

Dillard College of Business Administration

Syllabus: Operations Management MGMT 3453

Tuesday and Thursday 8:00 a.m. and 9:30 a.m.

Dillard Building 178

Spring Semester 2020

Contact Information

Instructor: Dr. Mike Patterson, Professor of Management

Office: Dillard Building 203

Office hours: Wednesday 9:00 a.m. to 11:00 a.m., Tuesday and Thursday 9:30 a.m. to 12:30 a.m.

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Course Materials

Jacobs and Chase, Operations and Supply Management, 15th ed., McGraw-Hill,
ISBN: 9781259666100. Recommended.

Patterson, Management Science Programs for the IBM Personal Computer, 3rd ed., Kendall-
Hunt Publishing, ISBN: 0-7872-6792-9. Required

Course Description

Study of concepts, issues and techniques for systems of production. Development of a basic understanding of the manufacturing function in industry.

Course Prerequisites

Junior or Senior standing or consent of Department Chair and
MATH 1203 or MATH 1233

Learning Goals

I. General Learning Goals:

- Students will practice problem solving and decision-making skills during in-class discussion. Assessment will occur on both homework assignments and course examinations.
- Demonstrate a broad understanding of the functional areas of a business entity.
- Develop analytical and critical thinking skills.

These general learning goals are among those established by the Dillard College of Business Administration. General learning goals represent the skills that graduates will carry with them into their careers. While assessing student performance in obtaining these general learning goals, the Dillard College is assessing its programs. The assessments assist us as we improve our curriculum and curriculum delivery.

- II. Course Specific Learning Goals: Upon completion of the course students will have a basic knowledge of and understanding of the following database components, concepts and applications.
- A general understanding of the basic concepts, issues and techniques of the production.
 - Understand the conceptual foundations of cost, volume, and profit analysis. Analysis from a capacity planning and supply-chain management perspective.
 - Analyze various goods and service sector issues as they relate to location analysis, facilities design, work measurement and logistics in various production environments including product, process and project layouts.
 - Explore the role of various operations research tools, such as linear programming, PERT, break-even analysis, transportation and inventory control models in the decision making process.
 - Analyze and compare the different prevailing operations theories, including lean manufacturing, just-in-time, total quality management and the theory of constraints.

Course Policies

Attendance Policy: Regular attendance is expected. See the university catalog for the University Class Attendance Policy. Each meeting of the class will run as scheduled. So as not to disturb the class, you are not to walk in and out of the classroom during the class hour except for an emergency. As a courtesy to all concerned, please silence all pagers and telephones when entering the classroom.

Students are required to attend every scheduled class session. Each unexcused absence which exceeds six (four in summer school) will result in a two point deduction in the end of semester average grade. Unexcused absences are defined as follows:

1. A student fails to attend class and has no approved documentation for the absence.
2. A student arrives after the class roll is taken, which will generally be recorded no earlier than 10 minutes after the scheduled start time for the class.
3. A student leaves the class room before the class session is dismissed.

Excused absences for university related activities, medical reasons, and traffic related incidents must be supported by appropriate documentation.

No electronic devices are allowed in the class. This includes computers, phones, headphones etc. If such devices are observed during class, student will be ask to leave the classroom which will be recorded as an unexcused absence.

Other Related Policies

If a student misses a regularly scheduled exam, the student must immediately notify the instructor of his/her intention to schedule a make-up exam. There is no other recourse available for a missed exam in the class. The exam dates are tentative and subject to change.

Grading and Evaluation:

Homework Problems - Each is a requirement of the class. You are required to complete 12 of the 17 assignments. Each homework assignment must be turned in on time. All homework is due in two weeks of the completion of lectures (one week for summer semester) related to the homework topics, with the exception of homework assigned at the end of the semester. Due dates for end-of-semester homework will be announced. A one-point deduction from the semester average will be calculated at the end of the semester for each missing or late homework assignment.

Grades will be determined on the basis of the total points earned on three 100-point exams, and the 200 point comprehensive final and any missing or late homework assignments. A calculator may be allowed for the exams and quizzes. The calculator must be a regular hand-held calculator. No other electronic devices are allowed.

