

GOVERNORS STATE UNIVERSITY
College of Business and Public Administration

GSU ARCHIVES
MGMT 340
S/S 00

Course Title:	MGMT 340: Production and Operations Management (Section A, Reference # 305415)
Session:	Spring/Summer 2000 (Block 3)
Time:	7:30-10:20 Monday and Wednesday
Instructor:	Dr. David Parmenter
Office:	C3356
Phone:	(708) 534-4961
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Office Hours:	5:30-7:30 MW and by appointment
Catalog Description:	Introduces operations management, including examples from both manufacturing and services. Topics covered include product and service design, process design, forecasting, inventory management, scheduling, and logistics, with particular emphasis given to quality management and process improvement.
Prerequisites:	STAT 361 or its equivalent
Textbook:	<u>Operations Management: Customer-Focused Principles (6th Ed.)</u> by Schonberger and Knod. The Student Workbook is optional. <u>Prosim III for Windows (3rd Ed.)</u> by Chu, Hottenstean and Greenlaw.

DESCRIPTION:

This course will cover the management of the operations function, the function that is responsible for converting inputs, i.e. raw materials, labor, equipment, etc., into outputs, i.e. products or services that a company sells. This is a crucial function, and perhaps *the* crucial function, for any business firm. As an introductory survey course this class will briefly cover many different techniques and concepts applicable to operations. Particular attention will be paid to quality management. Note that although the title of the course includes the word "Production" we will pay a lot of attention to the management of operations in service business, e.g. restaurants, banks and hospitals.

Note also that the title of this course also includes the word "Management." This course will not be an endless stream of "number-crunching." It is a management course. Thus we will also cover various behavioral concepts, e.g. empowerment, team-building, motivation, etc. in the context of operations.

As a core business requirement this course is not designed solely for operations management majors. Thus significant emphasis will be given to the ways in which operations and the other business functions interact. In theory you are being trained to become entry level managers. As such you will need some familiarity with all of the various business functions. The operations

function interacts closely with almost all of the other major functions. Thus, regardless of your concentration, you need to know how the operations function works.

During most of the trimester the class will consist of two parts – a lecture and a group project. Generally the first half of each class meeting will be conducted using a standard lecture format. In order to get the most out of these classes you should read the assigned chapter before the lecture and ASK QUESTIONS. Also, since many of you have work experience that relates to some of the topics covered here, I would hope that we could get some discussions going. The second half of each class will generally be set aside for you to work together on your group project, an operations management simulation (discussed below). Toward the end of the trimester, after the group project is completed, the entire class will involve lecture.

COMPETENCIES:

After completing this course you should be familiar with most of the concepts and techniques involved in turning an idea into a finished good or service. You will be able to speak intelligently about topics such as design of the product or service, design of the production system, sales forecasting, inventory management, production scheduling, quality management, supply chain management and just-in-time manufacturing. I will stress basic principles of operations, principles that are true (or should be) for virtually any firm. An understanding of these basic principles should prepare you to tackle an operations problem at a real firm.

Particular emphasis will be given to the concept of “flow.” This concept may apply either to parts and raw materials flowing through a manufacturing facility or to customers flowing through a service facility. In either case, effective flow tends to reduce inventory, costs and lead time and to increase quality and customer service.

EVALUATION:

Your grade in this course will be based on the following assignments.

Group Project	40%
(Performance = 30%)	
(Participation = 10%)	
Midterm Exam	30%
Final Exam	30%

Although the final results will be curved if necessary, you should expect a curve that follows the standard 90-80-70-60 format.

GROUP SIMULATION PROJECT:

The class will be divided up into groups of from three to five people. Each group will act as the management team for a fictional manufacturing firm which operates in the business environment defined by the simulation package PROSIM III. On a daily basis you will have to make decisions

such as what raw materials to buy, what parts to buy, what parts and products to make, how many people to hire or lay off, who to train, and how much to invest in quality improvements and equipment maintenance. Each week you will hand in your decisions to me. I will input them to the PROSIM program which will tell you how your decisions turned out. PROSIM will track your performance throughout the trimester. I expect you to feel somewhat (very?) overwhelmed at first. However, as the trimester goes on and you gain more experience, both with the simulation and with various applicable operations management methods, your performance will improve. You will be given a lot of class time in which to make your decisions. However, expect to have to meet outside of class as well.

