

Industrial Engineering Undergraduate Technical Electives List (Revised 4/24/08)

Complete a minimum of 37 credits, including AT LEAST one course from EACH of the following 5 categories:

A. Operations Research:

- IND E 412 [4cr] Methods of Operations Research [pr: IND E 411]
- IND E 424 [4cr] Simulation [pr: IND E 337 & 411; 411 may be taken concurrently]

B. Stats:

- IND E 321 [4cr] Statistical Quality Control [pr: IND E 315]
- IND E 426 [4cr] Reliability Engineering & System Safety [pr: IND E 315]

C. Production/Operations:

- IND E 430 [4cr] Manufacturing Scheduling & Inventory [pr: IND E 337 & 410; both of which may be taken concurrently]
- IND E 439 [4cr] Plant Layout & Material Handling [pr: IND E 410; which may be taken concurrently]

D. Design:

- IND E 351 [4cr] Human Factors
- IND E 455 [4cr] User Interface Design

E. General Engineering:

- CHEM 260 [4cr] Thermodynamics [pr: CHEM 142, MATH 126, PHYS 121]
- CSE 143 [5cr] Computer Programming for Engineers II [pr: CSE 142]

Additional technical elective courses may be chosen from the list below to reach the minimum 37 credits.

Use the "Request for a Technical Elective Course" to request approval of a course not included below.

Course	No.	Title	Cr.
ACCTG	401	Fed. Income Tax Factors in Business Decisions	3
AMATH	401	Methods in Applied Math 1	4
AMATH	402	Methods in Applied Math 2	4
BIOEN	599E	Intro to Technology Commercialization	4
CERE	421	Ceramic Processing	4
CHEM	260	Thermodynamics	4
CHEM	309	Creativity and Innovation	2
CHEM	355	Biological Frameworks for Engineers	3
CHEM	471	Pulping & Bleaching Processes	3
CHEM	472	Papermaking Processes	3
CEE	306	Construction Engineering	3
CEE	350	Environ. Engr: Water & Air Quality	4
CEE	363	Constructional Materials	4
CEE	391	Graphics Communication & Computer Aided Design	3
CEE	405	Construction Planning & Sched.	3
CEE	410	Traffic Engineering Fund & Surveys	3
CEE	413	Transportation Tech. & Systems	3
CEE	430	Issues in Professional ENGR Practice	3
CEE	461	Bio. Problems in Water Pollution	3:5
CEE	486	Water-Quality Analysis	3
CEE	493	Air-Pollution Source Testing/Equip. Eval.	3
CEE	494	Air-Pollution Control Equip, Design	3
CSE	143	Computer Prog. for Engineers II	5
CSE	373	Data Structures and Algorithms	3
CSE	410	Computer Systems	3
CSE	415	Intro to Artificial Intelligence	5
EE	235	Continuous Time Linear Systems	4
EE	271	Intro to Digital Systems & Computers	4
EE	341	Discrete Time Linear Systems	5
EE	400S	Engineering Robotics I	4
EE	400R	Engineering Robotics II	5
EE	415	Comp.-Aided System Analysis & Design	3
EE	457	Electric Energy Distribution Systems	4
EE	482	Semi-conductor Materials & Devices	4
ENGR	100	Intro to Engr Design (only if taken as Frosh/Soph)	5
ENGR	499	Honors	3
ENVH	457	Industrial & Environmental Noise	3
ESRM	320	Intro to Marketing and Human Resources	5
ESRM	321	Intro to Finance and Accounting	5
IND E / ME	295	Product Dissection	3
IND E	321	Statistical Quality Control	4

Course	No.	Title	Cr.
IND E	412	Methods of Operations Research	4
IND E	424	Simulation	4
IND E	426	Reliability	4
IND E	430	Scheduling and Inventory	4
IND E	439	Plant Layout & Material Handling	4
IND E	455	User Interface Design	4
IND E	470	Systems Engineering	4
IND E	496	Entrepreneurship	4
IND E	498	Special Topics in Industrial Engineering	var
IND E	499	Special Projects (6 credits max)	var
IND E	5xx	All IND E Graduate Level Courses	var
I S	300	Intro to Information Systems	5
I S	480	Intro to Database Mgt	4
MATH	309	Linear Analysis	3
MATH	324	Advanced Calculus 1	3
MATH	326	Advanced Calculus 2	3
MATH	327	Intro to Real Analysis 1	3
MATH	394	Probability 1	3
MATH	395	Probability 2	3
MATH	396	Probability 3	3
MATH	407	Linear Optimization	3
MATH	408	Nonlinear Optimization	3
MATH	409	Discrete Optimization	3
MATH	491	Special Topics-Probability (Intro Stochast Processes)	3
MATH	492	Special Topics-Probability (Intro Stochast Processes)	3
ME	354	Behavior of Engineering Materials	5
ME	355	Manufacturing Processes	4
ME	373	Intro to Systems Dynamics	4
ME	374	Systems Dynamic Analy. & Design	5
ME	403	Material-Removal Processes	3
ME	409	IntroNum. Control/Comp.Aid. Mfg	3
ME	428	Noise Control	3
ME	480	Intro to Computer-Aided Technology	4
ME	490	Naval Architecture	3
METE	464	Extractive Process Analysis	3
MGMT	323	Business Ethics/Corporate Social Responsibility	4
MGMT	401	Leadership, Critical Thinking, & Decision Making	4
MGMT	402	Deal-Making and Negotiations	4
MGMT	403	Motivating High Performance	4
MGMT	404	Organization Development and Change	4
MGMT	413	Labor Law and Collective Bargaining	4

IND E	351	Human Factors	4
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MGMT	422	Protecting Intellectual Property in Global Economy	2
OPMGT	443	Inventory/Materials Management	4
OPMGT	450	Introduction to Project Management	4

PSE	211	Creativity and Society	5
Q METH	450	Spreadsheet Models	4