

# BU.610 (OPERATIONS MANAGEMENT)

## Courses

### **BU.610.630. Pricing and Insuring Risk. 2 Credits.**

This course prepares students to understand risk and insurance, including decision making under uncertainty. The course will balance theory with industry-best practices and applications. Topics include: understanding the actuarial foundations of risk and insurance, including risk transfer pricing and risk pooling; both deterministic and stochastic risk application processes; understanding insurance product valuation using a variety of methods including simulation; construction of short-term analysis for capital at risk and optimal risk sharing along with analysis of claims and liabilities with extended time horizons; understanding the overall risk and insurance process, including structure and framework, empirical observations and business cycles; appreciation of managing uncertainty in the context of risk and insurance markets.

### **BU.610.705. Crisis Management. 2 Credits.**

In this course, we will examine the entire crisis management lifecycle – from prevention and preparedness through response, recovery, and mitigation – and consider the lifecycle's principles and practices. We will identify and use the entire crisis management toolkit to address challenges faced by managers when organizations face any crisis, due to either external factors outside the organization's control or internal control or strategic management failures. We will develop a complete crisis management plan, including tools and methods to identify potential crises, implement response and mitigation strategies to limit exposure, manage crisis response teams, and create communications to address stakeholder and public relation issues.

**Prerequisite(s):** BU.120.601 OR BU.930.610 OR BU.920.601

### **BU.610.710. Sustainable Supply Chains. 2 Credits.**

Sustainability concerns have a substantial impact on how firms produce, deliver, source, innovate, and select the products and services they offer to add value, meet regulatory requirements, and meet customer demands. Through case studies, scholarly articles, simulations, and games, students will learn about the value chain as it relates to sustainability. This course provides an in-depth examination across various industries of operations and supply chains, reactive and proactive approaches to sustainability, environmental regulations and their impact on firms' operations, and holistic sustainability concepts such as closed loop supply chains, industrial symbiosis, circular economy, biomimicry, and industrial ecology. The students will also become familiar with greenhouse gas accounting, life cycle assessment, and other quantitative methods used to make data-driven decisions about sustainable practices

**Prerequisite(s):** BU.520.601 OR BU.913.610 OR BU.920.711 OR BU.920.721

### **BU.610.730. Contracting: Incentive Design and Analytics. 2 Credits.**

This course explores fundamental drivers of human and system behavior embedded in business contracting, with a view integrating economical, operational, legal, and political perspectives. These drivers include alignment of incentives for performance and information sharing, provisions for recourse in the face of unsatisfactory performance, and design of options to facilitate the pursuit of opportunities that arise after contract terms are set. Emphasis will be placed on analyzing and designing contracts to create win-win opportunities and share or minimize risks in global networks.

**Prerequisite(s):** BU.680.620 OR BU.912.611

### **BU.610.750. Global Supply Chain Management. 2 Credits.**

In this course, we show applications of inventory theory to global supply chain management. In addition, we discuss several related issues in supply chain management, including distribution, coordination, global sourcing and mass customization. We will take analytical and detailed approach in model development. The presentation is designed to refine intuitions developed from models and case studies to build managerial insights.

**Prerequisite(s):** BU.680.620 OR BU.912.611

### **BU.610.760. Supply Chain Analytics. 2 Credits.**

For a firm to execute its competitive strategy successfully, its supply chain must be able to deliver on the firm's promise to its customers. Therefore, it is important for all managers to have an understanding of key supply chain concepts. With this in mind, this course introduces the main trade-offs involved in supply chain management, and provides analytical, data-driven tools that can be used to evaluate supply chain trade-offs. The course emphasizes (i) building spreadsheet-ready models that capture supply chain challenges, (ii) using these models to ask what-if questions by applying simulation and optimization tools (e.g., @Risk, a powerful Excel add-in for simulations), and (iii) distilling managerial insights from what-if questions and communicating recommendations based on those insights.

**Prerequisite(s):** ( BU.520.601 OR BU.913.610 OR BU.920.711 OR BU.920.721) AND (BU.680.620[C] OR BU.912.611 OR BU.920.606)

### **BU.680.620. Operations Management. 2 Credits.**

Within a manufacturing or service organization, operations provide the power necessary for orchestrating technology and resources in creating products and services to meet the needs of end consumers. Operations management, accordingly, consists of ideas for shaping and innovating an organization's business model. This course provides a conceptual and actionable introduction to operations management and covers a wide range of topics, including operations strategy, process mapping and design, queuing theory, inventory management, lean manufacturing, and revenue management, unified by a thought framework known as "the operations prism" (flows, variability, and buffers). By taking a process view of value-added functions that lead to an understanding of how to make operations design choices, students will acquire analytical and strategic thinking skills crucial for managing 21st-century operations.

**Prerequisite(s):** BU.520.601