

College of San Mateo
Official Course Outline

1. **COURSE ID:** BUS. 206 **TITLE:** Operations and Supply Chain Management
Units: 3.0 units **Hours/Semester:** 48.0-54.0 Lecture hours; and 96.0-108.0 Homework hours
Method of Grading: Letter Grade Only
Recommended Preparation:
 Eligibility for ENGL 105, or Eligibility for ENGL 100

2. **COURSE DESIGNATION:**
Degree Credit
Transfer credit: CSU

3. **COURSE DESCRIPTIONS:**
Catalog Description:
 This course introduces students to concepts and tools in operations and supply chain management exploring modern global strategies. Topics include operations, inventory management, quality control, strategic alliances, procurement and outsourcing, global logistics and the impact of information technology on supply chain management, as well as topics related to sustainability, humanitarian logistics, and ethical business practices.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
 Upon successful completion of this course, a student will meet the following outcomes:
 1. Explain the strategic role of operations in creating a firm's global competitive advantage.
 2. Apply analytical skills in solving operational issues in a global context.
 3. Demonstrate an understanding of the importance of supplier relationships management.
 4. Evaluate strategies in global supply chain procedures including manufacturing and transportation and apply ethical standards.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
 Upon successful completion of this course, a student will be able to:
 1. Explain the operations management and value chains.
 2. Recall the history and various eras of operations in comparison to today's operational challenges.
 3. Evaluate the efficiency of an operations and supply chain management plans.
 4. Describe role of forecasting in operations and supply chain management.
 5. Apply appropriate quality control methods to various operations organizations.
 6. Identify lean operating systems and tools.
 7. Discuss the Just-In-Time inventory systems.
 8. Apply Total Quality Management to an operational plan.

6. **COURSE CONTENT:**
Lecture Content:
BASIC CONCEPTS OF OM AND VALUE CHAINS
 1. Operations Management and Value Chains
 - 1-1. Operations Management
 - 1-2. OM in the Workplace
 - 1-3. Understanding Goods and Services
 - 1-4. The Concept of Value
 - 1-5. Customer Benefit Packages
 - 1-6. Value Chains
 - 1-7. Value Chain Frameworks
 - 1-8. A History of Change and Challenge
 2. Measuring Performance in Operations and Value Chains
 - 2-1. Types of Performance Measures
 - 2-2. Analytics in Operations Management
 - 2-3. Designing Measurement Systems in Operations
 - 2-4. Models of Organizational Performance
 3. Operations Strategy
 - 3-1. Gaining Competitive Advantage

- 3-2. Understanding Customer Wants and Needs
- 3-3. Evaluating Goods and Services
- 3-4. Competitive Priorities
- 3-5. OM and Strategic Planning
- 3-6. A Framework for Operations Strategy
- 4. Technology and Operations Management
 - 4-1. Understanding Technology in Operations
 - 4-2. Technology in Value Chains
 - 4-3. Benefits and Challenges of Technology
 - 4-4. Technology Decisions and Implementation
- 2. DESIGNING OPERATIONS AND SUPPLY CHAINS**
 - 5. Goods and Service Design
 - 5-1. Designing Goods and Services
 - 5-2. Customer-Focused Design
 - 5-3. Designing Manufactured Goods
 - 5-4. Service-Delivery System Design
 - 5-5. Service-Encounter Design
 - 5-6. An Integrative Case Study of LensCrafters
 - 6. Supply Chain Design
 - 6-1. Global Supply Chains
 - 6-2. Supply Chain Design Trade-Offs
 - 6-3. A Global Supply Chain Example: Inditex/Zara
 - 6-4. Location Decisions
 - 6-5. Supply Chain Optimization
 - 7. Process Selection, Design, and Improvement
 - 7-1. Process Choice Decisions
 - 7-2. The Product-Process Matrix
 - 7-3. The Service-Positioning Matrix
 - 7-4. Process Design
 - 7-5. Mistake-Proofing Processes
 - 7-6. Process Improvement
 - 8. Facility and Work Design
 - 8-1. Facility Layout
 - 8-2. Designing Product Layouts
 - 8-3. Designing Process Layouts
 - 8-4. Work Measurement
 - 8-5. Workplace and Job Design
- 3. MANAGING OPERATIONS AND SUPPLY CHAINS**
 - 9. Forecasting and Demand Planning
 - 9-1. Forecasting and Demand Planning
 - 9-2. Basic Concepts in Forecasting
 - 9-3. Statistical Forecasting Models
 - 9-4. Regression as a Forecasting Approach
 - 9-5. Judgmental Forecasting
 - 9-6. Forecasting in Practice
 - 10. Capacity Management
 - 10-1. Understanding Capacity
 - 10-2. Capacity Measurement
 - 10-3. Long-Term Capacity Strategies
 - 10-4. Short-Term Capacity Management
 - 10-5. Learning Curves and Capacity Requirements
 - 11. Process Analysis and Resource Utilization
 - 11-1. Resource Utilization
 - 11-2. Process Throughput and Bottlenecks
 - 11-3. Little's Law
 - 11-4. Managing Waiting Lines
 - 11-5. Simulation Models for Analyzing Queueing Processes
 - 11-6. The Theory of Constraints
 - 12. Managing Inventories in Supply Chains
 - 12-1. Understanding Inventory

