

POM 102: PRODUCTION / OPERATIONS MANAGEMENT

COURSE SYLLABUS

Course Catalog:	POM 102
Course Title:	Quantitative Methods & Production/Operations Management
Department:	Department of Quantitative Methods and Information Technology
School:	John Gokongwei School of Management
School Year:	SY 2012-2013
Semester:	Junior Term Abroad First Semester
Credit:	3 Units [Major Subject]

A. Course Description

This course aims to provide the student with an analytical approach to the economic problems of planning and deploying human resources, materials, plus facilities and equipment to generate goods and/or services for the marketplace. Course emphasis will be on the application of the analytical tools to address critical issues related to strengthening the competitive position of the enterprise, such as: product or service design, process engineering and work systems design, management of technology and innovation, environment-friendly design, capacity planning, plant location and facilities layout, logistics and supply chain management, total quality management, operations scheduling, and performance management.

B. Course Objective

By the end of this course, the student should be able to understand and appreciate the basic concepts of Production/Operations Management; know its importance in the success of the business; and learn the major POM concepts, quantitative tools and techniques that are used in tactical and strategic decisions. Other main objectives will include:

- To understand the role and contribution of operations towards achieving competitive advantage in the marketplace.
- To understand the relationship between operations and other business functions, such as Marketing, Finance, Accounting, and Human Resources.
- To understand and apply systematic approaches (qualitative and quantitative) in designing and managing operations

C. Textbook and Readings Requirements:

Required Readings	<u>Operations Management</u> William Stevenson, 10 th ed.
Supplementary Readings	a.) <u>Operations Management</u> Jay Heizer and Barry Render, 2008, 9 th Edition b.) <u>Operations Management</u> Roberta Russell and Bernard Taylor, 2011, 7 th Edition c.) <u>Operations Management</u> Lee Krajewski and Larry Ritzman, 7 th ed.

D. Course Outline (not in order in which they will be discussed)

Qualitative Topics	Quantitative Topics
Chapter 1: Introduction to Operations Management	
Chapter 2: Competitiveness, Strategy & Productivity	
Chapter 3: Forecasting	Forecasting Methods
Chapter 4: Product and Service Design	Reliability
Chapter 5: Capacity Planning	Linear Programming
Chapter 6: Process Selection and Facilities Layout	Line Balancing, Process Layouts
Chapter 7: Design of Work Systems	
Chapter 8: Location Planning and Analysis	Factor Rating, Transportation Model
Chapter 9: Management of Quality	Statistical Process Control
Chapter 10: Quality Control	Acceptance Sampling
Chapter 11: Supply-Chain Management	
Chapter 12: Inventory Management	Inventory Models
Chapter 13: Aggregate Planning	Aggregate Planning Strategies
Chapter 14: Material Requirements Planning (MRP)	MRP Algorithm
Chapter 15: Lean Operations	
Chapter 16: Short-Term Scheduling	Scheduling Algorithm
Chapter 17: Project Management	PERT – CPM Models
Chapter 18 Waiting Lines	Waiting Line Models

*** Different books have different Chapter numbers, so Focus on the Topic, not the Chapter numbers.

E. Course Requirements & Grade Equivalents

Requirements	Weight	Final Grade Equivalents
Long Exams (3-5)	75%	3.76 – 4.00 A 3.31 – 3.75 B+
Final Group Project:		2.81 – 3.30 B
Partial Papers (3) & Final Paper	15%	2.31 – 2.80 C+
Final Presentation	10%	1.81 – 2.30 C 1.00 – 1.80 D
Total:	100%	Below 1.00 F

F. Classroom Policies

1. **Attendance:** The course will meet twice a week. The highly accelerated pace of this course requires students to accept a great deal of responsibility for achieving their own learning outcomes. While in class, students are expected to actively participate in discussions and group activities, and not just listen to lecture. Outside class time, students are expected to spend hours of preparation which will include reading assignments, homework preparations, research, and group meetings.
2. **Class Participation:** Each learner is expected to actively participate in discussions on the assumption that each brings a wide range of experiences to the learning process. Active participation may include asking thoughtful questions, being willing to consider new ideas, helping the class understand complex ideas, having a cooperative attitude and a sense of humor, and helping others comprehend the material. However, consideration of other students is strongly encouraged to avoid dominating class discussions.
3. **Written Assignments:** An important component of this course is the completion of written assignments by students. All written work is expected to meet college level basic writing skills. Case Studies are the primary method to evaluate student progress in this course. Learners are encouraged to apply case materials to their project papers.
4. **Presentations:** Presentations on assigned case studies and applications papers will be made in this class. Students will be required to prepare written analyses of each assigned case and will also be required to present in class. Presentations made are to be professional in nature. The presentations should be well organized, with the topic thoroughly covered with all Case Study questions answered. Handouts and visual aids are to be professional looking and appropriate for the material to be covered. Presentations should not exceed the time given by the faculty.
5. **ACADEMIC INTEGRITY POLICY:** Every student is responsible to know the standards of conduct and expectations of academic integrity that apply to undertakings. Academic dishonesty will not be tolerated and will result in the maximum penalty as defined in the Student Handbook:
 1. Cheating during exams
 2. Submitting spurious reports copied from previous materials other than his/her own.
 3. Copying another student's work including assignments and reports
 4. Receiving assistance from anyone else with take-home quizzes.
 5. Plagiarism

