MANUFACTURING ENGINEERING (MFE)

MFE 500 Selected Topics (1-6 Credits)
Engineering & Comp Sci
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

MFE 534 Statistical Quality Control (3 Credits)
Engineering & Comp Sci
Controlling product quality through the control of the manufacturing process and acceptance sampling. Industrial project required.
Prereq: MFE 326

MFE 595 Multidisciplinary Analysis and Design (3 Credits)
Engineering & Comp Sci
Interdisciplinary subjects related to engineering, information technology, networking, AI and HTTP.//WWW-based tools. The objective is to use different MAD tools in the product realization process.
Prereq: MEE 571

MFE 600 Selected Topics (1-6 Credits)
Engineering & Comp Sci
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

MFE 633 Enterprise Systems (3 Credits)
Engineering & Comp Sci
Technical overview of Enterprise Systems and their impact on organizations. The concepts, fundamentals, issues and technologies in planning, implementing and operating an Enterprise System. Current trends, issues, technologies and extensions. Laboratory exercises
Advisory recommendation Prereq: CSE 581 or IST 659

MFE 634 Productivity and Quality Engineering (3 Credits)
Engineering & Comp Sci
Measuring, evaluating and improving productivity in conjunction with total quality methods. Multidimensional measures of performance. Quality function deployment, concurrent engineering, loss function; system, parameter and tolerance design using statistically designed experiments. Statistical quality control overview.
Advisory recommendation Prereq: ECS 526

MFE 635 Manufacturing Systems (3 Credits)
Engineering & Comp Sci
Survey of different types of manufacturing systems and design methodologies. Topics include transfer line, flow shops, job shops, manufacturing cells, flexible manufacturing systems, and computer integrated manufacturing systems. Integration of manufacturing components and emerging trends.
Advisory recommendation Prereq: ECS 526

MFE 636 Materials and Processing in Manufacturing (3 Credits)
Engineering & Comp Sci
Properties of metals, polymers, ceramics; mechanics and mechanisms of deformation processing, manufacturing processes. Laboratory demonstrations.

MFE 639 CAD/CAM Systems (3 Credits)
Engineering & Comp Sci
Advanced topics in Computer Aided Design and Solid Modeling, Computer-integrated Manufacturing, Concurrent Engineering, Process Planning, Manufacturing Control, Measurement and Analysis.

MFE 654 Production System Design and Control (3 Credits)
Engineering & Comp Sci
Introduction to design, planning, execution, and control of production systems using mathematical, computational, and other modern techniques. Forecasting, inventory control, lean manufacturing, materials requirement planning, enterprise resource planning, and supply chain planning.
Advisory recommendation Prereq: ECS 526

MFE 670 Experience Credit (1-6 Credits)
Engineering & Comp Sci
Participation in a discipline or subject related experience. Student must be evaluated by written or oral reports or an examination. Permission in advance with the consent of the department chairperson, instructor, and dean. Limited to those in good academic standing.
Repeatable

MFE 676 Computer Control of Machines and Processes (3 Credits)
Engineering & Comp Sci
Application of microcomputers, programmable controllers, numerical controls, analog-digital conversion, robotics, software development, laboratory experiments.

MFE 690 Independent Study (1-6 Credits)
Engineering & Comp Sci
Exploration of a problem, or problems, in depth. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor(s) and the department.
Repeatable

MFE 692 Design for Manufacturing (3 Credits)
Engineering & Comp Sci
Major design project which would include initial design definition, analysis/CAD, manufacturability studies, design modification, manufacturing layout and data bases.
Advisory recommendation Prereq: MFE 636

MFE 693 Design for Manufacturing (3 Credits)
Engineering & Comp Sci

MFE 700 Selected Topics (1-6 Credits)
Engineering & Comp Sci
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

MFE 735 Artificial Intelligence in Manufacturing Systems (3 Credits)
Engineering & Comp Sci
Artificial Intelligence as a tool for modeling, planning, and controlling manufacturing systems. Knowledge representation, inference methods, expert systems, blackboard framework, neural networks, and their application in manufacturing systems. Issues involved in building intelligent manufacturing systems.
Advisory recommendation Prereq: MFE 635

MFE 850 Advanced Topics in Manufacturing (3 Credits)
Engineering & Comp Sci
Selected topics in conventional and non-conventional manufacturing processes, flexible manufacturing cell, automated manufacturing, production planning, quality control.
Repeatable 2 times for 6 credits maximum

MFE 990 Independent Study (3-6 Credits)
Engineering & Comp Sci
Exploration of a problem, or problems, in depth. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor(s) and the department.
Repeatable

MFE 997 Master's Thesis (0-9 Credits)
Engineering & Comp Sci
Repeatable