



# Operations Management

## OM-565

Program	<b>MBA</b>
Credit Hours	<b>3</b>
Prerequisites	<i>QM-555 (Data Modeling &amp; Decisions)</i>

### **CAPSULE STATEMENT**

The global business system is changing the way everyone communicates, lives, and works. The pace of technological change is quickening as computers and communication networks make it possible for firms to react faster to innovations and shifts in demand. The new global information links connect customers, retailers, and manufacturers with a touch of button. The use of technology in this new information age has collapsed the traditional barriers that once existed. Companies now make worldwide products.

These changes have a tremendous impact on the production operations of companies. Effective management of these operations has become an area of growing concern. Continuous improvement of products, services and processes, and elimination of all forms of waste, have become inevitable for companies who aim to remain competitive in the global market.

Operations Management is a discipline and profession that studies and practices the process of planning, designing, and operating production systems and subsystems, in both manufacturing and services, to achieve the goals of the organization.

## LEARNING OBJECTIVES

The purpose of the course is to develop ability in the participants to:

- Appreciate the role of Operations Management (OM) in an organization
- Formulate and communicate production processes in the terminology of OM
- Use quantitative and qualitative methods to make better decisions as managers and entrepreneurs
- Effectively utilize various tools and techniques to improve the products and services, and thus enhance the competitiveness of an organization

## LEARNING METHODOLOGY

Following instructional tools and methodologies may be utilized during the course.

Lectures	Skill Development Exercises	Simulations
Case Studies	Presentations	Guest Speaker
Business Games	Computer Software Tools	Industrial Trip

## REQUIRED TEXT BOOK

*Operations Management* (9<sup>th</sup> Edition) by Heizer and Render, Prentice Hall, 2009

## ADDITIONAL REFERENCES

1. *Operations Management for Competitive Advantage (11<sup>th</sup> Edition)* by Chase, Aquilano, Nicholas, and Jacobs
2. *Operations Management* (6<sup>th</sup> Edition) by Krajewski and Ritzman
3. *Operations Management* (9<sup>th</sup> Edition) by Stevenson

# GRADE ASSESSMENT

<b>Instrument</b>	<b>Weightage</b>
Weekly Assignments	5%
Quizzes	10%
Case Analysis	10%
Presentations	5%
Project	10%
Class Participation	10%
Mid-Term	20%
Final Exam (Comprehensive)	30%

## WEEKLY ASSIGNMENTS

1. A short assignment will be given every week
2. All assignments should be submitted at the START of the next session
3. Assignments should be in typed form. Handwritten assignments will NOT be accepted
4. Assignments should include a title page giving all required information
5. Serious errors in grammar, spellings, and formatting will result in loss of points. So please **PROOF READ** your work before submission.
6. You are not allowed to share or show your assignment output to any member outside your team under any circumstances. You are also responsible for security of soft copies of your assignments.
7. The weekly assignments will be graded on a three point scale

0 point      *Not submitted / Unsatisfactory*

1 point      *needs major improvement*

2 points      *Satisfactory*

## **QUIZZES**

1. A total of 5-7 quizzes may be conducted
2. Most of the quizzes will be surprise (un-announced)
3. From a total of (n) quizzes, best (n -1) quizzes may be considered for the final grade
4. Make-up quizzes will not be allowed
5. All quizzes will be Open Book / Open Notes

## **PRESENTATIONS**

1. Each participant will be required to make at least one presentation, either in a team or individually
2. The presentations will be formal, and the grade will depend on quality of contents, as well as quality of delivery.

## **CASE ANALYSIS**

1. You will be required to work on 3-5 case studies, and submit your analysis in a report form for each case study
2. All the case analysis will be conducted in teams
3. The report should adhere to the standard norms of professional report writing
4. The grade of the case report will depend on the thoroughness and soundness of the analysis, as well as the presentation of analysis in the report
5. All team members are required to participate in preparing the case analysis and other assignments. In case a member fails to participate, it is the responsibility of the remaining team members to exclude his/her name from the submitted assignment, and notify the resource person. Failure to do so will be considered as an act of violation of the class policy and may result in serious loss of grade for the entire team or selected members.

## **PROJECT**

Participants will be required to Re-Engineer a real-life production process, based on OM principles.

