

ITT Technical Institute
BU3310
Operations Management
Onsite Course

SYLLABUS

Credit hours: 4.5

Contact/Instructional hours: 45 (45 Theory Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisites: MA3110 Statistics or equivalent

Course Description:

This course examines operational workflow processes in a business organization.

Topics include productivity measurement, operational efficiency, cost-effectiveness and designing need-to-product conversion workflows.

Where Does This Course Belong?

This course is required for the Bachelors Degree in Business management program.

The following diagram demonstrates how this course fits in the program:

Course Summary

Major Instructional Areas

1. The strategy of designing operation functions and productivity
2. Systems, processes, and procedures
3. Supply chain
4. Conversion of inputs to outputs
5. Management of resources
6. Quantitative decision-making

Course Objectives

1. Assess the workflow in a business for its value-added components.
2. Participate in the design of production layout.
3. Select an effective sourcing strategy.
4. Manage raw materials and human resources to optimize efficiency.
5. Evaluate the productivity of an operation and make recommendations to improve performance.
6. Demonstrate use of productivity software (quantitative modeling).

Learning Materials and References

Required Resources

Textbook Package	New to this Course	Carried over from Previous Course(s)	Required for Subsequent Course(s)
Heizer, J., & Render, B. (2012). Operations Management (Custom 10th ed.). Boston, MA: Pearson Custom		■	
Heizer, J. (2011). DVD Library for Operations Management (10th ed.). Upper Saddle River, NJ: Prentice Hall/D.	■		
Operations Management Companion Website: http://wps.prenhall.com/bp_heizer_opsmgmt_10	■		

Other Items	New to this Course	Carried over from Previous Course(s)	Required for Subsequent Course(s)
POM for Windows or OM Excel	■		
Microsoft Project		■	

Technology Requirements

Minimum Requirements for Computer:

- Pentium III (min.) or equivalent processor (Macintosh or UNIX/Linux-based machines are not supported)
- 256 MB RAM (512 MB preferred)
- 2 GB free space (5 GB preferred) on master drive
- CD-ROM drive

Minimum Requirements for Software:

- Windows 2000 or XP (or higher)
- Microsoft Office 2007 (or higher)
- Internet Explorer 5.5 (or higher)

Minimum Requirements for Internet Service:

- 56Kbps modem (cable or DSL strongly preferred)

Recommended Resources

Books, Professional Journals

- Journal of Operations Management (Elsevier and APICS)
http://www.elsevier.com/wps/find/journaldescription.cws_home/523929/description
- International Journal of Operations & Production Management
<http://www.emeraldinsight.com/products/journals/journals.htm?id=ijopm>

Professional Associations

- The Association for Operations Management (APICS): <http://www.apics.org/default.htm>
- Production and Operations Management Society: <http://www.poms.org/>
- Japanese Operations Management and Strategy Association: <http://e-jomsa.jp/annaieng.html>

ITT Tech Virtual Library (accessed via Student Portal)

Books > Ebrary>

- Aswathappa, K. & Bhat, S. (2010). *Production and operations management*. Mumbai, India: Global Media.
- Giri, S. (2010). *Operations research and quality management*. Jaipur, India: Global Media.

Other useful links:

- Free Management Library: Operations Management
<http://managementhelp.org/operationsmanagement/>
- Statistical Quality Control
<http://www.wiley.com/college/sc/reid/chap6.pdf>
- Lean Six Sigma: Free Management Resources
<http://www.moresteam.com/toolbox/>
- Cambridge University: Institute for Manufacturing
<http://www.ifm.eng.cam.ac.uk/dstools/process/mrp.html>

Information Search

Use the following keywords to search for additional online resources that may be used for supporting your work on the course assignments:

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- Operations management
- Business operations
- Inventory management
- Lean manufacturing
- Six Sigma
- Operations research

- Project management
- Process mapping
- Work breakdown structure
- Industrial engineering

NOTE: All links are subject to change without prior notice.

Course Plan

Suggested Learning Approach

In this course, you will be studying individually and within a group of your peers. As you work on the course deliverables, you are encouraged to share ideas with your peers and instructor, work collaboratively on projects and team assignments, raise critical questions, and provide constructive feedback.

