solid Mechanics	<u>3</u>
	16

Semester 6

IE 330 [235]—Industrial Quality Control	3
IE 360 [261]—Facilities Planning and Design	3
IE 361 [262]—Production Planning and Ctrl	3
IE 390 [291]—Seminar	0
ME 350 [285]—Design for Manufacturability	3
ECE 205—Intro Elec & Electr Circuits	3
ECE206—Intro Elec & Electr Ckts Lab	<u>1</u>
	16

Semester 8

IE 470 [280]—Senior Design Project	3
Manufacturing Elective ⁴	3
Technical Elective ⁶	4
Elective in Social Sciences or Humanities ²	3
Free Electives	<u>3</u>
	16

- 1 These two courses may be taken in reverse order depending upon RHET 105 availability.
- 2 Each student must satisfy the social sciences and humanities requirements of the College of Engineering, including ECON 102 or 103, and satisfy the campus general education requirements for social sciences and humanities. It is highly recommended ECON 102 or 103 be taken prior to the fourth semester.
- 3 Human Factors Elective – 3 hours required. Choose from a departmentally approved list.
- 4 Manufacturing Elective – 3 hours required. Choose from a departmentally approved list.
- 5 Operations Research Elective – 3 hours required. Choose from a departmentally approved list.
- 6 Technical Elective – 4 hours required. Choose from a departmentally approved list.
- 7 ME/IE Elective – 3 hours required. Choose from a departmentally approved list.

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Dept. of Industrial & Enterprise Systems Engineering
"Industrial Engineering" Curriculum Map
 132-hour Curriculum (Prior to Fall 2006 admits)

Name: _____ UIN: _____

Current Dept: _____ Graduation Date: _____

I - 14 Hrs.	II - 18 Hrs.	III - 16 Hrs.	IV - 16 Hrs.	V - 18 Hrs.	VI - 16 Hrs.	VII - 18 Hrs.	VIII - 16 Hrs.
CHEM 102 (1001) (3)	PHYS 211(112) (4)	PHYS 212(112) (4)	PHYS 213(2)	MATH 415 (3)	ECE 205 (3)	FREE E. (3)	FREE E. (3)
CHEM 102 (1005) (1)	MATH 200 (3)	MATH 242 (3)	PHYS 214(114) (2)	IE 310 (4)	ECE 206 (1)	OR E. (3)	ME & IE E. (3)
MATH 200 (5)	CHEM 104 (3)	CS 101 (3)	MATH 385 (285) (3)	IE 340 (4)	IE 300 (3)	IE 430 (3)	TECH E. (4)
IE 170/GE 101 (3) *	CHEM 106 (1)	TAM 210 (2)	IE 300 (3)	HSS E. #4(3)	IE 361 (3)	HUM FAC E. (3)	IE 470 (3) **
ENG 100 (100) (0)	RHET 105 (105) (4) *	HSS E. #3 (3)	TAM 251 (251) (3)	ME 309 (4)	IE 330 (3)	MFG E. (3)	HSS E. #6 (3)
HSS E. #1	HSS E. #2 (3)	Technical Elective (4 Hrs.)	TAM 212 (212) (3)	ME 350 (3)	ME 350 (3)	HSS E. #5	
ECON 80X (3)		Human Factors Elective (3 Hrs.)			IE 380 (0)		
Summary of Free Electives (6 Hrs.)		Operations Research Elective (3 Hrs.)	Advanced Composition (3 Hrs.)	Campus Humanities & Arts (6 Hrs.)	***Unrecorded*** course (credit status)		
		Campus Social and Behavioral Sciences (6 Hrs.)	Manufacturing Elective (3 Hrs.)	Cultural Studies (2 Courses)	KEY		
		ME/IE Elective (3 Hrs.)	Other HSS Courses	COURSE (HRS.) credit status course taken COURSE (HRS.) credit status course not taken			
		OTHER	Other HSS Courses	Prerequisite (Credit) Credit OR Concurrent Registration Concurrent Registration			
		NOTES		other abbreviations: HSS = Humanities and Social Sciences Course H = Humanities Course S = Social Sciences Course E = elective SP = offered spring semester F = offered fall semester			
		Grad School?		*Student will take either GE 101 or Rhel 105 based upon Rhel Code assigned at registration. **IE 470 requires credit or concurrent registration in all required courses with the IE & ME rubric. IE 470 completes the Composition II requirement. †††Unrecorded*** course (credit status)			
				Data Snapshot Date: Printed: 4/12/2006			

IE ELECTIVES

Human Factors Electives

A three-hour Human Factors Elective must be chosen from the following list:

- AVI 447 – Human Error
- AVI 455 – Aviation Accident Analysis
- IE 440 – Occupational Biomechanics
- IE 441 – Interactive Sys Model and Des
- IE 442 – Safety Engineering
- IE 445 – Hum Perf and Eng Psych
- IE 446 – Hum Comp Interaction Lab

Manufacturing Electives

A three-hour Manufacturing Elective must be chosen from the following list:

- IE 450 – Computer-Aided Mfg Systems
- IE 451 – Num Control of Mfg Processes
- MFGE 430 – Introduction to Mechatronics
- MFGE 450 – Info Mgmt for Mfg Systems
- ME 445 – Introduction to Robotics
- ME 446 – Robot Dynamics and Control

M&IE Electives

A three-hour M&IE Elective must be chosen. All 300 & 400-level IE & ME courses are eligible electives.

