Industrial Engineering Course Schedule – Autumn 2009 *edited 05/28/09*

Course #	Course Title	Instructor	Cr.	Days	Time	Room	SLN
IND E 101	**Intro. Indust. Engr.**	Heim	1	M	3:30-4:20	MGH 241	14695
Basics of industrial cost analysis and accounting. Application of interest computations to engineering decision making. Analysis of engineering alternatives based on use of interest computations, valuations, depreciation, and cost estimates in process and product manufacturing.							
IND E 315A	**Probability/Stats. for Engr**.	Mastrangelo	3	MW	1:30-2:50	KNE 220	14697
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.							
IND E 337A	**Intro to Manufact. Systems**	Storch	4	TTh	2:30-5:20	MEB 103	14698
Description of manufacturing systems. Includes discussion of current trends in manufacturing. Introduces process flow analysis, manufacturing organizations including job-shop, assembly lines, and group technology, manufacturing inventory philosophies (just-in-time, MRP, OPT), work environment, and work simplification.							
IND E 410	**Linear Programming**	Ghate	4	MW	9:30-10:50	MEB 238	14699
				F	9:30-11:20	MGH 044, MEB 248	
Modeling and optimization of linear network problems. Topics include: optimization of linear systems, mathematical model design, simplex method, primal-dual algorithms, parametric programming, goal programming, network problems and algorithms, and PERT/CPM. ***Prerequisite:*** *either MATH 136 or MATH 308; CSE 142*							
IND E 439	**Plant Layout & Material Handling**	Beamon	4	TTh	10:30-12:20	MGH 251	14700
Design of new or expanding industrial facilities. Consideration of work organization and layout. Study of basic design of plant systems, including plumbing, electrical, HVAC, illumination, acoustics, and waste handling. In depth coverage of material handling system design and equipment choices. Prerequisite: IND E 310.							
IND E 455A	**User Interface Design**	Nilsen	4	MTWF	12:30-1:20	MEB 248	19579
				F	2:30-4:20	MGH 044	
Design oriented to cover fundamentals of user interface design; models on human computer interaction, software psychology, input devices, usability, cognitive and perceptual aspects of human-computer interaction, advanced interface, and research methodologies are discussed. ***Offered jointly with TC 455A.***							
IND E 498	**IE Apps to Healthcare Systems**	Heim, Kuttner	4	MW	1:30-3:20		19592
IND E 499A	**Special Projects in IE**	*Faculty*	2-5	*by arrangement*			14701
IND E 499B	**Honors – Special Projects**	*Faculty*	2-5	*by arrangement*			14702

IND E 508	**Stochastic Processes in Engr.**	Liu, Hui	3	MW	1:30-3:20	CMU 230	19824
Non-measure theoretic introduction to stochastic processes. Topics include Poisson processes, renewal processes, Markov and semi-Markov processes, Brownian motion, and martingales, with applications to problems in queuing, supply chain management, signal processing, control, and communications. Prerequisite: E E 505. Offered: jointly with E E 508.							
IND E 513	**Linear Opt. Models in Engr.**	Zabinsky	3	MW	4:00-5:50	LOW 202	14703
Advanced formulation techniques to expand applications of linear programming to large-scale models. Appreciation of role of optimization models in engineering applications through introduction of techniques such as decomposition. Individual engineering projects. Prerequisite: IND E 310 and MATH 308 or permission of instructor.							
IND E 518	**Seminar in Manufacturing Mgt.**	Ramulu	1	W	3:30-4:20	LOW 216	14705
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 Offered: jointly with M E 518.							
IND E 524	**Robust Design & Quality Engr.**	Kapur	3	TTh	11:30-12:50	LOW 206	14707
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.							
IND E 537A	**Intro to Mfg. Systems**	Storch	3	TTh	2:30-5:20	MEB 103	14709
Graduate-level equivalent to IND E 337.							
IND E 564	**Health & Safety Hazards in Ind.**	Camp	2	F	10:30-12:20	HST T498	14710
Develops skills in occupational health and safety hazard recognition in a variety of important northwest industries. Focuses on process understanding and hazard recognition skills during walk-through inspections of several local facilities, stressing a multidisciplinary approach. Offered: jointly with ENV H 564.							
IND E 591	**Graduate Seminar**	Zabinsky	1	T	1:30-2:20	MEB 248	14711
Credit/no credit only. Topics of current interest in industrial engineering. Prerequisite: graduate standing in Industrial Engineering or permission of instructor.							
IND E 595	**Glbl Int Sys Engr (GISE)**	Mastrangelo	5	Th	3:30-8:20	LOW 206	14712
Includes systems engineering, project management, finance, economics, and seminars. Concludes with a team-based design project involving a large scale system. The project enables students to apply their modeling skills to a real-world problem and present their results to a panel comprised of practitioners, academics, and clients. Offered: jointly with A A 595.							

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IND E 599A	**Understanding Mgt**	Mastrangelo	5	T	4:00-8:20	LOW 202	14714
To be an effective engineering lead, you need to be able to effectively communicate with decision makers. Engineers need to learn that language. This course will cover the fundamentals of finance & accounting, marketing, strategy and business communication as well as the skill of identifying and influencing the key decision makers.							
IND E 599G	**Analytical Methods in Human Factors & Transportation**	Boyle	3	MW	2:00-3:20	MOR 225	14717
IND E 600A	**Independent Study/Research**	Faculty	1-10	by arrangement			14718
IND E 700A	**Master's Thesis**	Faculty	1-10	by arrangement			14719
IND E 800A	**Doctoral Dissertation**	Faculty	1-10	by arrangement			14720

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