

Department of Technology and Engineering

Graduate Course Offerings

MFG 505 (3) - Manufacturing Operational Systems I: The analysis, design, and implementation of world class manufacturing systems and their integration with functions of the production system for the manufacture of superior quality, low cost products. Topics include lean manufacturing, cellular manufacturing, integrated quality systems, Just-In-Time/Pull production control, and other current manufacturing strategies.

MFG 507 (3) - Manufacturing Operational Systems II: Prerequisite: MFG 505. A continuation of the analysis, design, and implementation of world class manufacturing systems studied in MFG 505. Detailed examination of competencies required of technology managers in contemporary manufacturing, with emphasis on integrating quality into all areas of the organization with the manufacturing system. Topics include quality management, manufacturing teams, safety and health management, total productive maintenance, vendor relationships, and other global manufacturing issues.

MFG 511 (3) - Manufacturing Computer/Information Systems: The theory and practice of using the computer to integrate the functional manufacturing areas into an effective system. Emphasis on computer interfacing, including hardware and software.

MFG 515 (3) - Manufacturing Systems Simulation: An examination of decision-making competencies required of manufacturing managers using current manufacturing system-modeling packages. Emphasis will be on solving manufacturing system problems consisting of labor, material, and equipment to predict future outcomes of various alternatives. Topics include computer simulation of manufacturing systems, computer simulation of material handling systems, data collection, validation, output analysis, job shop applications, and line balancing.

MFG 521 (3) - Manufacturing Value Analysis: A comprehensive course covering topics necessary for making effective manufacturing economic decisions with emphasis on using a computerized engineering economic decision packages for application of cost controls and budgeting. Topics include evaluation of alternative projects, make versus buy decisions, cost justification methods, cost of product tolerances, and replacement analysis.

MFG 531 (3) – Automated Manufacturing Technology: A summary course of material processing & machining methods with an emphasis on planning and implementation of flexible manufacturing systems (FMS) and computer-integrated manufacturing (CIM). Topics include robotics & computer numerical control (CNC) systems, automated material handling and storage, and automated inspection.

MFG 595 (3) – Project Development and Management: Students are directed in methods and techniques used in project development and management as they develop a proposal for completion of a project in manufacturing systems technology.

MFG 596 (3) – Comprehensive Project in Manufacturing Systems Technology: Students complete an independent, comprehensive project integrating the functional areas of manufacturing systems technology. Students will be required to present a seminar outlining the project and submit a detailed technical project report.