

MASTER OF ENGINEERING DEGREE IN ENGINEERING MANAGEMENT

Offered through the
Department of Industrial and
Management Systems Engineering
University of Nebraska-Lincoln

POLICIES AND PROCEDURES

*These policies and procedures are provided in
an attempt to maintain equality in the
administration of the program while maintaining quality*

August 1999

**Department of Industrial and Management
Systems Engineering**

Degree Approved

January 2000

Policies and Procedures Approved

August 1999

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INTRODUCTION

The Master of Engineering (MENG) in Engineering Management is a professional practice-oriented advanced degree. The degree program is for individuals with a degree in engineering or a quantitative area who have engineering work experience and who wish to acquire knowledge and skills for the administration and management in the engineering profession. The degree is designed to combine advanced engineering and management education. The degree is not intended to prepare graduates for doctoral studies in engineering.

II. ADMISSION REQUIREMENTS

A. Grade Point Requirements

Admission with full standing requires a grade point average (GPA) for all under-graduate work of at least a 3.00 point (on a 4.00 scale.) Applicants with a GPA below a 3.00 or with deficiencies will be evaluated and admission may be granted on a provisional basis until proof of an ability to complete graduate level work satisfactorily, as established by the Graduate Committee, has been demonstrated. Course work used in the MENG in Engineering Management program cannot be taken Pass/Fail. All deficient courses stipulated at the time of admission must be passed with a grade of C or better.

B. Prerequisite Requirements

To enter the MENG in Engineering Management program, the following minimum prerequisites are required:

1. Two years of engineering work experience.
2. A Bachelor of Science (or higher) degree in engineering or quantitative area.
3. One academic year of Calculus.
4. An introductory, calculus-based Probability and Statistics course.
5. An Engineering Economy course.
6. At least one engineering science course such as: Statics, Thermodynamics, or Electrical Circuits.

None of the above courses may be used in the student's MENG program of study. All prerequisites must be met before 18 hours of graduate course work is completed. Graduate course work after 18 hours will not be accepted unless all prerequisites are met.

III. MASTERS PROGRAM REQUIREMENTS

A. General Program Requirements (36 semester hours plus any deficiencies)

Students selecting the Engineering Management program must meet all established general program requirements of the degree as published in the UNL Graduate Bulletin and those issued by the Industrial and Management Systems Engineering Department Graduate Committee.

B. Course Requirements in Industrial and Management Systems Engineering (minimum of 18 semester hours)

The following IMSE courses are required for the MENG in Engineering Management degree:

IMSE 805 - Analysis of Engineering Management I (3 hours)

IMSE 806 - Engineering Economy II (3 hours)

IMSE 905 - Analysis of Engineering Management II (3 hours)

Three hours from Area D1 or D2 (see Section D below)

Six additional IMSE hours from Section D (see Section D below)

C. Course Requirements in Management or Business Administration (minimum of 9 semester hours)

Prerequisite requirements for College of Business Administration courses must be observed. Students must complete at least nine semester hours of graduate work selected from the general body of knowledge in Management and/or Business Administration. Attached in Appendices A, B and C are listings of recommended courses.

D. Other IMSE Courses

Students must choose a minimum of 9 semester hours (3 courses) from the courses listed below to complete their program of study. All courses are 3 semester hours. Courses must be taken from at least two different areas listed below. At least one course must be taken from Area 1 (Systems Modeling and Analysis) or Area 2 (Statistical Analysis).

1. Systems Modeling and Analysis

IMSE 828 Principles of Operations Research

IMSE 829 Applied Linear Models in Operations Research

IMSE 830 Stochastic and Nonlinear Models in Operations Research

IMSE 875 Manufacturing Systems I

IMSE 883 Production and Inventory Control II

IMSE 884 Industrial Systems Analysis I

IMSE 923 Manufacturing and Dynamic Systems Modeling

IMSE 926 Integer Programming and Network Flows

IMSE 928 Large Scale Optimization Models

IMSE 930 Applied Queuing Theory

IMSE 975 Manufacturing Systems II

IMSE 984 Industrial Systems Analysis II

IMSE 996E Advanced Topics in Operations Research

2. Statistical Analysis

IMSE 821 Industrial Quality Control

IMSE 822 Applied Statistical Analysis for Industrial Problems

IMSE 921 Reliability Engineering

IMSE 922 Quality Engineering: Use of Experimental Design and Other Techniques

3. Occupational Safety and Health
 - IMSE 812 Occupational Safety - A Systems Analysis
 - IMSE 815 Ergonomics I
 - IMSE 816 Ergonomics II
 - IMSE 817 Occupational Safety Hygiene Engineering
 - IMSE 914 Physiological Aspects of Ergonomics
 - IMSE 915 Biomechanics
 - IMSE 916 Biotechnology
 - IMSE 919 Determinants of Occupational Performance
 - IMSE 996B Advanced Topics in Human Factors Engineering

4. Manufacturing
 - IMSE 860 Packaging Engineering
 - IMSE 870 Theory and Practice of Materials Processing
 - IMSE 871 Tool and Die Design
 - IMSE 876 Computers in Manufacturing
 - IMSE 877 Robotics
 - IMSE 970 Advanced Manufacturing Processes
 - IMSE 996D Advanced Topics in Manufacturing

5. Engineering Management
 - IMSE 906 Industrial Decision Models II
 - IMSE 996A Advanced Topics in Engineering Management

E. Program Requirements

1. The student is required to complete **at least 18 semester hours from courses open exclusively to graduate students.** (900 level or 800 level without a 400 or lower counterpart).