- 12-2. Inventory Characteristics
- 12-3. ABC Inventory Analysis
- 12-4. Managing Fixed-Quantity Inventory Systems
- 12-5. Managing Fixed-Period Inventory Systems
- 12-6. Single-Period Inventory Model
- 12-7. Simulation Modeling of Inventory Systems
- 13. Supply Chain Management and Logistics
 - 13-1. Managing Supply Chains
 - 13-2. Logistics
 - 13-3. Risk Management in Supply Chains
 - 13-4. Supply Chains in E-Commerce
 - 13-5. Measuring Supply Chain Performance
 - 13-6. Sustainability in Supply Chains
- 14. Resource Management
 - 14-1. Resource Planning Framework for Goods and Services
 - 14-2. Aggregate Planning Options
 - 14-3. Strategies for Aggregate Production Planning
 - 14-4. Using Optimization Models for Resource Management
 - 14-5. Disaggregation in Manufacturing
 - 14-6. Capacity Requirements Planning
- 15. Operations Scheduling and Sequencing
 - 15-1. Understanding Scheduling and Sequencing
 - 15-2. Scheduling Applications and Approaches
 - 15-3. Sequencing
 - 15-4. Dispatching Rules for Job Shop Scheduling
 - 15-5. Two-Resource Sequencing Problem
 - 15-6. Schedule Monitoring and Control
 - 15-7. Vehicle Routing and Scheduling
- 16. Quality Management
 - 16-1. Understanding Quality
 - 16-2. Influential Leaders in Modern Quality Management
 - 16-3. The Gap Model
 - 16-4. ISO 9000
 - 16-5. Six Sigma
 - 16-6. Cost-of-Quality Measurement
 - 16-7. The “Seven QC Tools”
 - 16-8. Other Quality Improvement Strategies
- 17. Quality Control and SPC
 - 17-1. Quality Control Systems
 - 17-2. Variation and Statistical Process Control
 - 17-3. Constructing Control Charts
 - 17-4. Practical Issues in SPC Implementation
 - 17-5. Process Capability
- 18. Lean Operating Systems
 - 18-1. Principles of Lean Operating Systems
 - 18-2. Lean Tools and Approaches
 - 18-3. Lean Six Sigma
 - 18-4. Lean Manufacturing and Service Tours
 - 18-5. Just-in-Time Systems
- 19. Project Management
 - 19-1. The Scope of Project Management
 - 19-2. Techniques for Planning, Scheduling, and Controlling Projects
 - 19-3. Time/Cost Trade-Offs
 - 19-4. Uncertainty in Project Management

7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Lecture
- B. Critique
- C. Activity

- D. Discussion
- E. Guest Speakers
- F. Other (Specify): Small group projects to evaluate industry specific cases, or to create a preliminary operations or supply chain management plan.

8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

Research papers, case study analysis, hypothetical supply chain plan.

Reading Assignments:

Text book readings, case studies, news articles.

9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Class Participation
- B. Class Performance
- C. Class Work
- D. Exams/Tests
- E. Group Projects
- F. Homework
- G. Oral Presentation
- H. Papers
- I. Projects
- J. Quizzes
- K. Research Projects
- L. Written examination

10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. Collier, David A., Evans, James. *Operations and Supply Chain Management*, 2nd ed. Boston, MA: Cengage Publishing, 2021

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Course Originator: Lale Yurtseven