### 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 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 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 747 - STRATEGIC ENGINEERING MGT**  
**Semester Hours:** 3  
Analysis of creating an organizational strategy for engineering and technology-based enterprises; identifying critical value streams and creating supplier and customer partnerships. Development of skills for leadership and management of innovation. Prerequisite: EM 660.

**EM 760 - ENGR MGMT STRUCTURES & SYSTEMS**  
**Semester Hours:** 3  
The 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 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.