2. A program of study must be approved by the UNL Graduate School before 18 semester hours are completed. The student submits the proposed program to the Graduate Chairman for the Master of Engineering in Engineering Management Degree and upon approval the program is forwarded to the UNL Graduate School.

Appendix A

University of Nebraska -Lincoln

College of Business Administration Graduate Courses

The following UNL College of Business Administration courses or their equivalents are recommended for the Engineering Management program.

All courses are 3 semester hours. All course prerequisites must be satisfied.

GRBA *800 - Ethical and Legal Considerations in Management
GRBA *801 - Survey of Accounting
GRBA *802 - Economic Theory: Introduction and Review
GRBA *804 - Finance
GRBA *805 - Marketing Management
GRBA *806 - Management Theory/Organizational Behavior
GRBA *810 - Contemporary Managerial Accounting
GRBA *811 - Managerial Finance
GRBA *812 - Managerial Economics
GRBA *813 - Managerial Marketing
GRBA *814 - Applied Organizational Behavior
GRBA *815 - Operations and Information Systems Strategy
GRBA *852 - International Business
GRBA *853 - Administrative Policy and Strategy
GRBA *860 - Management: Theory, Issues and Practice
MNGT 828 - International Management
MNGT 837 - Computer-aided Analysis in Decision Making
MNGT 852 - Database Organization and Management
MNGT 854 - Information Systems Analysis and Design
MNGT 861 - Advanced Personnel/Human Resource Management
MNGT 862 - Labor Relations

MNGT 863 - Compensation Administration
MNGT 864 - Human Resource Planning
MNGT 865 - Organization Theory and Behavior
MNGT 866 - Government and Labor
MNGT 875 - Business Policies and Strategies
MNGT*876 - Strategic Management
MNGT 931 - Operations Planning and Control Systems
MNGT 941 - Management Science
MNGT 950 - Management Information Systems
MNGT 960 - Organizational Behavior
MNGT 969 - Organizational and Management Theory
** Restricted to graduate students only*

Appendix B

University of Nebraska at Omaha

College of Business Administration Graduate Courses

The following UNO College of Business Administration courses or their equivalents are recommended for the Engineering Management program.

All Courses are 3 semester hours. All course prerequisites must be satisfied.

BSAD 8010 - Legal Environment of Management
BSAD 8020 - Research Methods in Economics and Business
BSAD 8030 - Business Information Systems
BSAD 8050 - Business Conditions Analysis
BSAD 8080 - Business Forecasting
BSAD 8100 - Managerial Economics
BSAD 8110 - Survey of Accounting
BSAD 8300 - Organization Theory and Design
BSAD 8310 - Human Behavior in Organizations
BSAD 8316 - Small Business Management
BSAD 8320 - Seminar in Personnel
BSAD 8350 - Seminar in Management

BSAD 8400 - Marketing Policies
 BSAD 8426 - Business Demographics
 BSAD 8450 - Seminar in Marketing
 BSAD 8500 - Financial Management
 BSAD 8510 - Security Analysis
 BSAD 8520 - Seminar in Investment Management
 BSAD 8530 - Banking and Financial Markets
 BSAD 8550 - Seminar in Finance
 BSAD 8556 - State and Local Finance
 BSAD 8600 - Real Estate and Land use Economics Theory

BSAD 8610 - Current Problems in Real Estate and Land Use
 Economics Theory
 BSAD 8710 - Structure Software Design
 BSAD 8720 - Systems Analysis and Design
 BSAD 8730 - Decision Support Systems
 BSAD 8740 - Data Base Management
 BSAD 8750 - Telecommunications
 BSAD 8770 - Seminar in Management Information Systems
 BSAD 8800 - Policy, Planning, and Strategy
 BSAD 8880 - The Arts, and the Executive

Courses numbered 8__0 (all of the above) are open only to graduate students.

Appendix B adopted 1/96

Appendix C

University of Nebraska at Kearney

College of Business and Technology Graduate Courses

The following UNK College of Business and Technology courses or their equivalents are recommended for the Engineering Management program.

All courses are 3 semester hours. All course prerequisites must be satisfied.

BACC 800 - Ethical and Legal Considerations
 BACC 801P - Financial Accounting
 BACC 812P - Employment Law
 BACC 858 - Management Accounting
 BACC 863P - Advanced Cost Accounting
 BACC 865P - Governmental/Non-Profit Accounting

BFIN 809 - Financial Administration
 BFIN 875P - Short-Term Financial Management

BMGT 810P - Wage and Salary Administration
 BMGT 811P - Labor Relations
 BMGT 820 - Managerial Communications
 BMGT 855 - Organizational Behavior
 BMGT 890 - Seminar in Organizational Behavior
 BMGT 893P - Social Responsibility of Business - Issues and Ethics
 BMGT 894P - Entrepreneurship

BMKT 830P - International Marketing
 BMKT 834P - Industrial Marketing
 BMKT 837P - Sales Management
 BMKT 838P - Consumer Behavior
 BMKT 840P - Advertising Management
 BMGT 856 - Marketing Management Seminar
 BMKT 857P - Direct Marketing

ECON 850 - Managerial Economics

"P" indicates the course is paired with an undergraduate course. Courses without the "P" designation are open only to graduate students.