

MGT 4352
Operations Resource Planning and Control
Fall 2012

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Class Time: T/TH 12:05-1:25PM at Room COB (Tech Square) 203

Office Hours: T/TH 1:35-3PM and by appointment

Course Description

Operations resource planning and control is about efficiently satisfying the customer demands of products and services. This involves planning, executing, monitoring, and controlling material requirements, production activities, and delivery of products and services. This course will integrate several of the major concepts in this area with the goal of applying these concepts to understand manufacturing and service management systems. We will study topics in greater depth than those in MGT 3501 such as demand management and forecasting, production planning, capacity planning, inventory and materials management, production activity control, and quality control. Specific manufacturing planning and control (MPC) techniques including material requirements planning (MRP), just in time (JIT), and theory of constraints (TOC) will be covered. The role of MPC in enterprise resource planning system (such as SAP R/3), supply chain logistics systems, statistical process control (SPC) and six sigma in quality management will also be examined. In summary, we hope to

- Develop an understanding of the fundamental issues and decisions involved in manufacturing planning and control
- Understand various techniques in planning, controlling, and managing production and manufacturing resources and activities
- Match manufacturing strategies and goals to the most appropriate planning and control techniques
- Examine how an effective manufacturing management system can increase manufacturing efficiency, effectiveness, and productivity
- Provide you sufficient modern MPC techniques to run a manufacturing or production system

The material setting is in the manufacturing environment but can be extended to service companies. The major delivery of the course includes lectures and case studies.

Text and Materials

F.R. Jacobs, W.L. Berry, D.C. Whybark, and T.E. Vollman, *Manufacturing Planning and Control for Supply Chain Management*, Sixth Edition, Irwin/McGraw-Hill, 2011. (ISBN 978-0-07-337782-7).

Recommended reading book: E. M. Goldratt and Jeff Cox, *The Goal: A Process of Ongoing Improvement*, Third Revised Edition, North River Press, 2004.

This recommended book provides an easy to read overview of common operational situations.

Extra class materials and homework solution will be posted on T-square.

Prerequisite

MGT 3501 Operations Management or equivalent

Grading Policy

Your overall grade for the course will be based on the following components:

Two Exams	30% each
Case Assignments	30%
Attendance and Participation:	10%

Exams

Exams will be taken-home. I will distribute the exams, explain the expectation and take any questions in the class. The exams will be turned in at the beginning of the next class or on the designated date and time. Each exam typically requires a few hours to work on. Each student should work on each exam individually, absolutely no cooperation. Students missing a scheduled exam due to an **official Georgia Tech** event must prearrange an alternate time to take the exam. **Health excused** absences must be documented, and arrange a make-up time to take the exam as soon as the excuse is over. All other excuses for **personal matter** will receive a grade of zero for the missed exam. All exams are non-comprehensive and open book. Clarity and organization are very important when the exams are graded. **NOTE: Students are expected to have their own calculator and computer for each exam!!**

Cases

All cases will be used for class discussion. All cases are group assignments. Each group will be responsible for a written report of **each case**. Reports should be **typed** on 8 1/2 x 11 paper, double-spaced, with a 12-point font and normal margins. The cover page should include the names of group members, title of the case, date, and contributions of the group members. The report should include one page executive summary and the responses to the assigned questions, with unlimited exhibits. The executive summary should address the case issues, the courses to resolve the issues, and the recommendations if any. The

exhibits should contain any quantitative and qualitative analyses, plus any information that supports your analysis and is relevant, but which would be too detailed in the body of the report. Due dates for the case reports will be announced in the class. The class is expected to offer insightful suggestions (from their own analysis of the cases) during the case analysis and class discussion. Active and enthusiastic participation by all is required for an interesting and sound analysis of the case situations, for which prior preparation is mandatory. Questions to help you prepare each case will be assigned along the progress of the class. ***There should be no collaboration between groups in their preparation and analysis of the cases.*** Note that you are expected to work as a group. ***Case materials and questions will be tested in the exams.***

Attendance and Participation

Students are expected to participate in a constructive and fruitful discussion during lectures and case analyses. Regular attendance is considered necessary. Contribution to class discussion will require that you prepare for the class ahead of time by reading the material that is to be covered. Class attendance and participation will be a factor in determining your course grade if the final curve is necessary. Also, class attendance enhances your understanding of the material and the type of questions to expect in the exams since many test problems will be from the class presentation. **If Georgia Institute of Technology is closed for any reason on a scheduled class day**, you should be prepared to adjust the schedule accordingly. In the next class meeting, I will provide direction as to potential changes in course. ***The class roll will be taken at each class.***

Homework

A series of homework problems will be assigned. These help ensure that you are “keeping up” with the course material and also provide an indication of the type of problems that may appear on the exams. If you are having trouble with the homework, it should serve as an indication that you are not properly learning the material – come talk to me about it. **Homework will not be collected** and the solutions will be posted on T-square. However, working on homework is absolutely important for preparing the exams.

