Course Title:	Production Operations Management
Course Code:	OM345
Prerequisites:	Operations Management
Department:	Operations and Supply Chain

HSM Vision

HSM envisions its success in the sustainable contribution that it will make to the industry, academia and research in public and private sector. HSM will lead by providing professionally competent and ethically conscious human resources engaged in the global and local context to foster socio-economic growth and sustainability for the society. HSM envisages having faculty with high research potential and a deep desire for cutting edge research including collaboration with national and international partners.

HSM Mission

Being a research-oriented and student-centric business school, we emphasize research publications in impact journals as well as state-of -the-art learning methodologies. We will prepare our students to become the future ethical business leaders and the guiding post for the society, while equipping them with the knowledge and skills required by world-class professionals. We will be the leading choice for organizations seeking highly talented human resource. HSM will foster internationalization with key stakeholders and actively work to exchange best practices with business schools across Pakistan through collaborations, workshops, conferences and other means.

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 in an organization
- Formulate and communicate production processes in the terminology of OM
- Use quantitative and qualitative methods to make better decisions as managers
- 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	In-class Skill Development Exercises	Simulations
Computer Software Tools	Case Studies & Presentations	Guest speakers

COURSE ASSESSMENT

Quizzes	10%
Assignments and Cases	15%
Class Participation & Case Discussion	10%
Project	10%

Midterm	20%
Final Exam (Comprehensive)	35%

REQUIRED TEXT BOOK

Heizer, Jay and Render, Barry, Operations Management, 12th Edition.

REFERENCES

Chase, Richard B., Aquilano, Nicholas J., and Jacobs, F. Roberts, Operations Management for Competitive Advantage, McGraw Hill, New York, 2006.

Raturi, Amitabh S., Evans, James R, Principals of Operations Management, South-Western, 2005.

Production Operations Management

CLASS POLICY

PARTICIPATION

Each course participant shall be expected to participate fully in class discussions. You will be expected to contribute significantly to in-class analysis and discussion of readings and case studies.

Ways to effectively contribute include:

- Responding to questions.
- Asking questions that contribute towards constructive discussions.
- Performing assigned class exercises

Disruptive behavior such as talking during the class without permission, coming late, leaving class during discussion or lecture and using mobile phones in class will count as negative participation.

TEAM WORK

Teamwork is a very important part of your learning experience and you are expected to learn to do tough assignments in teams (not chosen by you) and meet the deadlines and quality standards. Groups of 4-5 members will be finalized before the end of third week. The assignments, projects and presentations during the course will be based on the group work unless otherwise specified. Once formed participants will not be allowed to change the group without the resource person's permission. It is recommended that all students should equally

participate in the group assignments in order to avoid undue burden on some group members. If due to any reason any member of the group is unable to participate in the assignment, it is suggested that this member should contact me BEFORE the class personally or through email. The participant will be provided extension or alternative.

ASSIGNMENTS

Group and individual assignments will be assigned related to each session. These assignments are to be submitted in the beginning of the next session. Assignments should be uploaded on Moodle before the deadline.

MID TERM PROJECT

Teams will be assigned a Midterm project in the third session. Your midterm project is a small exercise for developing understanding about process strategy& analysis. For the project you are required to choose one process of any company and do the following;

- Explain the process using process mapping techniques
- Identify the flaws in the existing processes
- On the basis of process analysis techniques learned in the class suggest improvements in the process.
- Prove that your solution will improve the situation.

Dead line for the project submission is beginning of the 7th session. Teams will also be required to present their projects in 15 minutes (including the time for questions and answers) during the 8th session after the midterm.

QUIZZES

1. Quizzes may be taken unannounced
2. From a total of (n) quizzes, best (n -1) quizzes may be considered for the final grade.
3. No make-up quizzes will be allowed.

USE OF MOBILE PHONES AND OTHER ELECTRONIC DEVICES

1. Use of mobile phones and any other electronic device (except calculators) is prohibited during the class time.

2. All mobile phones should be turned-off and secured in pockets or bags during the class time, and may not be used for ANY purpose, including calculations, time-keeping, etc

COUNSELING HOURS

Counseling hours will be displayed on the office door after the first week. Please follow the displayed timings for your visits. In case you need time other than the counseling hours, you may take the appointment through email.

If you find the course difficult I suggest that you should contact me in the first quarter of the course. Because the concepts usually build upon each other, understanding the basics is absolutely necessary.