Letter grades will be given according to the following scale:

- A 450 - 500 points
- B 400 - 449 points
- C 350 - 399 points
- D 300 - 349 points
- F below 300 points

You will assign yourself an ID number for record keeping in this class when you take the first examination. Please record your number for future reference. I do not return examinations to students. You may look at your examination in my office. Due to the number of students and examinations in my classes, I ask that if you wish to review your examination, you do so within two weeks of taking the examination.

- The results of your exams and homework will be posted periodically on a bulletin board.
- It is the responsibility of the student to assure that homework is being received and proper credit is given.
- Semester grades will be reported through normal University channels with no exceptions.

Course Content and Outline	Class Sessions	Text Chapters
1. Nature of Operations Management	2	1-2
A. Functions of Business		
B. Current Issues in Operations		
2. Cost Volume Profit Analysis	3	pp. 153-155
A. Fixed Cost		Appendix C
B. Variable Cost		
C. Revenue		
D. Break Even Analysis		
3. Capacity Planning	3	5
A. Concept of Capacity		
B. Manufacturing Environments		

Course Content and Outline	Class Sessions	Text Chapters
C. Master Production Scheduling		
Exam # 1		
4. Location of Facilities	3	15
A. Location Decision Making		
B. Location Factors		
C. Market and Material Considerations		
D. Break-Even Analysis		pp. 153-155
E. Transportation Problem		
F. Activity Based Costing		pp. 721-723
5. Facilities Design	2	8, 9
A. Layout of Production Operations		
B. Product vs. Process Layout		
C. Advantages and Disadvantages of Layouts		
D. Continuous, Intermittent, Fixed Position		
7. Project Management	2	4
A. Concepts of Projects		
B. PERT and CPM		
8. Linear Programming	3	pp. 691-710
A. Graphic Approach		
B. Simplex Method		
C. Production Planning Problems		
D. Capacity Planning Problems		
Exam #2		
9. Production and Inventory Control	2	
A. Basic Principles and Concepts		
B. Production Scheduling		
C. Labor Scheduling		
D. Overall Scheduling		
E. Master Production Scheduling		
10. Inventory Control/Order Point/Order Quantity	3	20
A. EOQ		
B. Quantity Discounts		
C. Investment Considerations		
D. Simulation of Inventory		
11. Material Requirements Planning	2	21
A. MRP I and MRPII		
B. Inventory Transactions		
C. Planning Systems		
Exam # 3		
12. Just-In-time	1	7,14
A. Planning under a JIT Environment		

Course Content and Outline	Class Sessions	Text Chapters
B. Push vs. Pull Systems		
C. Management Philosophy		
13. Theory of Constraints	1	23
A. Introduction		
B. Concepts		
C. TOC vs. Cost Accounting		
14. Quality Movement	1	12
Total Quality Management		
Final Examination Saturday, May 9	8:00 a.m. to 11:00 a.m.	

HOMEWORK ASSIGNMENTS

Number	Assignment
1	Beta Manufacturing (Handout)
2	Problem 2 (Handout)
3	Clutch Engineering (Handout)
4	Location Problem 1 (Break-even) (Handout)
5	Location Problem 2 (Break-even) (Handout)
6	Problem 1 (Handout)
7	Problem 2 (Handout)
8	Page 366, Problem 8 Textbook
9	Pert Problem (Handout)
10	Page 734, Problem 4 Textbook
11	Page 733, Problem 3 Textbook
12	Billy Frank Haywood Problem (Handout)
13	EOQ Problem 1 (Handout)
14	EOQ Problem 2 (Handout)
15	Simulation Run 1 (Handout)
16	Simulation Run 2 (Handout)
17	Simulation Run 3 (Handout)

Academic Integrity:

With regard to academic honesty, students are referred to the "Student Honor Creed" of Midwestern State University Undergraduate Catalog.

Americans with Disabilities Act:

This class follows the guidelines suggested by Disabilities Support Services for those students who qualify for disability services. See Midwestern State University Undergraduate Catalogue, Services for Students with Disabilities.

Syllabus Change Policy:

This syllabus is a guide for the course and is subject to change.

