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Trimester: Fall 2017

Course Title: Operations Management

Course Code: PM-430

Course Type: Core

Pre-Requisite:

Counseling Hours: Class Day

Program: MPM/MSCM

Program Head:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Signature** | **Date** |
| **Prepared By**  (Resource Person) | Amer Saeed |  |  |
| **Checked By**  (Program Head) |  |  |  |
| **Approved By**  (Head QA) |  |  |  |

**Course Description & Format**

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.

**Course Student 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
* Successfully manage today’s complex supply chain environment
* Understand traditional business functions & the linkage to customers & suppliers

**Course Contents**

Following is the session-wise breakup of the course:

**Session 1, 2: OPERATIONS AND PRODUCTIVITY**

One-to-one introduction

Course Introduction, Teaching & Assessment Methodology

Distribution of Course Outlines

Discussion on Course Outline

Setting up of Norms

Why Study Operations management

Important Trends

Productivity

**Learning Outcomes**

Participants would be able to describe what the operations function is and why it is critical to an organization’s survival. They must also be able to identify what a supply chain is and how it relates to a particular organization’s operations function. They would be able to understand the role of productivity in Operations. Calculate single factor and multifactor productivity

**Session 3: OPERATIONS STRATEGY IN GLOBAL ENVIRONMENT**

Developing Mission & OM Strategies

Critical Success Factors (CSF)

Aligning Core Competencies with CSF

Ten OM Decisions

*In-Class Activity*

1. *Case Discussion: Minit-Lube*

**Learning Outcomes**

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.

**Session 4: DESIGN OF GOODS AND SERVICES**

Define product life cycle

Describe a product development system

Describe how time based competition is implemented

Describe customer participation in the design and production of services

**Learning Outcomes**

This topic introduces the importance of design phase of goods and services. What are the steps involved and how companies can get competitive advantage by improving and collaborating their design of products process.

**Session 5 : PROCESS STRATEGY**

Four Process Strategies

Process Analysis and Design

Process Mapping, Flow Diagrams, Process Charts,

Service process design, Process Re-engineering

*In-Class Activity*

1. *Case Discussion: Zephtrex Fabric*
2. *Process Mapping of UMT registration system*

**Learning Outcomes**

In these sessions participants will learn the characteristics of the classic types of manufacturing processes and how different choices support different market requirements. It will also be explained that how different manufacturing processes can be linked together via the supply chain. We will develop a product-based layout using line balancing and calculate basic performance measures for the line.

**Session 6: CAPACITY PLANNING**

What is capacity?

Methods of evaluating capacity alternatives

Design & Effective Capacity, Capacity Cushion, Capacity considerations

Managing demand, Capacity Planning

Leading vs Lagging Strategies

Single & Multiple Product Break Even Analysis for Capacity Planning

*In-Class Activity*

1. *Exercise Problems: 8, 12, 22*

**Learning Outcomes**

Participants will be explained what capacity is, how firms measure capacity, and the difference between theoretical and rated capacity. The pros and cons associated with three different capacity related strategies will be discussed and finally different analytical tools will be discussed for capacity related decisions.

**Session 7: LOCATION STRATEGIES**

Factors Affecting Location Decisions

Methods for Evaluating Location Alternatives

Factor Rating Method, Load-Distance Methods, Center of Gravity Method

Service location Strategy

*In-Class Activity*

1. *Exercise Problems: 1,4,5,6*

**Learning Outcomes**

Identify and explain major factors that affect location decisions, Apply the factor-rating method, location break-even analysis and center-of-gravity method

**Session 8: 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

*In-Class Activity*

*Exercise Problems: 1,4,6*

**Learning Outcomes**

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

**Session 9: HUMAN RESOURCES & JOB DESIGN**

Job Design, Ergonomics

Time Motion Studies

Establishing Work Standards

Work Sampling

*In-Class Activity*

*Exercise Problems: 7,12,14*

**Learning Outcomes**

Understand major issues in job design, understand major ergonomic and work environment issues, and learn procedures for work measurement.

**Session 10,11,12: Managing Inventory throughout the supply chain**

The role of inventory

ABC analysis, Record accuracy, Cycle counting

Inventory types and drivers

Independent versus dependent demand inventory

Periodic review systems

Fixed Period Systems

Continuous review systems

Basic EOQ Inventory Model

*In-Class Activity*

*Exercise Problems: 2,5,9,12,17,20,24,30,31*

**Learning Outcomes**

In these sessions participants will learn various roles of inventory and distinguish between independent demand and dependent demand inventory. We will also try to learn different calculation methods of inventory models. It will also be discussed that how inventory decisions affect other areas of the supply chain.

**Session 13: JIT & LEAN OPERATIONS**

JIT layout, inventory

Scheduling and quality

Lean operations

**Learning Outcomes**

Participant will be able to define just-in-time, TPS, and lean operations. They should also be having understanding of the seven wastes and the 5Ss, Explain JIT partnerships.

**Recommended Book (s) & Text:**

“Operations Management” (8th Edition) by Render and Heizer, Prentice Hall Publishers.

“Introduction to Operations and Supply Chain Management” (3rd Edition)By Bozarth and Handfield. Prentice Hall Publishers.

**E-Resources:** [**http://moodle.umt.edu.pk**](http://moodle.umt.edu.pk)

**ASSESSMENT METHODOLOGY**

|  |  |
| --- | --- |
| Attendance & Class Participation | 10 |
| Assignments | 15 |
| Class Tests | 20 |
| Mid Term Exam | 20 |
| Final Term Exam | 35 |
| Total | 100 |

**CALENDAR OF ACTIVITIES**

|  |  |  |  |
| --- | --- | --- | --- |
| **Session** | **Topics** | **Activities** | **Assessment** |
| 1 | Introduction. Role of Operations Management (OM) as one of the Three Core Functions in an Organization. Significant Contributions in field of OM |  |  |
| 2 | Future trends in OM, , Difference b/w goods and services, Productivity, single factor and multi factor productivity |  | **ASSIGNMENT** |
| 3 | Developing Mission & OM Strategies, Critical Success Factors (CSF), Aligning Core Competencies with CSF, Ten OM Decisions | **YES** | **QUIZ** |
| 4 | Issues for product design, Define product life cycle  Describe a product development system, Describe how time based competition is implemented, Describe customer participation in the design and production of services |  |  |
| 5 | Four Process Strategies, Process Analysis and Design, Process Mapping, Flow Diagrams, Process Charts, Service process design, Process Re-engineering | **YES** | **ASSIGNMENT** |
| 6 | 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 |  | **QUIZ** |
| 7 | 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 |  | **MID TERM** |
| 8 | Types of Layout, Layout Design, Fixed Position Layout, Process- Oriented Layouts, Office Layout, Retail Layout, Repetitive and Product-Oriented Layout, Assembly Line Balancing | **YES** | **ASSIGNMENT** |
| 9 | Job Design, Ergonomics, Time Motion Studies, Establishing Work Standards, Work Sampling |  | **QUIZ** |
| 10 | Role of Inventory in Operations, ABC analysis, Record accuracy, Cycle counting, Inventory Models, Fixed Period Systems, | **YES** |  |
| 11 | Continuous Review Systems, Basic EOQ Inventory Model Safety Stock, Service Level, Probabilistic Models |  |  |
| 12 | Constant Lead Time (LT)-Probabilistic Demand Models, Probabilistic LT-Constant Demand Models, Probabilistic LT-Probabilistic Demand Models |  | **QUIZ** |
| 13 | JIT layout, inventory, Scheduling and quality. Lean operations |  |  |