

LEAN/MANUFACTURING OPS (MFGO)

MFGO-601 Globally Integrated Manufacturing Company 4 Credits

Prerequisites: None

This course is an introduction and integrated overview of contemporary global manufacturing operations. The focus is on the importance of agility and the introduction of lean concepts in business and manufacturing. Instruction will emphasize the application of attitudes, skills, and knowledge required of managers, supervisors, team leaders, and manufacturing professionals in a cross-functional and cross-cultural manufacturing environment. Topics include a brief historical overview of global manufacturing, and a strong emphasis on process re-engineering. Students are required to use the concepts from the class to analyze their own work environment.

Lecture: 3, Lab 0, Other 1

MFGO-619 Six Sigma: Introduction to DMAIC 4 Credits

Prerequisites: None

Students examine techniques to maximize production efficiency and to maintain control over each step in the production process. DMAIC (Define-Measure-Analyze-Improve-Control), the structured problem-solving methodology, provides the framework for the course.

Lecture: 3, Lab 0, Other 1

MFGO-633 Lean Production Systems 4 Credits

Prerequisites: None

Minimum Class Standing: NA

Terms offered: Fall, Spring

This course begins with an overview of the theory and application of lean production systems. Systems thinking and business dynamics are presented along with contemporary lean thinking principles, lean enterprise development, and value stream mapping. Specific emphasis will be devoted to modern enterprise improvement techniques such as Six Sigma, Theory of Constraints, and Business Process Reengineering.

Lecture: 3, Lab 0, Other 1

MFGO-635 Work Analysis for Lean Production Application 4 Credits

Prerequisites: MFGO-633

This course addresses a critical issue facing organizations in the design of a competitive and low-cost manufacturing operation. The intent of this course is to survey the basic techniques of methods design, work measurement, business process analysis, and ergonomics. The student will be expected to solve complex problems encountered during the design, analysis, or operation of a facility that produces goods or services.

Lecture: 3, Lab 1, Other 0

MFGO-639 Quality Assurance and Reliability 4 Credits

Prerequisites: None

This course covers topics in quality assurance including an introduction to quality and quality philosophy, statistical methods of quality improvement, the concept of variation and its reduction, statistical process control, and acceptance sampling. In this course, students will make extensive use of statistical software.

Lecture: 3, Lab 0, Other 1

MFGO-649 Metrics for Lean Production Improvement 4 Credits

Prerequisites: MFGO-635 or MFGO-639

This course is intended to provide the operations professional with an understanding of the data typically available within a manufacturing or service environment, and how to use information derived from such data employing a lean paradigm to improve operations. The course covers basic financial accounting, activity-based metrics, trend analysis, decision making and linking operational decisions to strategic considerations.

Lecture: 3, Lab 0, Other 1

MFGO-659 Integrative Capstone Project 4 Credits

Prerequisites: MFGO-649

Students should take this course as one of their last two core courses. The focus of this course is on a business-focused, project-oriented perspective applicable to the integrated operating environment. Project Management tools and techniques, recognized as part of the body of knowledge by the Project Management Institute, are examined in detail. The Final Project is designed to enable students to apply project management concepts, and techniques to ensure application of lean principles to a process or service.

Lecture: 3, Lab 0, Other 1