Additional Information:

Operations Homework Notes

Homework assignments for this class are located on the Dillard server drive Y. These files may be accessed in the Dillard computer labs on the first and third floors (146, 306 and 335).

Computer Icon

coursework(Y:)

Mike Patterson

homeworkdocuments

opshomeworkmaster.doc Homework Documents

- You are provided with a set of blank documents for homework.
- These homework assignments are very similar to the types of problems which will be on the computer-based part of the comprehensive final examination.

Homework Check Figures	
1 Part I A	BE\$ = 90,000
2	
3 Part I	BE Units > 21,000
3 Part II	BE Units > 24,000
4 Part I	IP > 10,500 & < 50,000
4 Part II	IP > 52,000 & < 150,000
5 Part	200 Best Outside
	300 Best Inside
5 Part II	IP between 200 & 300
6	Payoff 6350
7	Payoff 7851
8	Expected Completion = 26.83
9	Expected Completion = 39
10	Payoff .68
11	Payoff 2140
12	ROI = 416.875
13	ROI = 1.37 (137%)

14	Payoff .12 (12%)
15	Cumulative Cost between 75,000 & 85,000
16 & 17	Answers will vary

Software:

mgmt16.exe software for MSU computer labs and older computer

mgmt32.exe software for newer computers with windows 32 and 64 bit operating systems

mgmtsci.exe recommended software for newer computers 32 and 64 bit operating system

If your disk has only one exe file (mgmtsci.exe this is your program to run.

Operations Management Review Session for Final

1. Computer Part

a. Break-even Analysis – Cost Volume Profit Analysis

Be prepared for any kind of problem except a multi-product problem (option 2 on your diskette)

b. EOQ type of problem with the possibility of a discount.

Note: I may ask some discussion questions or some that might require a calculator. There will not be a simulation problem.

c. EOQ with a discount

d. Transportation Model (Balanced vs. Unbalanced)

e. PERT

f. Linear Programming Model

2. Multiple Choice

a. Concepts, terms, philosophies

1. Theory of Constraints
2. Just-in-Time
3. Total Quality Management
4. Materials management including cost calculations
5. Functional areas of business
6. Bills of materials & routing
7. All videos shown in class
8. Project Management
9. Drum Buffer Rope
10. Push vs. Pull
11. Ohno, Deming Goldratt, Kaplan

b. Quantitative

1. Cost, volume, profit including graphs

2. Cycle times
3. Work measurement
4. EOQ/reorder point calculations – no simulation
5. Scrap factor analysis
6. Gantt charts and when will an order ship
7. Linear programming 7 formulation of LP problem
8. Routing calculations
9. Bottlenecks
10. Transportation model
11. Capacity concepts
12. Lead time Calculations

Further suggestions for preparing for the final exams on Saturday, May 9th.

COMPUTER EXAM (Group one begins at 8:00am)

1. Be sure that your disk is working. Do not forget your disk on Saturday; you cannot take the computer part of the examination without the disk.
2. Practice doing some of the problems in the computer lab. This is particularly important if you have done your homework on your home computer. This is suggested so that you have some experience in the computer lab and know the basic workings of the lab.
3. You **MUST** show the formulation of the problem to demonstrate how you solved the problem. If you write only the answer, you will receive no credit. You must show the formulation and the answer to receive credit. For example in linear programming, you must show the objective function and the constraints, as well as the answer. For the PERT problem, you must show your input as well as the answer to the problem. The same for the transportation, inventory control and break-even models. Show the input and output. Show me what I need to see to be able to give you partial credit. Remember, the answer alone will result in no credit for that problem.
4. Use the first review sheet to study for the final exam. I have listed the problem types that will be on the exam.

MULTIPLE CHOICE (Group two begins at 8:30)

1. Terms, concepts, tools, philosophies. You need to review the entire semester class notes for general questions.
2. Quantitative Topics. Review the topics listed on the first review sheet. I have identified the quantitative topics that will be covered on the multiple choice examination. You should concentrate your preparation for the quantitative part of the exam to the topics shown.

Concealed Carry Policy

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage concerning [concealed carry Link](#).