



## SCHOOL OF BUSINESS AND CREATIVE DESIGN

Marketing and Management Department

### Course Outline – Fall 2013

**Course Code:** MAN 1033

**Course Title:** OPERATIONS MANAGEMENT

*Prepared By:* C. VandenEnde

*Date:* August 2012

*Revised By:* C. VandenEnde

*Date:* August 2013

*Approved By:* Yvonne Clarke, Associate Dean

*Prerequisite:* MTH 2223

*Corequisite:* None

*Prerequisite for:* BUS 6003

## 1. Course Description

This course is designed to give senior business students an introduction to operations and supply chain management. It will provide foundational concepts and practical methods used in designing and running the operations of manufacturing and service firms. Its aim is to provide students with an understanding of the strategic issues related to how firms compete, as well as tactical and operational decision-making. Areas covered include: Operations and Supply Chain Strategy, Logistics, Quality Control, Project Management, Process Design, Capacity Planning Inventory Management and Aggregate Planning.

## 2. General Education and Essential Employability Skills

**This course provides the following provincial Essential Employability Skills:**

- #1: Communication
- #2: Numeracy
- #3: Critical Thinking and Problem Solving
- #4: Information Management
- #6: Personal

**Is this course approved as a General Education course?**

**No**       **Yes**

Students should refer to their program's restricted General Education courses for final determination.

## 3. Learning Outcomes

Upon successful completion of this course, the learner will be able to:

1. Identify and explain effective supply chain management practices that contribute to the success and sustainability of an enterprise
2. Identify the similarities and differences between manufacturing and service organizations
3. Describe the role of logistics and its strategic importance in supply chain management
4. Discuss the impact of JIT and Lean production systems on inventory management
5. Describe the dimensions of quality control and the role it plays on a company's operations
6. Describe and use basic project management tools to plan and monitor the progress of a project
7. Identify the factors involved in process and facility layout decisions

8. Describe process analysis techniques
9. Discuss inventory systems for independent demand and the trade-offs involved for carrying inventory
10. Discuss long-term capacity planning and apply concepts related to capacity decision making
11. Identify the key concepts of materials planning for dependent demand using MRP (material requirement planning)

#### 4. Course Objectives

The number in brackets at the end of each objective refers to the learning outcome from Section 3.

		<i>Learning Outcome Reference Number</i>
<b>Unit 1</b>	<b>Operations and Supply Chain Strategy</b>	
1.1	Discuss the strategic importance of operations and supply chain management (SCM), and why they are critical to an organization's survival	[1,2]
1.2	Describe competitive strategies for a company's success and relevant trade-offs	[1]
1.3	Illustrate differences and similarities between manufacturing and service activities	[2]
1.4	Characterize supply chain strategy and functions within a single organization and across multiple organizations	[1]
1.5	Identify and describe types of service and manufacturing technologies that have improved operations and SCM	[1]
1.6	Discuss the evolution and current issues in SCM	[1]
<b>Unit 2</b>	<b>Logistics</b>	
2.1	Describe the importance of logistics to SCM and the major decision areas that make-up the logistics function	[1,3]
2.2	Describe logistics performance in terms of efficiency and effectiveness of serving the customer	[1,2,3]
2.3	Identify the advantages and disadvantages of the various modes of transportation and discuss the role of multimodal solutions	[3]
2.4	Discuss the major types of warehousing solutions and their benefits	[3]
2.5	Describe materials handling and order picking procedures for short-distance movement of goods	[3]

2.6	Describe factors that affect location decisions for both manufacturing and service organizations	[2,3]
2.7	Use the centre-of-gravity approach to identify ideal facility locations	[3]
<b>Unit 3</b>	<b>Just-in-time (JIT) and Lean Enterprise</b>	
3.1	Describe the concepts of lean production and lean thinking	[4]
3.2	Explain the different kinds of waste present in a production system	[4]
3.3	Describe the components of lean production system, including the concept of JIT inventory	[4]
3.4	Identify differences between push and pull production systems	[4]
3.5	Calculate economical batch size	[4]
3.6	Explain the concept of continuous improvement	[4]
<b>Unit 5</b>	<b>Quality Management</b>	
5.1	Discuss the definition of quality and why quality is important to operations and supply chains	[1,2,5]
5.2	Explain why it is necessary to improve the quality of goods and services	[2,5]
5.3	Define the dimensions of quality in goods and services	[2,5]
5.4	Describe the different costs of quality, including internal and external failure, appraisal and prevention costs	[5]
5.5	Describe commonly used quality management approaches, such as total quality management (TQM), ISO 9000 and ISO 14000 standards and the Malcolm Bridge Criteria	[5]
5.6	Describe Six Sigma quality management approach and the steps in implementing it	[5]
<b>Unit 6</b>	<b>Project Management</b>	
6.1	Explain what a project is and the steps involved in project management	[1,6]
6.2	Describe the role of a project manager	[6]
6.3	Describe various project management tools and techniques, such as work breakdown structure, critical path methods and cost and time trade-off analysis	[6]
6.4	Construct a Gantt chart to schedule a project	[6]
6.5	Construct a project network diagram and calculate the earliest and latest start and finish times for all activities	[6]

