

Industrial Engineering Course Schedule – Winter 2007

edited 12/8/06

Course #	Course Title	Instructor	Cr.	Days	Time	Room	SLN
IND E 311	Stoch. Modl & Dec. Anlys.	Zabinsky	4	MW F	9:00-10:20 9:00-10:50	MEB 103 MEB 103, MGH 030	14018
<p><i>Stochastic systems analysis applied to industrial engineering problems. Topics include: Markov chains, queueing theory, queueing applications and decision analysis. Prerequisite: IND E 315 & 310.</i></p>							
IND E 315A	Probability/Statistics for Engr.	Mastrangelo	3	MWF	12:30-1:20	EEB 125	14019
<p><i>Application of probability theory and statistics to engineering problems, distribution theory and discussion of particular distributions of interest in engineering, statistical estimation and data analysis. Prerequisite: either MATH 136 or MATH 307.</i></p>							
IND E 316A	Design of Experiments	Kapur	4	TTh	10:30-12:20	MEB 242	14020
<p><i>Introduction to the analysis of data from planned experiments. Analysis of variance and regression analysis with applications in engineering. Prerequisite: IND E 315. Joint with STAT 316A.</i></p>							
IND E 321	Statistical Quality Control	Mastrangelo	4	TTh	2:30-4:20	MGH 289	18437
<p><i>Design of quality control and assurance systems. Statistical Process Control (SPC) design and implementation. Control charts for attributes and variables. Process capability analysis and process improvement techniques. Statistical tolerance design. Quality management and recent developments. Prerequisite: IND E 315.</i></p>							
IND E 424A	Simulation	Beamon	4	MW	2:30-4:20	MGH 044	14021
<p><i>Discrete-event simulation methodology emphasizing model formulation and construction with modern simulation languages and environments, statistical basis for evaluating model results, design and management of simulation projects. Application to manufacturing, retail, and service industries. Prerequisite: IND E 337 & 311. IND E 311 may be taken concurrently.</i></p>							
IND E 494A	Design in Manufact. Firm	Storch	4	MWF F	11:30-12:20 1:30-4:20	SIG 224 AND 010	14022
<p><i>Engineering design in manufacturing firms is presented. Topics include design methodology, concurrent engineering, and project management. Focus on the relationship between product design and manufacturing (design for production and assembly). Prerequisite: IND E 337; T C 333.</i></p>							
IND E 498A	Introduction to Systems Engr.	Vaughan	4	MWThF	4:30-5:20	LOW 216	18694
<p><i>Concepts of system approach, system hierarchies, functional analysis, requirements, trade studies, and other concepts used to define and integrate complex engineering systems. Prerequisite: CSE 142. Offered: jointly with A&A).</i></p>							
IND E 499A	Special Projects in IE	Staff	2-5	by arrangement			14023
IND E 499B	Honors – Special Projects	Staff	2-5	by arrangement			14024
IND E 515A	Fund. of Optimization	Rockafellar	5	TTh	8:30-9:50	BAG 331A	14025
<p><i>Maximization and minimization of functions of finitely many variables subject to constraints. Basic problem types and examples of applications; linear, convex, smooth, and nonsmooth programming. Prerequisite: linear algebra and advanced calculus. Joint with AMATH 515A.</i></p>							
IND E 518A	Seminar in Mfg. Management	Ramulu	1	Th	3:30-4:20	LOW 202	14026
<p><i>Current topics and advances made in manufacturing and management. Topics presented by invited speakers from academia and industry. Emphasis on the multidisciplinary nature of manufacturing and management. Joint with M E 518A. Also offered through EDGE.</i></p>							
IND E 524B	Robust Design/Quality Engr.	Kapur	3	TTh	2:30-3:50	LOW 216	14029
<p><i>Introduction to robust design and quality engineering. Applications of design of experiments for product and process design optimization. Experimental design using orthogonal arrays and linear graphs. System models using Chebyshev's orthogonal polynomials. Robustness in design and quality improvement for complex systems including Taguchi methods for quality engineering. Prerequisite: IND E 316 or equivalent. Also offered through EDGE.</i></p>							
IND E 545D	User-centered Design	Turns	4	TTh	3:30-5:20	LOW 111	14031
IND E 545E		Turns	4	W	6:00-9:50pm	BLM 305	14032
<p><i>Explores the user-centered design paradigm from a broad perspective, emphasizing how user research and prototype assessment can be integrated into different phases of the design process. Students learn to think like a user-centered designer and carry out activities that are key to user-centered design. Offered: jointly with T C 518.</i></p>							
IND E 552	Enterprise Control 1	Kohn	3	MW	1:30-2:50	MEB 243	14033
<p><i>Provides students with principles, designs, techniques and algorithms for synthesizing real-time control of enterprise processes, using hybrid systems theory. Application areas include supply-chain flow control, logistics decision schemas, transportation systems, dynamic reconciliation procedures, minimum cost production, and maximum profit price/ordering strategies.</i></p>							
IND E 566	Intro. to Ergonomics	Stewart/Johnson	3	Th	9:30-12:20	HSB BB1602	14034
<p><i>Basic principles of ergonomics in work environment applied to problems of worker and management. Topics include measurement of physical work capacity, problems of fatigue and heat stress, applied biomechanics, worker-machine interactions and communication, design of displays and controls. Prerequisite: basic human physiology or permission of instructor. Joint with ENV H 566</i></p>							
IND E 592A	IE Graduate Seminar	Zabinsky	1	T	1:30-2:20	MEB 245	14035
<p><i>Credit/no credit only. Topics of current interest in industrial engineering. Prerequisite: graduate standing in Industrial Engineering or permission of instructor.</i></p>							
IND E 599E	Special Topics in IE	Staff	1-5	by arrangement			14037
IND E 599B	Stochastic Processes	Ghate	3	TW	10:30-11:50	MGH 287	14036
<p><i>Introduction to non-measure theoretic stochastic processes. Topics include conditional expectation, Poisson processes, renewal processes, and discrete time Markov chains. Applications in engineering, economic, natural, and social systems will be considered.</i></p>							
IND E 600A	Independent Study/Research	Staff	1-10	by arrangement			14038
IND E 700A	Master's Thesis	Staff	1-10	by arrangement			14039
IND E 800A	Doctoral Dissertation	Staff	1-10	by arrangement			14040