Miami Dade College

Course Description

MAN3506 | Operations Management | 3.00 credits

The course emphasizes the application of operational decision-making techniques to improve process, productivity, and the effective utilization of resources within organizations. Students will learn to recognize the trade-offs associated with operations management decisions and their effect on resource allocation. Topics include production processes, operations strategies, quantitative techniques, quality, performance, capacity planning, efficiency, forecasting, resource management, statistical process control, project management, and supply chains. Prerequisites: MAN 2021, QMB2100 and TRA3132.

Course Competencies:

Competency 1: The student will analyze the role and importance of operations managers within the firm by:
1. Examining the general concepts and importance of operations management in organizations
2. Evaluating the decisions faced by operations managers
3. Analyzing the differences between goods and services
4. Examining the role of process in Operations Management and identifying general types of processes
5. Examining the historical development of Operations Management and describing current challenges
6. Analyzing operations and supply chains in terms of inputs, processes, outputs, information flows, suppliers and customers

Competency 2: The student will be able to understand and apply the concept of value chains within the firm by:
1. Analyzing the concept of value and describing a value chain and its characteristics
2. Examining outsourcing and vertical integration in value chains
3. Evaluating issues that managers must consider when making decisions about insourcing, outsourcing, and offshoring
4. Analyzing essential issues to consider associated with value chains in a local, regional, and global business environment
5. Assessing the role and importance of sustainability in value chains

Competency 3: The student will learn how to use performance measures and operations strategies by:
1. Examining the types of performance measures used for decision-making
2. Analyzing the use of analytics in operations management and how internal/external measures are related
3. Designing and using an effective performance management system
4. Analyzing varying models of organizational performance
5. Evaluating how firms use key competitive priorities as a basis for designing processes
6. Determining how companies seek to gain competitive advantage
7. Analyzing customer needs and how they evaluate products

Competency 4: The student will learn how to use technology as an enabler of service/manufacturing processes by:
1. Examining different types of technology and their roles in manufacturing and service operations
2. Evaluating the benefits and challenges of using technology to operate productively and meet customer needs
3. Assessing key technology decisions

Competency 5: The student will shall apply the concepts of selection, design, and analysis in operational decisions by:
1. Illustrating the steps involved in designing goods and services and the use of Quality Function Deployment by integrating the voice of the customer into all phases of product design through production
2. Selecting the tools and techniques used to support product design activities such as Tolerance Design and the Taguchi Loss Function
3. Analyzing the main types of processes used to produce goods and services
4. Examining the importance and use of product process and service positioning matrices
5. Determining how to use and improve process designs and analyze process maps
6. Illustrating how to compute resource utilization and its uses in process design and improvement

Competency 6: The student will understand concepts and applications of supply chain management firms by:
1. Outlining the basic concepts of Supply Chain Management
2. Analyzing critical issues in the design of supply chains and defining metrics used in measuring supply chain performance
3. Evaluating important factors and decisions in locating facilities
4. Analyzing the role of transportation, supplier evaluation, technology, and inventory in supply chain management

Competency 7: The student will explain, identify, and apply concepts of capacity management by:
1. Analyzing the capability of a manufacturing or service resource in terms of rate of output or availability
2. Outlining, computing, and using capacity measures for a manufacturing or service system
3. Differentiating between short-term capacity adjustment strategies and long-term capacity expansion strategies
4. Examining and using the theory of constraints

Competency 8: The student will use forecasting and demand planning techniques to predict future demand by:
1. Determining the importance of forecasting and demand planning in the value chain
2. Examining the use of basic forecasting models to make production decisions
3. Selecting how to apply and use statistical forecasting models to operations management decisions
4. Comparing and contrasting the different statistical forecasting models and determining their appropriate use

Competency 9: The student will explain and describe inventory management practices by:
1. Illustrating the importance of inventory management, the types of inventories, key decisions, and associated costs
2. Comparing the significant factors affecting inventory decisions
3. Evaluating and applying ABC inventory analysis to provide helpful information for controlling inventories
4. Evaluating how a fixed-order quantity inventory system operates and how to use EOQ and safety stock models
5. Comparing the uses and applications of fixed-period inventory systems and the single-period inventory model

Competency 10: The student will identify resource management, operations scheduling, and sequencing concepts by:
1. Examining the overall frameworks for resource planning in both goods-producing and service-producing organizations
2. Developing options for aggregate planning
3. Illustrating the concept and application of capacity requirements planning
4. Examining Materials Requirements Planning (MRP) and its uses
5. Explaining the concepts of scheduling and sequencing in operations management
6. Describing how to solve single- and two-resource sequencing problems
7. Explaining the uses of Gantt charts in monitoring production activities and processes

Competency 11: The student will explain and describe the concepts and philosophies of quality management by:
1. Explaining the concepts and definitions of quality
2. Evaluating the quality management philosophies of Deming, Juran, and Drucker
3. Explaining the GAP model and its importance in quality management
4. Interpreting the concepts and philosophy of ISO 9000: 2000, and the philosophy and methods of Total Quality Management (TQM) and Six Sigma
5. Describing how to apply the Seven QC Tools
6. Examining other Quality Improvement Strategies such as Kaizen

Competency 12: The student will describe, explain, and apply statistical process control and tools by:
1. Comparing quality control systems and critical issues in manufacturing and service
2. Explaining the concept of Statistical Process Control (SPC) and the types of variation
3. Illustrating how to construct and interpret simple process control charts for continuous and discrete data
4. Explaining process capability and calculating process capability indexes
5. Critiquing process reengineering and process improvement
6. Describing practical issues in the implementation of SPC

Learning Outcomes:
- Use quantitative analytical skills to evaluate and process numerical data
- Create strategies that can be used to fulfill personal, civic, and social responsibilities