ENG ME 266 Manufacturing Operations Management

2008-2009 Catalog Data:

ENG ME 266 Manufacturing Operations Management Introduction to managerial decision-making from product concept to finished good. Topics include manufacturing strategy, forecasting, DFX, resource planning, project scheduling, and supply chain design and management. Emphasis placed on understanding topics as interdependent components of a lean manufacturing system. Underlying management science theory is supplemented by plant tours, lectures by industrial practitioners, and a semester project. 2 cr.

Class/Lab Schedule: 2 lecture hours per week, 1 lab hour per week

Status in the Curriculum: Required in the Manufacturing Program

Textbook(s) and/or Other Required Material: Nahmias, Steven. "Production and Operations Analysis", 5th Edition, McGraw-Hill, 2000

Coordinator: William Hauser, Adjunct Assistant Professor, Mechanical Engineering

Prerequisites by topic:
1. Calculus II

Goals:
1. To introduce students to issues faced by operations managers.
2. To teach students how to use elementary models and methods to facilitate managerial decision-making for complex manufacturing systems.
3. To provide students with exposure to, and an understanding of, current industrial practice in the areas of management science and operations research.

Course Learning Outcomes:
As an outcome of completing this course, students will:

i. Develop a knowledge of managerial decision-making in production operations
ii. Gain an understanding of the interdependent components of a lean manufacturing system.
iii. Learn how to use elementary models and methods to facilitate managerial decision-making for complex manufacturing systems.
iv. Obtain exposure to, and an understanding of, current industrial practice in the areas of management science and operations management.

Course Learning Outcomes mapped to Program Outcomes:

Program:	a	b	c	d	e	f	g	h	i	j	k	l	m	n
Course:	iii	iii	iv	ii	ii	iv	iv	i, ii, iv	i, iv		iii			
Emphasis:	5	4	1	2	5	1	4	3	3		5			

Topics (time spent in weeks):

1. Data smoothing, forecasting, and evaluation of error (1)
2. Methods for forecasting demand (2)
3. Aggregate planning, use of linear programming to optimize production plans, & inventory control subject to known demand (4)
4. Explosion of the bill of materials (1)
5. Supply chain management, the transportation problem (1)
6. Inventory control subject to uncertain demand (2)
7. Process fundamentals, Product/Process Matrix, & Plant Tours (2)

Contribution of Course to Meeting the Professional Component:
Engineering Topics: 100%

Status of Continuous Improvement Review of this Course:
Prepared by: William Hauser **Date**: 04/03/2009