Course Content

Week	Topics	Chapters	Learning Outcomes	Assessment Tools
1	OPERATIONS & PRODUCTIVITY 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, , Difference b/w goods and services, Productivity	1	Define OM, Understand the role of OM in business Management Understand the role of productivity in Operations Calculate single factor and multifactor productivity	Assignment
2	OPERATIONS STRATEGY IN GLOBAL ENVIRONMENT Developing Mission & OM Strategies, Critical Success Factors (CSF), Aligning Core Competencies with CSF, Ten OM Decisions DESIGN OF GOODS & SERVICES Issues for product design	2,4	Define mission and strategy, Identify and explain three strategic approaches to competitive advantage, Identify and define the 10 decisions of operations management, Identify and explain four global operations strategy options Understand design issues in products and services	Assignment
3	PROCESS STRATEGY Four Process Strategies, Process Analysis and Design, Process Mapping, Flow Diagrams, Process Charts, Service process design, Process Re-engineering	6	Describe four production process strategies, Compute crossover points for different processes, Describe customer interaction in process design, Ability to analyze and improve a process	Presentations , Assignment, Project Assignment Class Activity
4	CAPACITY PLANNING Design & Effective Capacity, Capacity Cushion, Capacity considerations, Managing demand, Capacity Planning, Leading vs Lagging Strategies, Single & Multiple Product Break Even Analysis for Capacity Planning, Using Decision Trees for Capacity Decisions	Sup-6	Define capacity, Determine design capacity, effective capacity, and utilization, Compute break-even, Apply decision trees to capacity decisions, Compute net present value, Understand the appropriateness of different strategies for capacity enhancement.	Presentations , Assignment, Case Submission & Discussion
5	LOCATION STRATEGIES Factors Affecting Location Decisions, Methods for Evaluating Location Alternatives, Factor Rating Method, Load-Distance Methods, Center of Gravity Method, Using Linear Programming Transportation Models for Location Decisions, Service location Strategy	7	Identify and explain major factors that affect location decisions, Apply the factor-rating method, location break-even analysis and center-of-gravity method	Presentations , Assignment, Case Discussion
6	LAYOUT STRATEGIES Types of Layout, Layout Design, Fixed Position Layout, Process- Oriented Layouts, Office Layout, Retail Layout, Repetitive and Product-Oriented Layout, Assembly Line Balancing	8	Discuss important issues in different types of layouts, modern warehouse management and terms such as cross-docking, and random stocking, Identify when fixed-position layouts are appropriate, Explain how to achieve a good process-oriented facility layout, Define product-oriented layout , balance production flow in a repetitive or product-oriented facility	Presentations , Assignment,

7	Supply Chain Management		Introduction to various concepts related to supply chain management.	Presentations, Project Submission
8	**MIDTERM EXAM PROJECT PRESENTATIONS**			
9	INVENTORY MANAGEMENT Role of Inventory in Operations, ABC analysis, Record accuracy, Cycle counting, Inventory Models, Fixed Period Systems, Continuous Review Systems, Basic EOQ Inventory Model	11	Conduct an ABC analysis Explain and use cycle counting Explain and use the EOQ model for independent inventory demand Compute a reorder point and explain safety stock Apply the production order quantity model, Explain and use the quantity discount model, Understand service levels and probabilistic inventory models	Presentations, Assignment,
10	INVENTORY MANAGEMENT Safety Stock, Service Level, Probabilistic Models: Constant Lead Time (LT)-Probabilistic Demand Models, Probabilistic LT-Constant Demand Models, Probabilistic LT-Probabilistic Demand Models, and,	11		Presentations, Assignment,
11	AGGREGATE PLANNING The planning Process, AP Strategies, Level Strategy, Chase Strategy, Methods for AP, AP in Services	12	Define aggregate planning, Identify strategies for developing an aggregate plan, Prepare AP using chase, level and mixed strategies, Understand yield management	Presentations, Case Submission & Discussion
12	MATERIAL REQUIREMENTS PLANNING (MRP) & ERP Master Production Schedule, Bill of Materials, MRP structure, MRP Tables, Lot Sizing Techniques, Extensions of MRP, MRP in Services, Enterprise Resource Planning (ERP)	13	Develop a product structure, Build a gross requirements plan, Build a net requirements plan, Determine lot sizes for lot-for-lot, EOQ, and PPB, Describe MRP II, Describe closed-loop MRP, Describe ERP.	Presentations, Case Submission & Discussion
13	JIT & LEAN OPERATIONS JIT layout, inventory, Scheduling and quality. Lean operations	15	Define just-in-time, TPS, and lean operations, Define the seven wastes and the 5Ss, Explain JIT partnerships	Case Discussion
14-15	SHORT TERM SCHEDULING Strategic Importance of Scheduling, Scheduling Process-focused Facilities, Loading Jobs, Sequencing Jobs, Finite Capacity Scheduling, Theory of constraints, Scheduling repetitive facilities, Scheduling Services	13	Explain the relationship between short-term scheduling, capacity planning, aggregate planning, and a master schedule, Draw Gantt loading and scheduling charts, Apply the assignment method for loading jobs, Name and describe each of the priority sequencing rules, Use the cyclical scheduling technique	Assignment