I have four learning goals in mind for this simulation exercise. First, PROSIM will force you to make some of the same decisions that real operations specialists make (although the PROSIM environment is rather simplistic compared to the real world). Making these decisions each week will drive home some of the operations concepts covered in the class. Second, you will gain experience solving a difficult quantitative problem. PROSIM will overwhelm you at first – there are simply too many factors to keep track of. As the trimester proceeds, however, you will “figure it out” (the PROSIM environment really is simplistic enough to figure out, although it won’t look that way to you at first). Developing proficiency in an exercise that is extremely difficult at first will give you more self-confidence in your quantitative decision-making skills, self-confidence that will help you in some of your advanced courses and in your career. Third, PROSIM will force you to work as a team. Team-building skills are becoming more and more important in the business world. And fourth, and probably most importantly, PROSIM’s wealth of data will enable you to “back up” your decisions with intelligent quantitative analysis. As we go through the trimester I want to see you get better and better at using this data to perform the analysis that leads to good decisions. Students (and American managers in general) tend to get into the habit of “eyeballing” the best decision rather than doing the rigorous quantitative analysis required. Admittedly, eyeballing is sometimes necessary and doing it well is a valuable managerial tool. However, in PROSIM, where the necessary data exists and where the environment has been simplified such that “the right answer” can often be determined, I expect to see less and less eyeballing and more and more analysis as the trimester proceeds. **I don’t want to hear students saying “I think we should do X.” I want to hear them saying “I think we should do X and here are the calculations that prove that X is a good thing to do.”**

The “Performance” portion of your grade will be based on how well your firm does (note that the overall goal of PROSIM is to meet demand at minimum cost) and how well your group performs on various PROSIM homework assignments that will be given during the course of the trimester. Of particular importance is how well you explain the logic behind your weekly decisions. You need to successfully demonstrate to me that you “have a plan” and aren’t simply picking numbers out of the air each week. Decision tools constructed using a spreadsheet are particularly helpful here. Automating the decisions that you must make on a weekly basis will achieve several goals. First, the act of designing the spreadsheet correctly will force you to think more carefully about just how the PROSIM environment works. Second, it will speed your weekly decision making, allowing you to make better decisions. And third, it will impress the grader. In the past the most successful groups have made use of a laptop computer in class. If your group does not have access to a laptop you should feel free to leave the classroom and go to the GSU computer lab

during class on days when we are working on PROSIM.

I will give you more details concerning the performance outcomes that I measure each week after you have seen enough of PROSIM to get a basic feel for it. Every member of the group will receive the same grade for "Performance."

The "Participation" portion of the grade will be based on the scores that you receive when graded by the other members of your group. This grading will be done at the end of the trimester. Grading should include both quality and quantity of participation. It is your responsibility to keep your group happy. If you must miss class, for instance, call someone in your group to find out what you missed and what your next assignment is. If you have to miss several classes and feel that you aren't pulling your own weight, volunteer to do some extra group work outside of class. Teamwork and team building are by nature integral parts of this exercise. If you don't participate, or if you don't make a serious effort to get along with your colleagues, you seriously hurt your team's ability to perform. If everyone on your team puts a solid effort into both learning the relevant operations management methods and solving any personality problems that come up it is almost a certainty that your team will perform well. Therefore, in order to encourage full and enthusiastic participation by all, I am adding a little twist to how the participation scores are analyzed when it comes time to give the final grades for the course. **If your average participation score is 60% or above, I will simply give you that score to account for 10% of your grade. However, if your average participation score is less than 60% YOU WILL FAIL THE COURSE. Remember, participation counts.**

Note that there will be a final exam question involving PROSIM. Thus every student will need to know how to do every basic PROSIM-oriented calculation. You simply can't afford to slack off and let your teammates do all of the work. I will provide a PROSIM problem handout (including correct answers) that will show you the types of problems that are likely to show up on the final exam.