The project will include following activities:

1. Select a real-life production process (manufacturing or service)
2. Map the current process using appropriate process mapping tools
3. Identify the opportunities for improvement
4. Re-design the process using creative process re-engineering principles
5. Present the recommended process in a process map
6. Submit the analysis in form of a written Report
7. Share your analysis with rest of the class through presentations

## **CLASS PARTICIPATION**

1. You are required to attend the classes regularly and with punctuality
2. You should come fully prepared in each class, and participate actively in class activities

## **MID-TERM TEST**

1. Mid-Term test will be conducted during class regular class timings in the ninth week
2. The test will be Open Book and Open Notes

## **END-TERM EXAM**

1. End-Term Exam will be comprehensive (i.e. will include pre-mid as well as post-mid contents)
2. The exam will be Open Book and Open Notes

## **REQUIRED MATERIAL FOR OM-565**

You are required to bring the following to every class:

1. **Textbook**
2. **Calculator**
3. **USB Flash drive (personal, non-sharing)**
4. **Ring file (for notes) (OPTIONAL)**
5. **Lead pencil (and accessories) (OPTIONAL)**

***NOTE: Failure to bring any of the first three things or being absent or late in a class, may result in a loss of marks in your class participation, and may adversely affect your final grade.***

## **CLASS POLICY (OM-565)**

### **SEATING PLAN**

All participants are required to sit according to the fixed seating plan, (finalized in Session-3) and have their name plates in front of them for each session

### **EMAIL ADDRESSES**

Participants should establish their email accounts on the UMT email system, and use this address for all communications during this course

### **MOODLE**

Participants should regularly visit the course website on MOODLE Course Management system, and fully benefit from its capabilities

### **USE OF MOBILE PHONES AND OTHER ELECTRONIC DEVICES**

1. Use of mobile phones and similar devices is prohibited during the class
2. Your phone should not be heard or visible during the class
3. All mobile phones should be turned-off (or at least in the “silent” mode) and secured in pockets or bags during the class time, and may not be used for ANY purpose, including calculations, time-keeping, etc. In case you are anticipating an emergency call, you need to discuss this matter with the resource person BEFORE the start of the class

### **ENTERING AND LEAVING THE CLASSROOM**

You are requested to seek permission from the resource person while entering or leaving the classroom during the session

### **USE OF UNFAIR MEANS**

1. COPYING or SHARING in graded instruments (e.g. assignments, quizzes, tests etc), or using any other unfair means, is not permissible
2. Any individual or team failing to comply will be reported to the Unfair Means Committee (UMC) for appropriate action.
3. We expect from you a thoroughly professional approach in this regard

## Course Content (OM-565)

Week	Topics	Chapters	Learning Outcomes	Activities	Assessment Tools
1	<b>OPERATIONS &amp; PRODUCTIVITY</b> Role of Operations Management (OM) as one of the Three Core Functions in an Organization, History of OM, Significant Contributions in field of OM, Future trends in OM, Goods vs Services, Productivity, Ethics in Operations Management	<b>1</b>	Understand the role of OM in business Management  Calculate various measures of productivity and select suitable measure of productivity  Appreciate the ethical implications of OM decisions on society	Introduction, Lecture	Assignment
2	<b>OPERATIONS STRATEGY IN GLOBAL ENVIRONMENT</b> Developing Mission & OM Strategies, Critical Success Factors (CSF), Aligning Core Competencies with CSF, 10 OM Decisions, Global OM strategy <b>DESIGN OF GOODS &amp; SERVICES</b>	<b>2,4</b>	Alignment of Operations Strategy with mission and business strategy  Familiarize with latest trends in product development	Lecture, Presentation	Presentations, Assignment
3	<b>PROCESS STRATEGY</b> Four Process Strategies, Process Analysis and Design, Process Mapping, Flow Diagrams, Process Charts, Service process design, Process Re-engineering, Bottle neck analysis	<b>6</b>	Select most suitable process strategy to achieve strategic goals  Ability to map a process  Develop out-of-the-box thinking for process re-engineering	Business Game, Lecture, Discussion	Presentations, Assignment, Project Assignment
4	<b>CAPACITY PLANNING</b> Design & Effective Capacity, Capacity Cushion, Capacity Planning, Leading vs Lagging Strategies, Single & Multiple Product Break Even Analysis, Make vs Buy, Decision Trees for Capacity decisions	<b>Sup-6</b>	Determine design capacity, effective capacity, and utilization  Conduct break-even analysis for capacity decisions.	Lecture, Discussion, Presentation, Skill Development Exercise	Presentations, Assignment, Case Submission & Discussion, Quiz



