



Executive Certificate in Management  
McIntire School of Commerce  
University of Virginia

# Operations Management

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## Faculty Information

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Professors: Raul Chao, Ph.D.

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## Course Description & Learning Objectives

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In a world marketplace that is changing at an accelerating pace, organizations, managers, and teams of individual workers are bombarded with new and complex challenges. They must acquire and make sense of vast amounts of information in order to make key decisions that impact performance, competitiveness and innovation, and their very survival.

This course introduces participants to a blend of theoretical knowledge and historical perspectives on decision making, and sharpens their perspective on the practical skills needed to apply the concepts behind decision making. We will focus on how decisions actually happen as both an art and a science, recognizing and appreciating the value of analysis and emotions.

Our course objective is to provide participants with an understanding of how Operations Management fits into the broader organization. This course will provide a knowledge base for conversing with operations personnel, and build both quantitative and qualitative analysis skills needed for managing important operational tradeoffs.

By the end of this course, participants should:

- Be aware of the importance of systematic and effective decision making to organizational success;
- Utilize the various models, tools, and decision-making processes for a given situation in order to generate effective actions and solutions;
- Be more aware of their own and others' decision-making styles, biases, and framework and be better equipped to manage the influence of those factors in the decision-making process;
- Appreciate the importance of decision making for high-performance teamwork, and understand how to use decision-making tools and processes for team problem-solving and innovation; and
- Understand and apply decision-making processes with awareness of business ethics

The instructor encourages participants to engage in the discussion forums, wherein participants will be expected to apply the concepts presented in various weeks to their individual work environments, draw parallels between their work and the online presentations and discuss the application of course materials to issues and challenges in their workplaces. Using the course's Web-based

message board, participants are encouraged to submit questions to the instructor, who will respond in a comprehensive and timely manner.

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## **Course Materials**

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Supplied and available to all participants via Internet online sources

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## **Discussion Forums and Assessments**

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Discussion Forums. Participants are encouraged to assemble in informal virtual teams to share the application of the course learnings to current issues and challenges in their workplaces and as a requirement, must post a minimum of 4 perspectives on the Discussion Forum during the course.

Weekly Assessments. We provide weekly practice assessments at the completion of each week's on-line class (e.g., lectures, slides, and other materials). The practice assessments consist of 19 multiple choice questions and one essay (minimum 500 words). The purpose of the assessments is to determine whether the participant has sufficient command of the materials and has met the learning objectives. Participants may attempt the weekly assessments as often as they choose during the course.

Week 4 is designed to provide a review of all the materials from the previous three weeks. The audio-video review presentation will connect the theory, instruction, and the learning objectives to the questions participants have posed.

Final Assessment. The final assessment consists of 25 multiple-choice questions. Participants will have 45 minutes to complete the final assessment. Participants have 3 chances to receive a passing score on the final assessment. In order to receive the program completion certificate, participants must pass the final assessment.

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## **Course Outline**

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### **Session 1: Introduction to Operations Management**

After completing this session, participants will be able to:

- Explain the role of operations management in the broader organization.
- Understand the types of problems and decisions that can be addressed through operations management principles.
- Understand the building blocks of efficiency, effectiveness, and value creation.

### **Session 2: Operations Strategy**

After completing this session, participants will be able to:

- Explain how competitive dimensions support the firm's corporate strategy.
- Understand how to make trade-offs between competitive dimensions based on customer needs.
- Measure productivity for any input factor for any firm or business.

### **Session 3: Project Management**

This session will enable participants to:

- Identify the typical ways that projects are organized in many organizations.
- Identify some of the tools and best-practices used by project management organizations.
- Construct project activity diagrams and conduct critical path analysis.

### **Session 4: Process Analysis**

After completing this session, participants will:

- Understand key process concepts such as process capacity and cycle time.
- Analyze any process to achieve greater output with the same (or lower) resources.
- Identify the activity (or activities) that are limiting process effectiveness.

### **Session 5: Quality Management**

After completing this session, participants will be able to:

- Understand the basic building blocks of a quality management system.
- Gain familiarity with common process improvements tools.
- Conduct a "statistical process control" analysis for any process and any measure in your firm

### **Session 6: Forecasting**

After completing this session, participants will:

- Understand why forecasting is important for operations management (and other areas).
- Gain exposure to various methods that are often used to forecast uncertain quantities.
- Use quantitative methods on actual data in order to develop an accurate forecast.

## **Session 7: Service Operations**

After completing this session, participants will be able to:

- Understand the key elements that distinguish services from manufacturing settings.
- Use that knowledge to design service processes that deliver maximum value to customers.
- Analyze service operations to quantitatively manage the tradeoff between better service and the cost of delivering service.

## **Session 8: Supply Chain Management**

After completing this session, participants will be able to:

- Use a common language to describe any supply chain found in practice.
- Calculate metrics that describe supply chain performance.
- Use operations frameworks to analyze common supply chain design strategies.

## **Session 9: Inventory Management**

The purpose of this session is to:

- Understand why inventory is critical for operations effectiveness
- Use analytical models commonly employed in practice to manage inventory
- Compute inventory metrics for single period and dynamic (multiple period) settings

## **Session 10: Review and Assessment**