Engineering Management, BSE
Bachelor of Science in Engineering, 2013-2014 Catalog Year
ESEMGBSE

Please work with your academic advisor to review any questions about critical requirements, math and science electives, and industry focus area requirements.

Notes:  ** Contact your CIDSE Advisor or visit the CIDSE Website (http://cidse.engineering.asu.edu/degreerequirementsbseem/) for list of Industry Focus Area, Math/Science, and Basic Science Electives.
* Designates critical requirements for EM admits in the 2013-2014 academic year.

Prerequisite — Pre or Co-requisite
Term 1
MAT 265: Calculus for Engineers I-Limits and continuity, differential calculus of functions of one variable, introduction to integration. Not open to students with credit in MAT 270.

PSY 101: Introduction to Psychology-Major areas of theory and research in psychology. Requires participation in department-sponsored research or an educationally equivalent alternative activity.

ASU 101-CSE: The ASU Experience

ENG 101: First-Year Composition

FSE 100: Introduction to Engineering-Introduces the engineering design process; working in engineering teams; the profession of engineering; engineering models, written and oral technical communication skills.

Basic Science Elective: choose one of the following: BIO 181, BIO 182, BME 111, GLG 101, GLG 102, or GLG 110

Term 2

MAT 266: Calculus for Engineers II-Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series

ECN 212: Microeconomics Principles-Basic microeconomic analysis. Theory of exchange and production, including the theory of the firm.

ENG 102: First-Year Composition

PHY 121/122: University Physics I: Mechanics and laboratory-Kinematics; Newton’s laws; work, energy, momentum, conservation laws; dynamics of particles, solids, and fluids. Both PHY 121 and PHY 122 must be taken to secure SQ General Studies credit.

Term 3
ACC 231: Uses of Acctg I-Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.

CMH 114: General Chem for Engineers or CHM 116: General Chem II(pre-req is CHM 113)


MAT 267: Calculus for Engineers III-Vector-valued functions of several variables, partial derivatives, multiple integration.

Global Eng or Sustainability or Entrepreneurship Elective: choose one of the following: ALA 102, CEE 181, FSE 301, PUP 190, SOS 110, or SOS 111

Term 4
ACC 241: Uses of Acctg II-Introduces the uses of accounting information focusing on the evolution of the business cycle and how accounting information is used for internal and external purposes.


COM 263: Elements of Intercultural Comm-Basic concepts, principles, and skills for improving communication among persons from different minority, racial, ethnic, and cultural backgrounds.


Math or Science Elective: (depends on Focus area)

Term 5
IEE 431: Engineering Administration-Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.

IEE 381: Lean Six Sigma Methodology-Define, measure, analyze, improve and control (DMAIC) steps of six sigma methodology for business and quality improvement. Reviews the necessary statistical tools and illustrates their integration into the problem-solving process. Overview of lean principles and design for six sigma. Unique features of applying six sigma and DMAIC in transactional and service organizations.

Or IEE 305: Information Systems Engr-Overview of computer and information systems applications. Topics include client/server; distributed computing; networks; process modeling; e-commerce; enterprise applications; Internet.

MGT 300: Org and Mgt Leadership-Analyzes strategic, behavioral, and human resource management perspectives, including principles of strategic management and leadership of human resources.

Industry Focus Area Elective (depends on Focus area)

Math or Science Elective: (depends on Focus area)

Term 6
IEE 458: Project Management-Life-cycle processes for selecting and managing large-scale projects to ensure successful completion. Topics include project phases, defining milestones, work breakdown structure, group decision making and teamwork, organizational structure, human resource management, technological and economic feasibility, configuration management, budget control, and resource allocation and scheduling. Use of modern tools for planning and controlling project performance.

IEE 300: Economic Analysis for Engineers-Economic evaluation of alternatives for engineering decisions, emphasizing the time value of money.


IEE 369: Work Analysis and Design(L)-Planning, analysis, and design of methods of accomplishing work. Emphasizes human factors, work planning, methods analysis and design, and work measurement. Applications in diverse fields.

Or IEE 461: Production Control-Techniques for the planning, control, and evaluation of production systems. Forecasting, inventory control, scheduling, enterprise requirements planning, supply chain design, and coordination.

Industry Focus Area Elective (depends on Focus area)

Industry Focus Area Elective (depends on Focus area)

Term 7
IEE 485: Systems Design Capstone I-Senior capstone project provides students with the skills required to effectively complete a capstone project in design and development.

IEE 454: Risk Mgt-Methods and tools for identifying, assessing, mitigating and controlling risk in business and engineering design activities. Decision tools include cost-benefit analysis, decision trees, value of information, Bayesian statistical decision making, fault trees, and failure modes and effects analysis (FMEA).

IEE 456: Introduction to Systems Engineering-Foundation course addressing the concepts needed for successful system planning, design and build process. Topics include successfully bringing large-scale systems to completion on schedule and on budget, modeling and cost estimating techniques, risk and variability.

IEE 475: Simulating Stochastic Systems-Analyzes stochastic systems using basic queueing networks and discrete event simulation. Basic network modeling, shared resources, routing, assembly logic.

Upper Division Industry Focus Area Elective (depends on Focus area)

Term 8
IEE 490: Project in Design and Development-Individual or team capstone project in creative design and synthesis.

IEE 484: Internship Or Upper Division IEE Technical Elective (depends on Focus area)

Upper Division Industry Focus Area Elective (depends on Focus area)

Upper Division HU: Humanities

HU & H: Humanities and Historical awareness area