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-610 Foundations of Lean Organizations 4 Credits
Prerequisites: None
Foundations of Lean Organizations is designed to introduce learners to the principles, methodologies, and applications of Lean Thinking and Six Sigma within organizational contexts. Learners explore the origins of Lean through studying its evolution from manufacturing to diverse sectors such as healthcare, information technology, and services. Through reviewing a list of curated resources, actively participating in discussion questions, and completing assignments, learners also deepen their knowledge t of Lean and Six SIgma in an effort to eliminate waste, drive efficiency, ensure quality, initiate continuous improvement, and spark innovation in various organizational settings.
Lecture: 4, Lab 0, Other 0

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

MFGO-669 Lean Systems Capstone Project 4 Credits
Prerequisites: None
The course provides the opportunity to work on a team-based Lean Systems project. This project focuses specifically on an issue in a non-manufacturing organization or business or service process that would benefit from the application of Lean principles, tools and techniques. In addition, solid project management guidelines are employed to plan and implement the project within the timeframe allotted. The goal is the apply the tools, techniques and principle to create a change that reduces waste, maximized customer value or provide an opportunity for continuous improvement. The project should ultimately provide an opportunity for real-world application of Lean to a specific issue or challenge within an organization or business.
Lecture: 4, Lab 0, Other 0