

# EGM. ENGINEERING MANAGEMENT

## EGM-310. PROJECT DECISION PROCESSES

**Credits:** 3

An Introduction to Economic Decisions processes and techniques relating to technical processes and projects. This course will show how to properly define economic decision parameters and make project decisions based on economic guidelines such as revenue, cost and product or process performance. Concepts of engineering economy are reviewed briefly with respect to estimated value, projected cash flow, and risk associated with engineering projects.

### Pre-Requisites

[[EGM-320]]

## EGM-315. QUALITY MANAGEMENT

**Credits:** 3

This course provides students with an overview of important topics relating to Quality Assurance systems and processes directly related to engineering functions. Topics range from voice of the customer to the history and application of TQM. Cornerstone features include coverage of topics essential to any industry: customer focus creation, value creation, leadership, process improvement and management, strategic planning, measures of performance, supply chain management, human resources management, knowledge and information management, project management and business process.

### Pre-Requisites

[[EGM-320]]

## EGM-320. ENGINEERING PROJECT MANAGEMENT

**Credits:** 3

Project management and evaluation based on economic considerations, project selection models, and fundamentals of project planning are covered. Specific topics include Work Breakdown Structure (WBS), Organizational Breakdown Structure (OBS), Earned Value Analysis (EVA), risk and opportunity analysis, project scheduling, and other project analysis techniques.

### Pre-Requisites

[[MTH-111]]

## EGM-321. QUANTITATIVE ANALYSIS

**Credits:** 3

Discussion of various quantitative analysis and optimization methodologies. Analytical numerical approaches are used in solving linear and nonlinear optimization problems. Emphasizes the development of ability in analyzing problems, solving problems by using software, and post solution analysis.

### Pre-Requisites

Junior standing in engineering or consent of the instructor.

## EGM-322. OPERATIONS ANALYSIS

**Credits:** 3

Introduction to Operations Analysis and Resource Allocation offers topics relating to technical processes and projects required in engineering, manufacturing, and service-related industrial applications. The course covers those engineering subjects from forecasting analysis methods to manufacturing line balancing, queuing, and operation locations selections. Students will model and assess production flows and asset utilization for purposes of reducing production bottlenecks while maintaining/increasing facility utilization.

### Pre-Requisites

[[EGM-320]]

## EGM-325. PROJECT ANALYSIS

**Credits:** 3

This course offers experience in managing a project. Topics relating to project planning, costing, resources, and critical path and other analyses relating to manufacturing, research, and service-related industrial applications are discussed. The course covers engineering subjects from project definition and planning methods to earned value planning and analysis.

### Pre-Requisites

[[EGM-320]]

## EGM-336. ENGINEERING AND MANAGEMENT MODELS

**Credits:** 3

Discussion of the techniques in and the art of modeling practical problems encountered by engineers and managers.

### Pre-Requisites

Junior standing in engineering or consent of the instructor.

## EGM-340. SIX SIGMA & LEAN MANUFACTURING

**Credits:** 3

This course focuses on developing the knowledge and skills of a typical industry-based Six Sigma Green Belt candidate. The course includes the descriptive statistics and project management skills necessary to Define, Measure, Analyze, Improve and Control processes. Lecture topics include Six Sigma problem-solving techniques, continuous improvement, mistake proofing, Lean Six Sigma, Lean manufacturing, determining the cost of quality and more.

### Pre-Requisites

Permission of the instructor.

## EGM-391. SENIOR PROJECTS I

**Credits:** 1

Design and development of selected projects in the various fields of engineering under the direction of a staff member. Technical as well as economic factors will be considered in the design. A detailed progress report is required.

[Click here for course fee.](#)

### Pre-Requisites

Senior standing in Engineering Management or departmental permission.

## Engineering Management

### **EGM-392. SENIOR PROJECTS II**

**Credits:** 2

Design and development of selected projects in the field of engineering management under the direction of a staff member. Technical as well as economic factors will be considered in the design. A professional paper to be presented and discussed in an open forum is required.

[Click here for course fee.](#)

### **Pre-Requisites**

[[EGM-391]]

### **EGM-399. COOPERATIVE EDUCATION**

**Credits:** 0-6

Professional cooperative education placement in a private or public organization related to the student's academic objectives and career goals. In addition to their work experiences, students are required to submit weekly reaction papers and an academic project to a Faculty Coordinator in the student's discipline. See the Cooperative Education section of this bulletin for placement procedures.

Requirements: minimum junior standing in Engineering; 2.0 cumulative GPA; consent of the academic advisor; and approval of placement by the department chairperson. The co-op option for credit can only be taken one time for either 3 or 6 credits.