

Course Content
Intro to Operations Management
POM3430

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Chapter 1: Introduction to Operations Management

- Introduction to Operations Management
 - What is Operations Management
 - Differences between Manufacturing and Service Organizations
 - Operations Management Decisions
 - Historical Development
 - Operations Management Today
 - How it fits

Chapter 2: Operations Strategy and Competitiveness

- Operations Strategy and Competitiveness
 - Role of operations Strategy
 - Developing a Business Strategy
 - Developing a Operations Strategy
 - Role of Technology
 - Productivity
 - How it fits

Chapter 3: Product and Process Design

- Product and Process Design
 - Product Design
 - Idea to Final Design
 - Factor's impacting Product Design
 - Process Selection
 - Limiting Process Design and Process Selection
 - Technology Decision
 - Designing Services – different from manufacturing
 - How it all fits

Chapter 4: Supply Chain Management

- Supply Chain Management
 - Basic Supply Chain
 - Issues affecting supply chain management
 - Role of purchasing
 - Sourcing Design
 - Role of warehouses
 - Implementing supply chain management
 - How it all fits

Chapter 5: Total Quality Management

- Total Quality Management
 - Defining Quality
 - Evolution of TQM
 - Philosophy of TQM
 - Customer focus/continuous improvement/employee empowerment
 - Quality Awards and Standards
 - ISO 14000; Malcolm Baldrige and other awards
 - Why TQM fails?
 - How it fits

Chapter 6: Statistical Quality Control

- Statistical Quality Control
 - What is SQC and how it differs from SPC?
 - Descriptive Statistics
 - Control Charts
 - Variable control charts
 - Attribute control charts
 - Process Capability
 - Six Sigma Quality
 - Acceptance Sampling
 - SQC for services
 - How it fits?

Chapter 7: Just-In-Time and Lean Systems

- Just-In-Time and Lean Systems
 - Philosophy – eliminate waste
 - Elements of JIT
 - JIT Manufacturing systems
 - Pull Systems/Kanban Systems
 - JIT and TQM
 - Respect for People
 - Benefits of JIT
 - JIT in services
 - How it fits?

Chapter 8: Forecasting

- Forecasting
 - Principles of forecasting
 - Types of forecasting – Qualitative and Quantative
 - Time Series Model, trend and Seasonality
 - Causal Models – linear regression/non-linear multiple regression
 - Measuring Accuracy
 - Selecting the right forecasting model
 - Collaborative Planning, Forecasting and Replenishment (CPFR)
 - How it fits?

Mid-Term Exam

- Chapters 1 - 8

Chapter 9: Capacity Planning

- Capacity Planning
 - Importance of Capacity Planning
 - Making Capacity plans
 - Location plans
 - Making location decision
 - Capacity planning and location decision
 - How it fits?

Chapter 10: Facility Layout

- Types of Layout
 - Process/Product/Hybrid/ Fixed position
- Design – Process Layout
- Design – Product Layout
- Cell layout
- How it all fits

Chapter 11: Work System Design

- Job Design – Machines or People
- Work Measurement
- Compensation
- How it fits?

Chapter 12: Inventory Management

- Inventory Management
 - Basic Principles
 - Inventory Management Objectives
 - Inventory Costs
 - ABC inventory classification
 - Record Accuracy
 - Determining order quantity
 - Safety Stock levels
 - Periodic Review
 - How it fits?

Chapter 13: Aggregate Planning

- Business Planning
 - Demand
 - Capacity based
- Aggregate Planning Strategy
 - Level
 - Chase
 - Hybrid
- Developing the Aggregate Pla
- How it fits?

Chapter 14: Resource Planning

- Resource Planning
 - Enterprise Resource Planning
 - Benefits and costs with ERP
 - Material Planning System
 - How MRP works
 - Capacity Planning Requirement
 - How It fits?

Chapter 15: Scheduling

- Scheduling
 - High Volume/Low Volume/Shop Loading
 - Developing a Schedule of operation
 - Optimized Production Technology
 - Scheduling for Service Organization
 - How it fits

Chapter 16: Project Management

- Project Management
 - Product Life Cycle
 - Project Management Concept
 - Estimating probability of completion dates
 - Reducing project completion times
 - Critical Chain Approach
 - How it fits?

Final Exam