Final cumulated scores of the class will be analyzed to determine if an adjustment or curve is necessary.

To protect honesty, any cheating in any exam or case report, big or small, will be penalized by an "F" in the course and will be referred to the Dean of Student Affairs for disciplinary action.

HONOR CODE

Case reports must be performed in collaboration within your group ***only***. Use of any notes or material from any other course in which any of the cases might have been discussed, and copy or duplicate a previous case report from former students, ***are strictly prohibited and will be considered a serious violation of the honor code.*** Students are responsible for the information contained in the Academic Honesty policies found at <http://www.honor.gatech.edu/>.

CLASSROOM ENVIRONMENT

CLASS DOES ENTAIL A CERTAIN AMOUNT OF CIVILITY. The following outlines the basic rules of respectful behavior that must be followed to permit the classroom to be a positive learning experience for all. **Please turn off CELL PHONES. Do not use LAPTOPS or other electronic equipment unless you are taking notes, displaying Power Points, or solving cases/assignments for the class; do not talk to your neighbors; and do not read anything other than the class material currently being discussed. Surfing the internet not relating to the class is inappropriate and will be penalized for your participation grade.**

Topics and Sequence:

The tentative sequence of the materials covered in the class is listed below. Modification may be made as the semester progresses and the appropriate change will be announced in the class.

Week	Class	Date	Topic	Chapter	Cases
1	1	8/21 (T)	Introduction to MPC	1	
1	2	8/23 (TH)	ERP and its relation with MPC	1a	Case groups sign-up
2	3	8/28 (T)	Demand Management and Forecasting	2	Finalize case groups
2	4	8/30 (TH)	Demand Management and Forecasting	3	Oregon Chain Saw
3	5	9/4 (T)	Sales and Operations Planning	4, 4A	
3	6	9/6 (TH)	Sales and Operations Planning	4, 4A	Lawn King Inc.
4	7	9/11 (T)	Master Production Scheduling	5	
4	8	9/13 (TH)	Material Requirements Planning	6, 6A	
5	9	9/18 (T)	Material Requirements Planning	6, 6A	Turbo Charge Engines, Inc.
5	10	9/20 (TH)	Capacity Planning	7	
6	11	9/25 (T)	Capacity Planning	7	Mutual Dependable Shop
6	12	9/27 (TH)	Production Activity Scheduling	8, 8A	
7	13	10/2 (T)	Production Activity Scheduling	8, 8A	Throughput Challenge for OPT, Inc.
7	14	10/4 (TH)	Just-in-Time Manufacturing	9	
8	15	10/9 (T)	Just-in-Time Manufacturing	9	
8	16	10/11 (TH)	Exam 1		
9		10/16 (T)	Fall Recess		
9	17	10/18 (TH)	Independent Demand Inventory	11	
10	18	10/23 (T)	Independent Demand Inventory	11	
10	19	10/25 (TH)	Independent Demand Inventory	11	Jettisoning Surplus Stock
11	20	10/30 (T)	Independent Demand Inventory	11	
11	21	11/1 (TH)	Supply Chain Logistics and Distribution	10, 10A	
12	22	11/6 (T)	Introduction to SQC/QM		
12	23	11/8 (TH)	Introduction to SQC/QM		
13	24	11/13 (T)	SPC		
13	25	11/15 (TH)	CC for Variables		
14	26	11/20 (T)	CC for Variables		DataStor Company
14		11/22 (TH)	Thanksgiving		
15	27	11/27 (T)	CC for Attributes		
15	28	11/29 (TH)	CC for Attributes; Acceptance Sampling		Fulton County Hospital
16	29	12/4 (T)	Six Sigma		
16	30	12/8 (TH)	Six Sigma		
		12/11 (T)	Exam 2 (Final)		