6.6	Identify the critical activities and paths in a network	[6]
6.7	Evaluate the effect of crashing activity times	[6]
6.8	Discuss success factors in project management	[6]
<b>Unit 7</b>	<b>Process Design and Facility Layout</b>	
7.1	Describe the service-process matrix for service organizations	[1,2,7]
7.2	Describe the product-process matrix for manufacturing organizations	[1,2,7]
7.3	Identify key differences between various process types	[3,7]
7.4	Contrast the various types of facility layouts	[2,3,7]
7.5	Discuss the various process analysis techniques including break-even analysis, reengineering and bottleneck analysis	[7,8,9]
<b>Unit 8</b>	<b>Inventory Management</b>	
8.1	Identify the reasons for carrying inventory and cost trade-offs involved	[1,9]
8.2	Describe the various classifications of inventory	[9]
8.3	Describe prominent inventory systems	[9]
8.4	Explain and use the economic order quantity (EOQ) model for independent inventory	[9]
8.5	Compute a re-order point and order lead time	[9]
8.6	Explain the use of an ABC analysis	[9]
<b>Unit 9</b>	<b>Capacity Planning</b>	
9.1	Describe the concept of capacity and the importance of managing capacity over time	[1,10]
9.2	Describe methods of measuring capacity, planning capacity and calculating capacity utilization	[10]
9.3	Explain the impact of economies and diseconomies of scale, and experience curves on the estimation of capacity	[10]
9.4	Explain difference in capacity strategy in terms of the timing and sizing of expansion options	[10]
9.5	Describe the benefits of a capacity cushion and the strategic reasons to increase or decrease the cushion	[10]
9.6	Assess various capacity alternatives	[10]

## Unit 10 Materials Requirements Planning (MRP)

- 10.1 Define dependent demand, MPS (master production schedule) and MRP [11]
- 10.2 Describe the benefits of MRP and where it can be used [1,11]
- 10.3 Explain the inputs to an MRP system [11]
- 10.4 Compute single-level MRP records [11]
- 10.5 Discuss the relationship between MRP and enterprise-resource planning (ERP) [11]

## 5. Resources and Supplies

### a. Required

Boyer, K. & Verma, R. (2010). *Operations and Supply Chain Management for the 21<sup>st</sup> Century* (1<sup>st</sup> Ed). Mason: South-Western.

### b. Supplemental

Student textbook website: [www.cengage.com](http://www.cengage.com)

## 6. Methodology

This course will consist of interactive lectures, discussion and questioning, cases and video presentations designed to explain the concepts and principles of operations and supply chain management.

## 7. Student Evaluation

The following elements will determine the student's final grade:

Tests (3 Term Tests @ 30%)	90%
Assignments	10%
<b>Total</b>	<b>100%</b>

The round off mathematical principle will be used. Percentages are converted to letter grades and grade points as follows:

Mark (%)	Grade	Grade Point	Mark	Grade	Grade Point
94-100	A+	4.0	67-69	C+	2.3
87-93	A	3.7	63-66	C	2.0
80-86	A-	3.5	60-62	C-	1.7
77-79	B+	3.2	50-59	D	1.0
73-76	B	3.0	0-49	F	0.0
70-72	B-	2.7			

### Missed Test Policy

Adequate notice will be given of impending tests and if the student is not present, the result is recorded as zero. The instructor may make an exception and allow the

test to be written at a time other than the scheduled test time, provided that:

- a) A medical certificate is presented as proof of the student's inability to have been present at the scheduled time, or
- b) The instructor has agreed *in advance* that there is justification for the learner not being present at the scheduled time.

It is the student's responsibility to understand and follow the rules above.

## 8. Related Items

### ***Students with Disabilities***

If you are a student with a disability please identify your needs to the professor and/or the Accessibility Centre so that support services can be arranged for you. You can do this by making an appointment at the Accessibility Centre, Room L103 ext.3427 or by arranging a personal interview with the professor to discuss your needs.

### ***Student Rights and Responsibility Policy***

*Acceptable behaviour in class is established by the instructor and is expected by all students. Any form of harassment or violence will not be tolerated. Action will be taken as outlined in Lambton College policy.*

*Cheating and plagiarism are serious academic offences subject to disciplinary action. It is the student's responsibility to be aware of the cheating policy as described in the Lambton College Student Rights and Responsibilities policy. For further information on all of these policies, links may be found on the Lambton College website.*

### ***Prior Learning Assessment Statement***

*This course is eligible for Prior Learning Assessment*

**Yes**       **No**

*If yes has been selected, you may choose to contact the Counselling Department for advice on Prior Learning Assessment.*

### ***Date of Withdrawal without Academic Penalty***

*Please consult the Academic Regulations and Registrar's published dates.*

### ***Waiver of Responsibility***

*Every attempt has been made to ensure the accuracy of this information as of the date of publication. The content may be modified, without notice, as deemed appropriate by the College.*

*Note: It is the student's responsibility to retain course outlines for possible future use to support applications for transfer of credit to other educational institutions.*