



Operations Management

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1. Course Objective

Operations Management course is a core course intended to be the first course on operations and supply chain management domain. Students should take this course to understand the role of operations management in various manufacturing and service organization.

All first year post graduate programme students are expected to take this course. There is no pre-requisite for this course.

There are three modules in this course- (I) Process and capacity analysis, (II) Inventory analysis and (III) Operations planning. In module (I), various process and capacity analysis of manufacturing and service firms is covered through reading and cases. Module (II) is focused on inventory problems faced by firms under different scenarios- deterministic demand, uncertain demand and various review policies. Readings, cases and games are used to explain nuances of inventory problems faced by firms. In module (III), a brief exposure to operations planning is given. Topics such as master production schedule, material requirement

planning, just-in-time, total quality management are covered through reading and cases.

The course has four components- (i) Lecture-mode (concepts), (ii) Case preparation, (iii) Case discussion and (iv) Reading. Components (i) and (iii) would be conducted in class while components (ii) and (iv) are out-of-the-class responsibilities of students. Lecture-mode represents the part where instructor will explain the concepts in the class. During case discussions, students would take lead to discuss the scheduled case. It is expected that students spend minimum 2-3 hours per session 1 session = 2 hours of class-time) for preparing components (ii) and (iv).

2. Learning outcomes

After successful completion of the course, students should be able to appreciate the role OM in a firm. Moreover, they should develop abilities to formulate and analyse operations related problems of firms. Furthermore, this course would enable students to take advance courses in OM. Following are the learning outcomes-

1. Understand role of OM in a manufacturing as well as service firm.
2. Develop capabilities formulate and analyse OM related problems of firms. Such as-
 - a. Process analysis
 - b. Capacity analysis
 - c. Inventory management
 - d. Operations planning
 - e. Quality control

3. Text book / Reading materials

- a) **Text book:** Mahadevan B (2010), Operations Management: Theory & Practice(2nd Edition), Pearson¹ [A copy of book is available in library]

¹ Third edition or other edition may also work

- b) **Cases:** Kristen's cookie, Executive shirts, Shouldice hospital, Donner, HP, Cataumet boats and Toyota. [A copy of these seven cases is available in the library]
- c) **Novel:** Goldratt and Cox (1984), The Goal

4. Assessment Method

Assessment Method	Weight
Quiz I	10%
Quiz II	10%
Case Submission & Discussion	30%
Final Examination	50%
Total	100%

5. Course Schedule

Session # / Date	Session Content	Case	Pre - Reading
Module-I : Process and capacity analysis			
Session 1	Introduction	-	-
Session 2	Process analysis; factors affecting operations performance- bottleneck, cycle time etc. <i>[Start reading The Goal]</i>	Kristen's cookie	Chapter 3: 56-65
Session 3	Process analysis; Batch and assembly production	Executive shirt	Chapter 3
Session 4	Process analysis: Service vs	Shouldice	Chapter 4

	Manufacturing operations	Hospital	
Session 5	Capacity analysis	-	Chapter 5
Session 6	Product process matrix	Donner	Chapter 4
Session 7	Quiz I		
Module-II : Inventory analysis			
Session 8	Inventory management: Deterministic models	-	Chapter 12: 362-374
Session 9	Inventory policies: Continuous and periodic reviews, Single period (Newsvendor model)	-	Chapter 12: 374-385
Session 10	Managing inventory in responsive chain	HP	
Session 11	Inventory and supply chain coordination Beer game		Read beer game handout
Session 12	Beer game analysis: Coordination <i>[Finish reading The Goal]</i>		Chapter 9
Session 13	Quiz II		
Module-III : Operations planning			
Session 14	Aggregate production planning	-	Chapter 14
Session 15	Resources planning	Cataumet boats	Chapter 15
Session 16	Just-in-time; Lean management	Toyota manufacturing	Chapter 17; Chapter 3: 65-70
Session 17	Total quality management	-	Chapter 8
Session 18	Quality control	-	Chapter 18: 576-600