

MINOR IN ENGINEERING MANAGEMENT – ENGINEERING CONCENTRATION

The minor in Engineering Management – Engineering Concentration is designed to provide students with non-engineering majors with an understanding of the engineering activities involved in managing organizations and technology development including: i) planning, organizing, allocating, and controlling activities and resources, ii) project management, and iii) operations management, and entrepreneurship.

PLAN OF STUDY – MINOR IN ENGINEERING MANAGEMENT – ENGINEERING CONCENTRATION

DIRECTIONS: Complete the following information and turn in 2 copies of this sheet, with a copy of your UNOFFICIAL TRANSCRIPT, highlighting the courses you are using to meet the minor, attached. Submit your plan of study sheet with attached transcripts during the first four weeks of the semester in which you intend to graduate.

Additional Details: Students who have taken OPIM 3104 Operations Management are required to take a third elective and cannot take MEM 2221. This includes all School of Business Majors.

Name _____ Major _____ Anticipated Graduation Date ____/____/____
Mo/Yr
Student ID # _____ Local Address _____ Phone (____) _____
Student Signature _____ Date _____

Courses being used to complete the minor – please list them below:

<u>Grade</u>	<u>Dept</u>	<u>No.</u>	<u>Course Title</u>
_____	MEM	2221 (or third elective, if you have completed OPIM 3104)	<u>Introduction to Engineering Management</u>
_____	OPIM	3801	<u>Principles of Project Management</u>
_____	MEM	2211	<u>Introduction to Manufacturing Systems</u>

Electives - choose two courses from the recommended electives listed on the reverse side, or three if you have completed OPIM 3104. Only one 1000 level course may be used toward completion of the minor.

Bring to: School of Engineering Undergraduate Programs Office

For School of Engineering Use Only

Signature of Associate Dean, School of Engineering
[Effective Winter 2009]

Date

Interested students must complete the listed requirements.

CORE REQUIRED COURSES INCLUDE:

MEM 2221. Introduction to Engineering Management. *Either semester. Three credits. Prerequisite: Open to sophomores, juniors, and seniors. Not open to students who have passed or are taking OPIM 3104 or BADM 3761. Will not substitute for OPIM 3104 for students who enter the School of Business. Will not substitute for BADM 3761. May not be used to satisfy Junior-Senior level major requirements of the School of Business.* The fundamentals of engineering management tasks of planning and control; the human element in production, research, and service organizations; the stochastic nature of management systems.

OPIM 3801. Principles of Project Management. *Three credits. Prerequisite: Instructor consent; open to juniors or higher.* This course provides an introduction to the concepts necessary for both project managers and project team members to deliver successful projects on time, on budget and in scope. The phases and knowledge areas of project management, as defined by the Project Management Institute (PMI), are covered as well as the tools and techniques in each area for successful project management. An introduction to Microsoft Project software will also be covered.

MEM 2211. Introduction to Manufacturing Systems. *Three credits. Prerequisite: STAT 1000Q or 1100Q or 3025Q or 3345Q or 3375Q, or CE 2210 or 2251, or MATH 3160.* Overview of manufacturing operations management and the systems used in controlling manufacturing enterprises including the concepts of global competition, lean concepts in business and engineering, and manufacturing as a competitive weapon.

RECOMMENDED ELECTIVE COURSES: (Only one 1000 level course may be used toward completion of the minor.)

CE 4210. Operations Research in Civil and Environmental Engineering. *Three credits. Prerequisite: CE 2210, or STAT 1000Q or 1100Q. This course and CE 256 may not both be taken for credit.* Resource allocation subject to constraints. One and two-phase simplex method for linear programming. Optimization of non-linear problems.

CSE 1000. Computers in Modern Society. *Three credits. Two class periods and two 1-hour program design periods. Not open for credit to students who have passed CSE 110C or CSE 130 or CSE 1010 or CSE 1100.* Introduction to computer applications in the humanities, social sciences, business, and other fields. Influence of the computer on modern society and technology. Elements of computer usage in the solution of numeric and non-numeric problems including introduction to programming methods.

CSE 1010. Introduction to Computing for Engineers. *Three credits. Two 1-hour lectures and one 2-hour laboratory. Not open for credit to students who have passed CSE 110, 130 or 1100.* Introduction to computing logic, algorithmic thinking, computing processes, a programming language and computing environment. Knowledge obtained in this course enables use of the computer as an instrument to solve computing problems. Representative problems from science, mathematics, and engineering will be solved.

ECE 1001. A Survey of Modern Electronic Technology. *Three credits.* A non-specialist introduction to the broad field of electronic technology, including historical roots, contemporary applications, and future directions.

ENGR 1101. Living in an Engineered World. *Three credits.* A survey course that provides students an insight into the technical world around them. As a society in the 21st Century, we will be faced with a rapidly changing world influenced greatly by the advances in technology, the history of technological changes and the continued need for conservation of energy and sustainability.

ENGR 1166. Foundations of Engineering. *Three credits. Prerequisite: Not open to Junior or Senior students in the School of Engineering. Not open for credit for students who have passed ENGR 151.* Introductory topics in a specific engineering major. Topics selected by Department or Program, or Regional Campus faculty. Students to select section based on their selected or intended major. In the context of the discipline, students would develop skills transferable to other engineering disciplines.

ENVE 2320. The Environmental Debate II. *One credit.* Structured review of environmental issues and active debate during class time Presentation of current environmental issues by environmental professionals and experts.

ME 3221. Manufacturing Automation. *Three credits. Prerequisite: Consent of instructor. Not open to students who have passed ME 5440.* Introduction to Computer Integrated Manufacturing (CIM). Fundamentals of automated manufacturing; Computer Numerical Control (CNC); production economics and optimization of production systems.

ME 3222. Production Engineering. *Three credits. Prerequisite: Consent of instructor. Not open to students who have passed ME 5441.* Introduction to the modern techniques of Production Systems including the Decision-Making Process, Economic Analysis, Demand Forecasting, Production and Process Design and Optimization, Production Scheduling, and Statistical Quality Control.