Use the following advice to receive maximum learning benefits from your participation in this course:

DO	DON'T
<ul style="list-style-type: none">▪ Do take a proactive learning approach.▪ Do share your thoughts on critical issues and potential problem solutions.▪ Do plan your course work in advance.▪ Do explore a variety of learning resources in addition to the textbook.▪ Do offer relevant examples from your experience.▪ Do make an effort to understand different points of view.▪ Do connect concepts explored in this course to real-life professional situations and your own experiences.	<ul style="list-style-type: none">▪ Don't assume there is only one correct answer to a question.▪ Don't be afraid to share your perspective on the issues analyzed in the course.▪ Don't be negative about the points of view that are different from yours.▪ Don't underestimate the impact of collaboration on your learning.▪ Don't limit your course experience to reading the textbook.▪ Don't postpone your work on the course deliverables – work on small assignment components every day.

Course Outline

Unit 1: INTRODUCTION TO OPERATIONS MANAGEMENT AND OPERATIONS STRATEGY IN A GLOBAL ENVIRONMENT

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Define operations management and describe the application to services and manufacturing industries.
- Explain the role of the operations manager and the 10 critical OM decision areas.
- Analyze productivity and compute single factor and multifactor productivity in business examples.
- Using real examples compare and contrast the influences of the 10 OM decisions for goods versus services.
- Describe the role of operations management in achieving competitive strategy.
- Analyze operations management style using the Ethical Dilemma self-test.
- In a case study application, analyze productivity and recommend strategies for improvement.

READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> • Heizer & Render, Chapter 1 and Chapter 2 • Video Case Study: "Frito-Lay: Operations Management in Manufacturing" 	Discussions	Unit 1 Discussion 1: The 10 Critical OM Decisions	1%
	Problem Sets	Unit 1 Problem Set 1	1%
	Assignment	Unit 1 Assignment 1: Case Study: Frito-Lay Operations Management in Manufacturing	2%
	Quizzes	Unit 1 Quiz 1	1%

Unit 2: PRODUCT STRATEGIES AND PROCESS STRATEGIES

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Explain the product life cycle and the processes associated with product development.
- Compare and contrast the approaches and issues with product versus service design.
- Using the ITT Tech Virtual Library, identify and evaluate the response of a new product, service development, or new process in an existing company.
- Construct a House of Quality and discuss the implications of quality in operations management.
- Identify and evaluate an organizational quality control problem and recommend possible resolutions or improvements.
- Describe four key process strategies.
- Compare and contrast types of processes using appropriate illustrations.

<ul style="list-style-type: none"> • Explain the key elements of sustainability on organizational performance with business examples. • Utilize data to determine the best strategy for process issues. • Analyze operations management style using an ethical dilemma self-test. 			
READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> • Heizer & Render, Chapter 5 and Chapter 7 • Video Case Study: "Green Manufacturing and Sustainability at Frito-Lay" 	Discussions	Unit 2 Discussion 1: Productivity and Sustainability	1%
	Problem Sets	Unit 2 Problem Set 1	1%
	Research Papers	Unit 2 Research Paper 1: De Mar's Product Strategy	1.4%
	Assignments	Unit 2 Assignment 1: Case Study: Green Manufacturing and Sustainability at Frito-Lay	2%
	Quizzes	Unit 2 Quiz 2	1%

Unit 3: LOCATION STRATEGIES AND LAYOUT STRATEGIES **Unit Duration:**
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Describe the factors affecting location decisions.
- Select a location based on computing weighted factors.
- Apply location strategies to a business and justify the decision.
- Describe the types and the strategic importance of layout strategies.
- Design a proposed layout design for a sample production and substantiate your choices.
- Use data to complete movement cost and improve a layout.
- Using a current business example, analyze the variables in layout and the implication to managers and customers.
- Research companies for an actual operations management issue, outlining the primary problem for project analysis.

READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> • Heizer & Render, Chapters 8 and 9 • Video Case Study: "Wheeled Coach: Facility Layout" 	Discussions	Unit 3 Discussion 1: Location Decisions	1%
	Problem Sets	Unit 3 Problem Set 1	1%
	Assignments	Unit 3 Assignment 1: Case Study: Facility Layout at Wheeled Coach	2%
	Research Papers	Unit 3 Research Paper 1: Operations Management Issues in Current Business	1.7%

	Quizzes	Unit 3 Quiz 3	1%
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Unit 4: HUMAN RESOURCES, JOB DESIGN, AND WORK MEASUREMENT

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Describe the major issues in job design for Human Resources.
- Using actual examples, apply various tools and techniques to improve job design.
- Recommend and justify quality improvements to a sample “work life” strategy.
- Use time studies to compute standard time.
- In a case study application, analyze the HR strategy of a company.
- Analyze operations management style using the Ethical Dilemma self-test.
- Research and identify specific operations management issues (related to environment, sustainability, productivity, ethics, etc.) for a project.

READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> • Heizer & Render, Chapter 10 • Video Case Study: “Hard Rock Café’s Human Resource Strategy” 	Discussions	Unit 4 Discussion 1: Job Design Issues	1%
	Problem Sets	Unit 4 Problem Set 1	1%
	Assignments	Unit 4 Assignment 1: Case Study: Hard Rock’s Human Resource Strategy	2%
	Research Papers	Unit 4 Research Paper 1: Ethics in Human Resources and Job Design	1.7%
	Quizzes	Unit 4 Quiz 4	1%

Unit 5: SUPPLY CHAIN MANAGEMENT AND OUTSOURCING

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Describe the strategic importance of supply-chain management.
- Using the ITT Tech Virtual Library, find and describe real business examples to correlate with the six supply chain strategies.
- Identify the key measures in supply chain management.
- Describe the impact of logistics management on operations with examples.
- Use a data model to select a vendor.
- Use a data model to rate the international risk factors for an outsourcing decision.
- Select an effective sourcing strategy in a case study format.
- Create a proposal for an outsourcing solution to supply-chain management issues with advantages and disadvantages and recommendations.

READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)

<ul style="list-style-type: none"> Heizer & Render, Chapter 11 	Discussions	Unit 5 Discussion 1: Darden Global Supply Chains	1%
	Problem Sets	Unit 5 Problem Set 1	1%
	Assignments	Unit 5 Assignment 1: Case Study: Dell's Value Chain	2%
	Research Papers	Unit 5 Research Paper 1: Strategies for Supply Chain Management or Outsourcing	1.7%
	Quizzes	Unit 5 Quiz 5	1%

Unit 6: INVENTORY MANAGEMENT			Unit Duration: Onsite: 1 week
Upon completion of this unit, students are expected to:			
<ul style="list-style-type: none"> Explain the importance of inventory in operations management Using examples, compare and contrast the four inventory models. Identify examples of product- and service-related inventory control and evaluate the differences. Compute the economic order quantity for units using ABC classification and ROP methods. Analyze operations management style using the Ethical Dilemma self-test. Using a business example, outline recommendations for optimizing efficiency using inventory management. 			
READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> Heizer & Render, Chapter 12 Video Case Study: "Managing Inventory at Frito-Lay" 	Discussions	Unit 6 Discussion 1: Inventory Management Models	1%
	Problem Sets	Unit 6 Problem Set 1	1%
	Assignments	Unit 6 Assignment 1: Managing Inventory at Frito-Lay	2%
	Research Papers	Unit 6 Research Paper 1: Operations Management Analysis	1.7%
	Quizzes	Unit 6 Quiz 6	1%

Unit 7: MATERIALS REQUIREMENT PLANNING			Unit Duration: Onsite: 1 week
Upon completion of this unit, students are expected to:			
<ul style="list-style-type: none"> Describe dependent inventory requirements for operations management. Identify five requirements of an effective MRP system. Demonstrate MRP in service sectors by selecting and analyzing real operational examples from the ITT Tech Virtual Library. Apply the EOQ model to an operations example and contrast the use of the quantity discount model. Develop a gross requirements plan and net materials requirements for a 			

business example. <ul style="list-style-type: none"> Summarize the advantages and disadvantages of ERP and justify with examples. Apply material requirement planning concepts to a real business situation in a case study format. 			
READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> Heizer & Render, Chapter 14 	Discussions	Unit 7 Discussion 1: Determining Lot Sizes	1%
	Problem Sets	Unit 7 Problem Set 1	1%
	Assignments	Unit 7 Assignment 1: Case Study: MRP at Wheeled Coach	2%
	Research Papers	Unit 7 Research Paper 1: Material Requirements Planning	1.7%
	Quizzes	Unit 7 Quiz 7	1%

Unit 8: SHORT-TERM SCHEDULING

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Describe the overall objective of scheduling and the four criteria for determining effectiveness.
- Compare and contrast short-term scheduling and capacity planning.
- Summarize the priority rules for dispatching jobs in a process-focused facility and provide examples from business operations.
- Determine the best assignment of jobs to machines and compute total productivity based on operations data.
- Apply shop-floor scheduling rules to specific situations and justify your choices.
- Develop a Gantt chart that depicts scheduling activities for a chosen process.
- Analyze production rates and manufacturing quantities in a case study format, recommending improvements for better time and utilization.

READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> Heizer & Render, Chapter 15 	Discussions	Unit 8 Discussion 1: Scheduling Issues	1%
	Problem Sets	Unit 8 Problem Set 1	1%
	Assignments	Unit 8 Assignment 1: Case Study: Old Oregon Wood Store	2%
	Research Papers	Unit 8 Research Paper 1: Scheduling Examples Analysis and Improvements	1.7%
	Quizzes	Unit 8 Quiz 8	1%

Unit 9: JIT AND LEAN OPERATIONS

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

<ul style="list-style-type: none"> • Define JIT, TPS, and lean operations, listing the seven wastes and five Ss. • Describe the impact of JIT layout, JIT inventory, and JIT scheduling on organizational performance. • Select a real JIT business example and discuss the relationship between JIT and quality. • Describe the improvement techniques associated with the Toyota Production System. • Apply lean operations principles to a manufacturing or service environment, giving examples of possible quantifiable improvements. • Compute kanbans needed in a business example. • Recommend application of JIT techniques to improve procedures in a business case study. 			
READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> • Heizer & Render, Chapter 16 • Video Case Study: "JIT at Arnold Palmer Hospital" 	Discussions	Unit 9 Discussion 1: JIT Impact on Operations	1%
	Problem Sets	Unit 9 Problem Set 1	1%
	Assignments	Unit 9 Assignment 1: Case Study: JIT at Arnold Palmer Hospital	2%
	Research Papers	Unit 9 Research Paper 1: JIT and Quality	1.7%
	Quizzes	Unit 9 Quiz 9	1%

Unit 10: MAINTENANCE AND RELIABILITY			Unit Duration: Onsite: 1 week
<p>Upon completion of this unit, students are expected to:</p> <ul style="list-style-type: none"> • Define the objectives of maintenance and reliability. • Using real examples, analyze the impact of preventive and breakdown maintenance. • Compute the reliability of an operational system. • Using the ITT Tech Virtual Library, identify and discuss activities used by an actual company to improve reliability. • Apply TPM concepts and techniques to suggest improvements to maintenance performance at a real company. • In a case study format, identify and analyze techniques for enhancing maintenance. 			
READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
<ul style="list-style-type: none"> • Heizer & Render, Chapter 17 • Video Case Study: "Maintenance Drives Profits at Frito-Lay" 	Discussions	Unit 10 Discussion 1: Preventive vs. Breakdown Maintenance	1%
	Problem Sets	Unit 10 Problem Set 1	1%
	Assignments	Unit 10 Assignment 1: Case Study: Maintenance Drives Profits at Frito-Lay	2%

	Research Papers	Unit 10 Research Paper 1: TPM Recommendations to Enhance Maintenance	1.7%
	Quizzes	Unit 10 Quiz 10	1%

Unit 11: FINAL EXAM AND PROJECT PRESENTATIONS

Unit Duration:
Onsite: 1 week

Upon completion of this unit, students are expected to:

- Select a company or organization in the news that appears to have operations issues or a problem related to the activities and concepts learned.
- Generate a report that includes an analysis of the problem(s) and recommendations for improvement.
- Demonstrate quality of analysis and application of Operations Management concepts.
- Properly reference information obtained through literature searches, observations, organizational records, news, videos, and other sources.

READING ASSIGNMENT	GRADED ACTIVITIES / DELIVERABLES		
	Grading Category	Activity/Deliverable Title	Grade Allocation (% of all graded work)
• Comprehensive Review of Chapters Covered	Exam	Comprehensive Final Exam	15%
	Project Presentation	Course Project: Operations Management: Identification, Analysis and Recommendations (e-Portfolio)	20%

Evaluation and Grading

Evaluation Criteria

The graded assignments will be evaluated using the following weighted categories:

Category	Weight
Quizzes	10%
Research Papers	15%
Discussions	10%
Problem Sets	10%
Assignments	20%
Project	20%
Exam	15%
TOTAL	100%

Grade Conversion

The final grades will be calculated from the percentages earned in the course, as follows:

Grade	Percentage	Credit
A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0

Academic Integrity

All students must comply with the policies that regulate all forms of academic dishonesty, or academic misconduct, including plagiarism, self-plagiarism, fabrication, deception, cheating, and sabotage. For more information on the academic honesty policies, refer to the Student Handbook and the Course Catalog.

(End of Syllabus)