

Engineering Management (EM)

EM 660 - ENGR MGMT THEORY

Semester Hours: 3

Comparison of classical management principles and theory with the current systems in high technology, research and development, and other scientific-engineering organizations. Use of people systems to accomplish goals in high technology organizations. Cases used to illustrate contemporary problems and environments.

EM 661 - STRATEGIC ENGR MGMT

Semester Hours: 3

Analysis of industries; generic, market share, vertical integration, and life-cycle strategies as applied to technology-based organizations. Relationship between buyers and suppliers. Environment and competitor analysis in a global marketplace.

EM 662 - FOUND QUALITY SYSTEMS MGMT

Semester Hours: 3

Basic understanding of Quality Systems such as TQM and ISO 9000 in context of fundamental building blocks of effective management; measurement, problem solving, continuous improvement, teamwork, customer focus, and supportive culture.

EM 664 - TEAMS IN ACTION

Semester Hours: 3

To give students practice in observational data collection in the area of group development and teamwork. This course provides background in group development theory and trains the student in techniques and tools used in observational data collection. The student learns practical research methods and gains an understanding in how theory can be applied to analyze team development. Prerequisites: ISE 660 and ISE 666.

EM 665 - FINANCIAL METHODS FOR ENGRS

Semester Hours: 3

Financial and managerial accounting for the engineering manager; accounting fundamentals, transaction recording, understanding financial statements, and management applications including costing, budgeting, performance evaluation and control, and ratio analysis.

EM 666 - ENGR PROJECT MANAGEMENT

Semester Hours: 3

Management and control of multifaceted engineering and technological projects. Coordination and interactions between client and various service organizations. Project manager selection. Typical problems associated with various phases of project life cycle. Case studies illustrate theories and concepts.

EM 667 - LABOR RELATIONS/ENGRS

Semester Hours: 3

Negotiation and administration of labor agreements. Survey of historical, legal, and structural environments that influence collective bargaining process. Simulation of collective bargaining.

EM 679 - SELECTED TOPICS IN ENGR MGMT

Semester Hours: 3-9

EM 697 - ENGR MANAGEMENT PROJECT I

Semester Hours: 3-9

Application-oriented student project designed to show competence in engineering management.

EM 698 - ENGR MANAGEMENT PROJECT II

Semester Hours: 3-9

Application-oriented student project designed to show competence in engineering management. Continuation of EM 697.

EM 699 - MASTER'S THESIS

Semester Hours: 1-9

Required each semester student is working and receiving direction on a master's thesis. Minimum of two semesters and 6 hours required for M.S.E. students. A maximum of 9 hours of credit is awarded upon successful completion of master's thesis. The 1 hour option is only available to students who have successfully defended their thesis and submitted it for approval, but do not meet the deadlines for graduation in the semester submitted. Students may only use the 1 hour option once in their career.

EM 711 - RES METHODS IN SURVEY DEVELOPM

Semester Hours: 3

To immerse the student in research method appropriate at the PhD level. To investigate survey development and to understand requirements necessary in establishing a psychometrically sound survey instrument. To thoroughly understand the research process in collecting appropriate data, using statistical methodologies in analyzing data, and reporting significant findings.

EM 760 - ENGR MGMT STRUCTURES & SYSTEMS

Semester Hours: 3

The capstone course studies the impact of various organization structures in relation to the goals of high technology enterprises. Use and effectiveness of contemporary organizational systems as related to the knowledge worker. Cases used to illustrate contemporary problems and environments.

Prerequisite: EM 660.

EM 761 - EVOL THRY ENG MGMT/IND SYS ENG

Semester Hours: 3

Development of applicable engineering management or industrial & systems engineering using classical concepts, contemporary studies, and practices at successful technology-based organizations.

EM 762 - PERFORM MEAS & PRODUC IMPROVMT

Semester Hours: 3

Productivity and performance defined and used to analyze current competitive position of important sectors of US industry with respect to national and international competition. Students will conduct research into current practices and develop a detailed performance measurement system for an organization. Dissemination of knowledge and student publications will be emphasized. Course should be taken late in the student's Program of Study. Instructor approval required. Prerequisite: EM 660.

EM 766 - MANAGING CHG IN HIGH TECH ORG

Semester Hours: 3

Challenges to implementing advanced technology equipment, systems, and methods in engineering organizations. Justifying technology, assimilating change, changing management roles, personnel practices and organizational structure, and dealing with impact of new technologies on business policies and strategic planning. Prerequisite: EM 666.

EM 767 - CONTEMPORARY APPL EM/ISE

Semester Hours: 3

Application of key qualitative and quantitative principles of engineering management or industrial & systems engineering to real-world case problems. Students work both as teams and as individuals to solve multidimensional problems which require an integrative point of view.

EM 779 - SELECTED TOPICS IN ENGR MGMT

Semester Hours: 3-9

EM 799 - DOCTORAL DISSERTATION

Semester Hours: 3-9

Required each semester student is enrolled and receiving direction on doctoral dissertation.