Operations Research Electives

A three-hour Operations Research Elective must be chosen from the following list:

- IE 410 – Stochastic Proc and App
- IE 411 – Optimization of Large Lin Sys
- IE 412 – OR Models for Mfg Systems
- IE 413 – Simulation

Technical Electives

Four hours of Technical Electives must be chosen from a departmentally approved list.

1. NO MORE THAN 3 HOURS of individual study courses may be used to satisfy the M&IE Elective and Technical Elective requirements. Additional hours may be used as Free Electives. Technical Elective credit for individual study courses from other departments is given only by petition. It is expected that a final report will be prepared and submitted to the faculty advisor at the conclusion of an individual study.
2. Depending on the technical content, some Special Problems courses (typically, new lecture-discussion courses) may or may not be approved for Technical Elective credit. A Curriculum Modification Petition should be submitted to the Undergraduate Programs Office to request the use of these courses for Technical Elective credit. The petition should be submitted **before** registering in the respective course.

3. Credit is allowed for only one of any two or more Technical Electives with significant overlap, for example, ME 310 & TAM 335; IE 411 & MATH 482; ME 430 & TAM 424.

Industrial Engineering Technical Electives

SUBJECT	ALLOWED 200 & 300 LEVEL	ALLOWED 400 LEVEL
IE & ME	All	All
AE	322, 353	All except 497 ₁ , 498 ₂
ABE	374	All except 440, 445, 498 ₂
AVI	Any cross listed with IE	447
BIOC	None	All except 460
BIOE	280	All except 498 ₂
BIOP	None	All
CHBE	None	All except 430, 431, 454 ₁ , 494 ₂ , 497 ₁
CHEM	232, 233, 236, 237	All except 484, 492 ₂ , 494, 495, 499
CEE	All except 201, 202, 300	All except 495, 497 ₁ , 498 ₂
CS	All except 210, 296, 397 ₁ , 398 ₂	All except 417, 491, 492 ₂ , 493 ₂ , 498 ₂ , 499
ECE	280, 290, 328, 329, 385, 390, 395	All except 445, 497 ₂ , 498 ₂ , 499
ECON	302	440, 465, 471, 480
GE	None	All except 400, 401, 494, 495, 497 ₁ , 498 ₂
MCB	None	401, 402, 403, 404, 450
MSE	None	All except 486, 492, 497 ₁ , 498 ₂ , 499
MATH	257, 380	All except 402, 405, 406, 408, 439, 463, 496, 490 ₂ , 499
MFGE	None	All except 420, 497 _{1,2}
NPRE	201, 241	All except 432, 458, 480-483, 498 ₂
PHYS	None	All except 419, 497 ₁ , 498 ₂
PSYC	230, 245, 355	455, 457
STAT	None	All except 400, 408
TAM	335	All except 497 ₁ , 498 ₂ , 499

GENERAL EDUCATION REQUIREMENTS

Information regarding General Education Requirements for Engineering students may be found in your ENG 100 Freshman Resource book, or at the following web sites:

<http://www.engr.uiuc.edu/Academic/hand/hbook96.rules.html>

<http://courses.uiuc.edu/gened>

GRADUATION INFORMATION

Residency Requirements

In addition to specific course and scholastic average requirements, each candidate for a bachelor's degree from the University of Illinois at Urbana-Champaign must earn at least 60 semester hours of University of Illinois at Urbana-Champaign credit, of which at least 21 hours must be 300 or 400 level courses at a University of Illinois at Urbana-Champaign campus location.

Graduation

Students must notify the College of Engineering of their intent to graduate. You should submit your intent to graduate during advance enrollment of your final semester. The deadline to file your intent is the 10th day of class of your final semester. You can indicate so in UI Integrate.

Participation in the Graduation Ceremony is optional. To sign up, follow the directions on the Engineering website:

<http://www.engr.uiuc.edu/students/commence.php>

CAREERS AND SCHOLARSHIPS

Engineering Career Services Office

The College of Engineering provides an Engineering Career Services Office to help students obtain permanent employment after graduation as well as engineering-related summer employment while in school. The office is located in 3270 Digital Computer Laboratory (DCL) (333-1960). This office also lists opportunities on the internet. They are listed under the Ease System at <http://www.uiucengineeringjobs.com>. This office coordinates nine weeks of on-campus recruiting during fall and spring semesters. During each semester, over 300 companies come from all over the United States to campus, to interview engineering students.

