

# IME 4160

## OPERATIONS CONTROL

### Course Syllabus Fall 2010

**2007-2009 Catalog Data:** A comprehensive introduction to the terminology, systems, and procedures used in operations management.

**Text:** Production and Operations Analysis. Steven Nahmias, 6<sup>th</sup> Edition. McGraw-Hill Irwin. 2009.

**Reference:** Integrated Production and Inventory Control. Bedworth and Bailey. Wiley and Sons.

**Coordinator:** Dr. Bob White, Professor, Industrial and Manufacturing Engineering. Office in Parkview Campus, E-216. Phone 276-3379.

**Prerequisites by topic:**

1. Probability and statistics.                   IME 2610 or equivalent.
2. Linear programming.                       IME 3110 or equivalent.
3. Learning Curves, cost accounting   IME 2010 or equivalent.
4. Computer simulation.                      IME 3300 or equivalent.

Course Objectives	Performance Criteria (department) <sup>1</sup> Course	ABET/TAC Outcomes <sup>2</sup>
1. Demonstrate an ability to design and conduct experiments and analyze and interpret data.	(B3) Forecasting lab assignment.	b
2. Apply industrial engineering tools to successfully model and solve complex problems.	(K3) Successfully formulate and solve the linear programming portion of the aggregate planning lab assignment.	k
3. Work together in a team to model an operations control system and effectively communicate the results in a written report.		
4. Develop the skills necessary to be able to select and use engineering tools to solve problems.		

**Performance Criteria<sup>1</sup>:** IME performance criteria may be found at <http://www.wmich.edu/ime>

**ABET/TAC Outcomes<sup>2</sup>:** Outcomes may be found at <http://www.abet.org/>

\* results tracked in ABET course notebook

**Topics:**

Week 1-4      Analysis of forecasting systems.  
 Week 5,6      Aggregate planning systems  
 Week 7-11     Deterministic and stochastic inventory systems  
 Week 12-14   Sequencing and scheduling systems

**Schedule:**

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<b>WEEK</b>	<b>TEXT MATERIAL</b>
1	Chapter 1
2	2
3	2
4	2
5	3
6	3
7	4
8	4
9	5
10	5
11	6
12	7
13	8
14	8

This is an approximate schedule. The schedule may vary as the semester progresses. Changes will be discussed in class.

**Evaluation:**

Midterm Exam	25%
Final Exam	25%
Labs	35%
Class Participation and Homework	15%

A student must pass both the lecture and lab portions of the course with a passing grade in order to pass the entire course.

**Lab:**

Lab assignments will be made periodically. These assignments will provide an opportunity for students to analyze open ended engineering design problems applying the principles learned in the lectures. All lab assignments will be done using appropriate computer programs. Comprehensive lab reports will be required. These lab reports will be graded on technical content, presentation, and correct syntax and grammar. A team lab project will be given later in the semester. Students must demonstrate sufficient mastery of the material in their individual labs to be allowed to participate in

the team project.

### **Grading Scale**

The following are the APPROXIMATE points required for the corresponding grades. Actual points required may vary slightly.

A	800	C	640
BA	760	DC	600
B	720	D	560
CB	680		

Extra credit points will apply only if the point total from all other sources is 560 or greater.

### **Fundamentals of Engineering Examination:**

All students are required to take the fundamentals of engineering examination, which will be given on October 30 in Kalamazoo. This exam is an integral part of this class and you will be not given a grade in IME 4160 unless you take this exam. If you pass this exam, you will receive a letter grade increase in your grade. If you fail the exam, you will receive a letter grade decrease in your grade. You are required to register for the exam yourself. Visit [NCEES.org](http://NCEES.org) for details.