THOMPSON RIVERS UNIVERSITY

Course Outline

Department of Management
School of Business and Economics

SCMN 4310-3
Operations Management (3,0,0)

Calendar Description

Students study the design, planning, establishment, operation, control and improvement of all activities in the creation of a firm's products. Practices in both manufacturing and service businesses are explored. Topics include an introduction to operations management; project management; total quality management; product and process design; job design and measurement; facility layout and assembly line balancing; material requirement planning and production scheduling; capacity management; inventory management; and decision tools including simulation, linear programming and decision analysis.

Educational Objectives/Outcomes

Upon completion of this course, students will:

1. Identify the main concepts and principles in making operations management decisions.
2. Develop project schedules and asses project completion times.
3. Examine the underlying tools in total quality management.
4. Evaluate product and process design strategies.
5. Design and measure the contents of a work element.
6. Examine various facility layouts and design workstations using assembly line balancing.
7. Develop material requirement plans.
8. Analyze process selection and capacity management strategies.
9. Compute lot sizes in inventory management.
10. Apply decision tools such as simulation, linear programming and decision analysis.

Prerequisites

MATH 1170 or equivalent; SCMN 3320

Co-requisites

None

Texts/Materials

Heizer, J. and Render, B. Operations Management, 10th Edition. Prentice-Hall, New Jersey, 2011.

Stevenson, W.J. and Hojati, M., Operations Management, 4th Canadian Ed., McGraw-Hill.

Student Evaluation

Midterm	30%
Assignments/quizzes/cases	30%
Final exam	40%

Course Topics

1. Introduction to Operations Management
   - Definition of operations management (OM)
   - Historical evolution of OM
   - Importance of OM
   - Global operations

2. Project Management
   - Definitions of project management and project terminology
   - Project break-down
   - Project planning and scheduling
     - Project evaluation and review techniques (PERT)
     - Critical path method (CPM)

3. Total Quality Management
   - Definitions of quality and quality dimensions
   - Total quality management
     - Continuous improvement
     - Benchmarking
     - Quality tools
   - Statistical process control and process capability

4. Product and Process Design
   - Goods and service selection
   - Quality function development
   - Issues for product design
   - Make or buy decisions
   - Service design & blueprinting

5. Job Design and Measurement
   - Job Design
   - Job expansion, rotation and specialization
   - Work measurement & time studies

- Method analysis and work measurement
- Work sampling

6. Facility Layout and Assembly Line Balancing
   - Layout strategies
     - Process oriented layout
     - Product oriented repetitive layout
     - Flow line and assembly layouts
     - Fixed position layout
     - Group technology layout
     - Office layout
   - Assembly line balancing

7. Material Requirement Planning and Production Scheduling
   - Material Requirement Planning (MRP)
   - Bill of Materials (BOM)
   - Enterprise Resource Planning (ERP)
   - Production Planning & Scheduling

8. Capacity Management
   - Break-even capacity analysis
   - Capacity strategies
   - Capacity bottlenecks
   - Expected monetary value approach to capacity decisions

9. Inventory Management
   - Importance of inventory
   - Types of inventory
   - Dependent versus independent demand inventory models
   - Independent demand
   - Record accuracy, cycle counting and ABC analysis

10. Review of Analytic Decisions Tools in Operations Management
    - Simulation
    - Linear programming
    - Decision analysis

Methods for Prior Learning Assessment and Recognition

As per TRU policy

Attendance Requirements – Include if different from TRU Policy

As per TRU policy

Special Course Activities – Optional

Use of Technology – Optional