G. The Group Project: Operations Plan

- Each group is required to submit partial project papers to serve as periodic updates of their progress in completing the Operations Plan. These project papers will be graded.
- The final written paper should follow the format discussed in class. There will be a mock defense (classroom presentation of the Operations Plan) prior to the final oral presentation. The final oral presentation will be graded by an outside panel of judges.
- Each student will be asked to *force rank* their group members at the end of the semester. Grades for group work will be *adjusted upward or downward* to account for each individual's relative contribution to the group effort.

H. Final Start-up Operations Paper

1. You are tasked to develop a business plan for a new product or service, with emphasis on each topics discussed in Operations Management.
2. Be sure you have the contacts that will help you in your operations startup project.
3. Email your proposals ASAP to mctan@ateneo.edu
4. For this semester's operations plan, you are doing a startup business with a capitalization of 5 Million initial asset investment.
5. Be guided with the due dates for the submission of your partial papers and final paper.
6. Mock presentations will be on June 18-22, 2012. Final presentation will be on the 1st week of July.

I. Due Dates:

Partial Paper Contents		Due Date
Partial Paper # 1	Product Design, Process Design, Demand Forecasting	May 7
Partial Paper # 2	Capacity Planning, Location Planning, Facilities Layout, Human Resource Mgt.	May 21
First Draft	Quality Mgt, Supply Chain, Inventory Mgt, Scheduling, Costing	June 4
Final Paper		July 2

***** Submit hardcopy and softcopy (miketan92@gmail.com & mctan@ateneo.edu) on or before 4pm for all Partial Papers and Final Paper*****

J. Internet Sources:

1.) Log in to either

www.groups.yahoo.com/group/mgt2014 or www.groups.yahoo.com/group/lm2014 and join the group. This will be our official yahoo group for the entire batch of Mgt Standard or Legal Management students. This is where I will make all my announcements for your batch.

2.) Log in to <http://tech.groups.yahoo.com/group/pom102-104> and join the group. Just type in your name and once verified, I will allow you to join the group.

3.) You can access and download the Power Point slides and other Opman stuffs from Yahoo Mail.

Login name: **POM102104**

Password: **ateneo**

The teacher reserves the right to raise a student's grade if in his judgment, a particular student's overall performance, behavior and character merits this recognition. The teacher, of course, has no right to pull down any student's grade point achievement.

Good Luck and Enjoy the Semester!!

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POM 102/104: Start-up Operations Management Paper Outline

- Very Brief Industry Background -- (Just a SUMMARY! Not included in the Opman Panel grading. No need to complete all the details.)
 1. Industry Analysis – Major players and developmental trends.
 2. Target Market - Can you describe the customer base in such terms as age, income, lifestyle, or similar dimensions? What is the projected growth in the primary customer base over the next five years? What is the frequency of the purchase? Are brands important to the customers?
 3. Competition Analysis - Who are the primary competitors, and what are their market shares? What are the operations and marketing strategies of the various competitors?
- Product / Service Design -- What are the products or the services you will offer? (Describe in full details!!) Why did you choose that product? (Do market research!!) How “unique” is your product/service? Describe the life-cycle of your product/service.
- Demand Forecasting - Indicate what you are forecasting. (product or service) Discuss methodology. Present research data from Surveys, Population Data, Foot Counting, & Benchmarking. Analyze your data. Check for behaviors and patterns like trend, seasonality & variations. Finally, present your forecast.
- Location Planning
 1. Location Requirements (What are the factors that you are looking for your location? Explain.)
 2. Choices of Location (Provide a very detailed address and sketch of your location, if possible, pictures of the locations).
 3. Factor Rating Method in arriving the decision.
 4. Explain fully the discrepancies in each score for each location for each factor.
- Process Design -- Do a Make or Buy Analysis for each step of the process and provide BASIS for deciding to Make or Buy. Explain the detailed processes from opening to closing including employee involvement. Provide a detailed process flow chart.
- Capacity Planning -- **What is your limiting capacity? How flexible is your capacity?**
 1. Provide some pictures of the machines or equipment used. For each machine: Explain the simple use of that machine in your production process. Give your suppliers and their quotations of the prices. What is your choice among the suppliers? Why? --Be sure to give explanations why you choose that particular machine or equipment. Identify the capacity of your chosen type/brand/model of that machine.
 2. From the processes involved, identify your limiting capacity. Do capacity planning.
 3. Compute your design, effective & actual capacity estimates.
 4. Match actual capacity with demand forecast. Evaluate.
 5. If capacity utilization percentage is high, how can you expand capacity?