EXAMS:

There will be two exams, one midterm and one final. The exams will be partial credit with about 30% based on quantitative problem solving and about 70% based on essay answers. Prior to covering each chapter I will give you a study guide specifying important topics for that chapter and questions that you should be prepared to answer. The test questions will be drawn primarily from these study guides. Thus it is worth it to pay attention to the study guides as you study each topic. If your love of learning is insufficient to make you take good notes as you study I will give you another one - the tests will be "open notes" (you can't use the text but you can use your notes). Note that simply regurgitating information from the text does not generally constitute a good answer (and copying word-for-word from the text constitutes plagiarism). Good answers will incorporate ideas from the text, ideas from the lectures, and ideas drawn from your own thinking and experience. Note also that good answers to a particular question will generally involve material from multiple chapters, not just the chapter corresponding to the study guide that the question came from. Your notes must be your own work. Do not photocopy anything from the text or from another student.

Try to avoid copying word-for-word from the text when you take notes. Putting ideas in your own words increases your understanding. It also helps you to avoid plagiarism (i.e. when you copy directly from the text to your notes and later copy directly from your notes to answer a test question). Note that plagiarism is not only unethical but that it also tends to reduce the quality of your answers. I will admittedly not go through each test answer with a fine-toothed comb trying to find uncited quotations from the book. However, direct quotations from the text have two problems. The first is that these quotations simply sound “wrong” because they don’t have the same style as the portion of the answer that you wrote in your own words. Second, and possibly even more crucial, is the fact that it’s your job to convince me that you understand what you’re talking about. And direct quotes, although generally technically correct, are frequently worded in such a way that I won’t be convinced of your understanding.

For instance, on a previous trimester’s final exam, there was a question in which the students were asked to define Material Requirements Planning (MRP). Briefly, MRP is a software package that calculates the requirements for parts (and raw materials and subassemblies) in terms of both quantity and timing. An analyst can use MRP’s recommendations to make sure that he orders the right quantity of each part at the right time, allowing the firm to have just what it needs to be able to assemble the required number of finished products on schedule. Instead of mentioning, in nontechnical language, that MRP’s basic goal is to plan for the ordering of parts, several students answered this question with a technical quote from the book involving the phrase “support the MPS.” Although this answer was indeed correct, I simply didn’t believe that the students really knew what “support the MPS” meant. Thus they lost points.

HOMEWORK:

There will not be any assigned and graded homework. However, as mentioned above, I will suggest specific topics to focus on and will provide you with potential test questions in the chapter study guides that I will give you for each chapter that we cover.

SYLLABUS STATEMENT FOR PERSONS WITH DISABILITIES:

It is the intention of the institution to support full participation of all students, regardless of physical ability level. Therefore, if any student needs consideration of his/her physical abilities in order to complete the course, please notify the instructor as soon as possible.

SCHEDULE:

DATE	TOPIC	CHAPTERS
6/28	Introduction Craft Production and Mass Production	TXT: 1
7/3	PROSIM Introduction	PRO: 1,2
7/5	PROSIM Week 2 Decisions: Hiring, Firing and Training	PRO: 3,5
7/10	Operations Strategy/Quality Imperative PROSIM Week 2 Decisions: Hiring, Firing and Training	TXT: 2,3 PRO: 3,5
7/12	Designed-in Quality/W. Edwards Deming PROSIM Week 3 Decisions: Raw Materials Purchasing	TXT: 4 PRO: 7
7/17	Quality Control and Process Improvement PROSIM Week 3 Decisions: Raw Materials Purchasing	TXT: 5 PRO: 7
7/19	Forecasting/Master Planning PROSIM Week 4 Decisions: Parts Requirements Planning	TXT: 6,7 PRO: 6
7/24	Flow-Control Systems PROSIM Week 5 Decisions: Quality Planning	TXT: 8 PRO: 8
7/26	MIDTERM EXAM	TXT: 1-8
7/31	Purchasing/Logistics/Internet PROSIM Week 6 Decisions	TXT: 9
8/2	Timing: JIT and MRP PROSIM Week 7 Decisions	TXT: 10
8/7	Flexibility and Lot Sizing PROSIM Week 8 Decisions (Weeks 9 and 10 Optional)	TXT: 11
8/9	Process Selection and Layout Continuous and Repetitive Processing Job and Batch Processing	TXT: 12,13,14
8/14	Managing Projects	TXT: 15
8/16	FINAL EXAM	Semi-Cumulative plus PROSIM

NOTE: THE WITHDRAWAL DEADLINE IS WEDNESDAY AUGUST 2ND