The Engineering Career Services Office holds several meetings to inform students about the operation of the Career Services Office and the process involved with working with the Career Services Office. The Office will help you with resume preparation, interview planning, and plant trips.

The Engineering Career Services Office has a library of literature about more than 700 companies. You can use this information to become informed about the various companies, their products, and services. Students registered in the ECS program receive the following benefits:

1. Identify companies interviewing on campus this semester
2. Access new job openings targeted specifically toward UIUC graduates, 24-hours a day, on-line
3. Search for job opportunities that match your qualifications
4. Create your electronic resume once, and submit it to interested employers with the click of a button
5. Sign-up for available career fairs and campus interviews on-line
6. Use a unique point-bidding process to win campus interviews with top employers
7. Take advantage of customized checklists and reminders for your interview schedule
8. Use the nationally-acclaimed web software, Interview/TRAK, from home or campus
9. Receive interview tips from corporate recruiters
10. Access voluntary faculty database available to employers and students seeking expertise, course information, or guidance.

General Engineering Placement Systems (GEPS)

The General Engineering Placement System (GEPS) has been developed to help GE students overcome some of the difficulty in seeking employment. GEPS is a committee of students who assist fellow GEs in making contacts, possibly finding jobs, and also try to make the General Engineering degree and its students well known throughout the engineering, professional and academic communities. GEPS offers many services, including:

- The G.E. Resume Book
- Alumni Contacts with Job Openings (provided through the GEPS Handbook)
- Jobapalooza (The Spring Job Search Workshop)
- Company Presentation/Interview Visits
- New Company Contacts through Inquiry Mailings
- The GEPS Homepage

Scholarships and Awards

IESE offers many scholarships and awards to students. Each fall, students should complete an activity resume & submit it to Kris Blazek, 209 TB. The activity resume, along with GPA, class, and Secondary Field of Concentration, is used by the Awards Committee to select award recipients each spring. The IESE awards banquet is usually held in April of each year. Students, parents, alumni, faculty, and staff are invited to attend. A complete list of scholarships and awards can be found on the IESE website in the following two locations:

<http://www.iese.uiuc.edu/ugrad/aid/scholarships.html>

<http://www.iese.uiuc.edu/ugrad/aid/awardlist.html>

Fundamentals of Engineering Exam (FE)

The first step to become certified as a Professional Engineer (PE) is to take the Fundamentals of Engineering (FE) exam, formerly known as the EIT. This exam is offered twice a year at the University of Illinois, in October and April. Registration for the fall exam is typically in mid-September while registration for the spring exam falls around February. Note: To register for the FE exam through Continental Testing, you must be within one calendar year of graduation and be a current undergraduate student at UIUC. Others need to contact the Illinois Department of Regulation to register for the exam. More information is available on the Engineering website:

<http://www.engr.uiuc.edu/Advising/fe-intro.html>

WEBSITES/PHONE NUMBERS AT A GLANCE

COE Advising Website

<http://www.engr.uiuc.edu/students/current/advising.php>

College of Engineering

<http://www.engr.uiuc.edu/>

Course Information Suite

<http://courses.uiuc.edu/cis>

CPC

<http://www.iese.uiuc.edu/ugrad/advising/cpc.html>

Degree Audit

<http://www.oar.uiuc.edu/current/dars>

Engineering Career Services

<http://www.engr.uiuc.edu/ecs/>

Engineering Coop/Internship Program

<http://ecs.cen.uiuc.edu/students/programs.html>

GE 494/IE 470 Senior Project Design

<http://www.iese.uiuc.edu/ge494>

IESE Department website

<http://www.iese.uiuc.edu>

International Programs in Engineering

<http://www.engr.uiuc.edu/international/>

Transfer Courses

<http://uic.transfer.org/cas/menu.jsp?guest=1>

UIUC

<http://www.uiuc.edu>

Undergraduate Minors

<http://www.engr.uiuc.edu/students/prospective/programs.php>

College of Engineering Advising.....	217-333-2280
Emergency Dean	217-333-0050
Engineering Career Services.....	217-333-1960
Financial Aid.....	217-333-0100
IESE Undergraduate Programs.....	217-333-0068
McKinley Health Center	
Cancellations.....	217-244-6066
Dial-A-Nurse.....	217-333-2700
Pharmacy.....	217-333-2710
Prescription Refill.....	217-244-2511
Motorist Assistance	217-244-HELP (4357)
Parking.....	217-333-3530
Registration Assistance	217-333-6565
Student Employment	217-333-0600
UI Integrate Self-Service Help	217-333-3102