Please connect with your CIDSE Advisor with questions about critical requirements, math and science electives, and industry focus area options.
Math or Science Elective: Studies vector spaces, linear transformations, and eigenvalues. Emphasizes development of computational problems.

MAT 242: Elementary Linear Algebra

IEE 380: The Business Cycle and How Accounting Information is Used for Internal and External Purposes

ACC 241: Uses of Account II

COM 263: Elements of Intercultural Communication

Term 1

ENG 101: First-Year Composition
ASU 101-IIE: The ASU Experience
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.
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.

Basic Science Elective: choose one of the following: BIO 181, BIO 182, BME 111, GLG 101, GLG 102, GLG 110, CHM 113 (MUST TAKE CHM 114 IF CHM 113 IS TAKEN FOR BASIC SCIENCE ELECTIVE).

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.

Term 2

ENG 102: First-Year Composition
ECN 212: Microeconomics Principles-Basic microeconomic analysis. Theory of exchange and production, including the theory of the firm.
MAT 266: Calculus for Engineers II-Methods of integration, applications of calculus, elements of analytic geometry, improper integrals, Taylor series
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

CHM 114: General Chem for Engineers or CHM 116: General Chem II (pre-req is CHM 113).
Students who take CHM113 for Basic Science Elective must take CHM116.
ACC 231: Uses of Accounting Information 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.
CSE 205: Object-Oriented Programming & Data Structures-Problem solving by programming with an object-oriented programming language. Introduces data structures. Overview of computer science topics.
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

COM 263: Elements of Intercultural Communication-Basic concepts, principles, and skills for improving communication among persons from different minority, racial, ethnic, and cultural backgrounds.
ACC 241: Uses of Accounting Information 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.
IEE 380: Probability and Statistics for Engineering Problem Solving-Applications-oriented course with computer-based experience using statistical software for formulating and solving engineering problems
Math or Science Elective: (depends on Industry Focus Area)

Term 5

IEE 431: Engineering Administration-Introduces quantitative and qualitative approaches to management functions, engineering administration, organizational analysis, decision making, and communication.
MGT 300: Org and Mgt Leadership-Analyzes strategic, behavioral, and human resource management perspectives, including principles of strategic management and leadership of human resources.
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.
Math or Science Elective: (depends on Industry Focus Area)
Industry Focus Area Elective (see the Major Map for options or meet with CIDSE Advising)

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(I)-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.
IEE 477: System Dynamics and Thinking-Methods for the modeling and analysis of system dynamics; metrics to measure business performance; continuous simulation tools for evaluation of system performance over time.
Industry Focus Area Elective (depends on Industry Focus Area)

Term 7

IEE 454: Risk Management-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).
HU & F: Humanities and Historical Awareness Area Course Industry Focus Area Elective (depends on Industry Focus Area)
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.
Upper Division Industry Focus Area Elective (depends on Industry Focus Area)

Term 8

Upper Division HU: Humanities
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 3XX or 4XX: Upper Division IEE Technical Elective (depends on Industry Focus Area)
IEE 486: Systems Design Capstone II - Project in design and development. Individual or team capstone project in creative design and synthesis.
Upper Division Industry Focus Area Elective (depends on Industry Focus Area)