5	<p><b>LOCATION STRATEGIES</b></p> <p>Factors Affecting Location Decisions, Methods for Evaluating Location Alternatives, Factor Rating Method, Load-Distance Methods, Center of Gravity Method, Using GIS Technology for Location Decisions, Multiple Location Selection Strategies, Using Linear Programming Transportation Models for Location Decisions, Service location Strategy</p>	7	<p>Critically evaluate the choice of analytical tool of location analysis for various operations scenarios</p> <p>Apply the Factor-rating method, Location break-even analysis, and Center-of-gravity method</p>	<p>Lecture, Presentation, Discussion, Skill development Exercise,</p>	<p>Presentations, Assignment,</p>
6	<p><b>LAYOUT STRATEGIES</b></p> <p>Types of Layout, Layout Design, Fixed Position Layout, Process- Oriented Layouts, Office Layout, Retail Layout, Assembly Line Balancing</p>	8	<p>Evaluate choice of layout type</p> <p>Design layout for process-oriented set-up</p> <p>Balance an assembly line</p>	<p>Lecture, Presentation, Discussion, Skill development Exercise,</p>	<p>Presentations, Assignment, Case Discussion , Quiz</p>
7	<p><b>HUMAN RESOURCES &amp; JOB DESIGN</b></p> <p>Job Design, Ergonomics, Ethical issues in Job design</p> <p><b>WORK MEASUREMENT</b></p> <p>Time Motion Studies, Establishing Work Standards, Work Sampling</p>	9, Sup- 9	<p>Understand major issues in job design,</p> <p>Develop work standards</p>	<p>Business Game Lecture, Presentation, Skill development Exercise,</p>	<p>Presentations, Assignment, Case Submission &amp; Discussion, Quiz</p>
8	<p><b>INVENTORY MANAGEMENT</b></p> <p>Role of Inventory in Operations, ABC analysis, Record accuracy, Cycle counting, Inventory Models, Fixed Period Systems, Continuous Review Systems, Basic EOQ</p>	11	<p>Perform ABC analysis</p> <p>Use EOQ model to reduce total inventory costs</p>	<p>Lecture, Presentation, Discussion, Skill development Exercise,</p>	<p>Presentations, Assignment, Quiz</p>

9	<b>MID-TERM</b>				<i>Mid-Term Test</i>
10	<b>INVENTORY MANAGEMENT</b> Safety Stock, Service Level, Probabilistic Models: Constant Lead Time (LT)- Probabilistic Demand Models, Probabilistic LT-Constant Demand Models, Probabilistic LT-Probabilistic Demand Models, Role of Inventory Management in Sustainable Supply Chains	<b>11</b>	Compute the required reorder point  Determine the appropriate level of safety stock to achieve strategic objectives	Lecture, Presentation, Discussion, Skill development Exercise,	Presentations, Assignment,
11	<b>AGGREGATE PLANNING</b> The planning Process, AP Strategies, Level Strategy, Chase Strategy, Methods for AP, Optimization of Aggregate plans, AP in Services	<b>12</b>	Develop aggregate plans	Lecture, Presentation, Discussion, Skill development Exercise,	Presentations, Assignment, Case Submission & Discussion, Quiz
12	<b>MATERIAL REQUIREMENTS PLANNING (MRP)</b> Master Production Schedule, Bill of Materials, MRP structure, MRP Tables, Lot Sizing Techniques, Extensions of MRP, MRP-II, MRP in Services, Enterprise Resource Planning (ERP)	<b>13</b>	Develop MRP tables using L4L and Fixed Lot-size  Evaluate MRP, MRP-II, ERP systems	Lecture, Presentation, Discussion, Skill development Exercise,	Presentations, Assignment, Case Submission & Discussion, Quiz

13	<b>JIT &amp; LEAN OPERATIONS</b> JIT layout, inventory, Scheduling and quality, Lean operations, Sustainable operations, Operations and social responsibility	<b>15</b>	Implement Lean strategies in organization	Lecture, Presentation, Discussion, Skill development Exercise,	Presentations, Assignment, Case Discussion
14	<b>SCHEDULING</b> Strategic Importance of Scheduling, Scheduling Process-focused Facilities, Loading Jobs, Sequencing Jobs on One Workstation, Optimal sequencing on Two Workstations, Finite Capacity Scheduling, Theory of constraints, Scheduling repetitive facilities, Scheduling Services	<b>13</b>	Apply the assignment method for loading jobs  Optimal Scheduling of multiple jobs on a Single Workstation  Develop Optimal Sequence for Two Workstations models	Lecture, Presentation, Discussion, Skill development Exercise,	Presentations, Assignment, Case Submission & Discussion
15	<b>GUEST SPEAKER</b>		Expose participants to real life challenges in field of operations management	Guest speaker/ Seminar	