- Facilities Layout -- Describe your layout and provide BASIS. (The reader should be able to visualize your layout without looking at your floor plan. Be sure to have the RESTROOMS and the FIRE EXITS in your layout.) Provide Facilities Layout Floor Plan with proper scaling.
- Design of Work Systems - **Who is your most important employee and how do you recruit, train and retain him (from being pirated)?**
 1. Identify the workforce needed (Simple Org Chart). Give detailed job design.
 2. Explain selection process, recruitment process and training process.
 3. Explain compensation package. Indicate performance management system.
 4. Explain the current working conditions.
- Supply Chain Management - Identify your prospective suppliers and provide BASIS why you chose them. How does the company manage the flow of information and materials from suppliers through production and distribution to end-users?
- Inventory Management - **How many days' supply is your safety stock of finished goods/ work in process/raw materials inventory?**
 1. Identify all the inventories maintained. (raw materials, work-in-process, finished products)
 2. Replenishment parameters (lead time, buffer stock, order policy)? Procurement methods/practices?
 3. Identify the needed safety stock. (Be sure to show all your explanations or computations.) What is your service level?
 4. Inventory Counting System? Discuss inventory control.
- Aggregate Planning: Make an aggregate plan based on your preferred strategy.
- Materials Requirements Planning: Make an MRP table for your products. Provide explanation on the details used for computation.
- Scheduling: Prepare GANTT Charts for pre-operational and operational scheduling.
- Total Quality Management: How do you check the quality of your product/service? Identify dimensions and determinants of quality. Discuss the impact of quality on costing. Discuss method of inspection. How do you maintain your machines in good condition? Discuss waste disposal system.
- Financial Statements / Costing -- **Were you able to produce the same quality product (like your competitor) at a lower cost? Compute the initial outlay and total expenses for the first year of operations.**

Compute initial investment, break-even analysis and detailed computation of cost. If possible, compute income statement and do capital budgeting analysis.

	Group 1	Group 2
CONTENT (Operations Strategy) 75 %		
1. Product & Service Design (9 points) <ul style="list-style-type: none"> Was the product user-friendly? Was the service customer-friendly? Was the proposed product/service design “manufacturable” or “feasible”? 		
2. Forecasting (9 points) <ul style="list-style-type: none"> Did the group gather adequate and appropriate external data to serve as the basis for their forecast? Did the group use the proper forecasting technique? Were the forecasts achievable or realistic? 		
3. Location Planning (8 points) <ul style="list-style-type: none"> Did the group choose the appropriate location for the business? Did they use the appropriate criteria in selecting their proposed location? 		
4. Process Design (9 points) <ul style="list-style-type: none"> Did the group have a clear understanding of the whole process of their product/service design? Was the proposed production process efficient? Did the group select the optimal process design? 		
5. Capacity Planning (9 points) <ul style="list-style-type: none"> Was the capacity planning accurate? Would capacity be able to produce the projected forecast? Was there any difference between the forecast and the capacity? Did the group make any adjustment in the capacity (like doing overtime work or having additional workforce) to ensure production? 		
6. Facilities Layout (8 points) <ul style="list-style-type: none"> Would the workplace layout produce efficient production results? Was the space maximized? Were the facilities properly placed in the layout? 		
7. Design of Work Systems & Scheduling (8 points) <ul style="list-style-type: none"> Was the number of workers enough to be able to operate the whole business? Were workers given enough compensation and benefits? Were workers trained to become efficient? 		
8. Inventory Management & Aggregate Planning & Materials Requirements Planning (5 pts.) <ul style="list-style-type: none"> Did the group have efficient inventory management? Was the system efficient enough to avoid stock outs and overstocking of finished goods/ work in process/ raw materials inventory? 		
9. Quality Control (5 points) <ul style="list-style-type: none"> Was the group able to tackle quality control issues adequately? Were the quality control measures appropriate? 		
10. Financial Statements (5 points) <ul style="list-style-type: none"> Was the group able to estimate the production costs? Is this business a worthwhile investment? 		
PRESENTATION 25 %		
1. PRESENTATION STYLE & COMMUNICATION SKILLS (15 points) <ul style="list-style-type: none"> Were the visual aids used appropriate to their concept? Was there teamwork between the members of the group? Was the presentation clear and consistent? Was the thought/message organized logically? Was the presentation done professionally? 		
2. ORAL DEFENSE (10 points) <ul style="list-style-type: none"> Did all the members of the group reflect an adequate understanding of their project? Was the group able to adequately respond to the issues raised by the panelists? 		
TOTAL RAW SCORE: (100 POINTS)		
LETTER GRADE EQUIVALENT:		

