Bachelor of Science in Industrial Engineering
Degree Requirements Effective AY 2011-2012

Students may choose to follow any catalog year requirements from their first year to present, but may not mix and match requirements from different catalog years

Mathematics (4 courses)
- MATH 220  Differential Calculus of One Variable Functions
- MATH 224  Integral Calculus of One Variable Functions
- MATH 230  Differential Calculus of Multivariable Functions
- MATH 234  Multiple Integration and Vector Calculus

Probability and Statistics (2 courses)
- IEMS 202  Probability
- IEMS 303  Statistics I

Operations Research (3 courses)
- IEMS 313  Deterministic Models & Optimization
- IEMS 315  Stochastic Models & Simulation
- IEMS 317  Discrete-Event Systems Simulation

Engineering Analysis & Computer Proficiency (4 courses)
- GEN ENG 205-1,2,3,4  Engineering Analysis

Basic Sciences (4 courses)
- 4 courses from at least two of the basic science areas; no more than 2 from earth sciences/astronomy. PHYSICS 135-2 and one quarter of Chemistry are recommended.

Applied Behavioral Science (1 course)
- IEMS 340  Field Project Methods
- or IEMS 342 Organizational Behavior

Production and Logistics (1 course)
- IEMS 381  Supply-Chain Modeling and Analysis
- or IEMS 382 Production Planning and Scheduling
- or IEMS 383 Service Operations Management
- or IEMS 385 Introduction to Health Systems Engineering

Basic Engineering (5 courses)*
3 of the following:
- EECS 230 Programming for Computer Engineers
- EECS 317 Data Management & Information Processing
- or EECS 328 Numerical Methods for Engineers
- IEMS 326 Economics and Finance for Engineers

Plus 2 additional courses meeting basic engineering requirements* The IE department recommends any 2 below:
- Comp Arch & Num Methods (EECS 203)
- Fluids/Solids (BME 271)
- Fluids/Solids (Civil Eng 216)

Materials Science (Mat Sci 201)
Systems Analysis (Civil Eng 304)
Reliability Engineering (ME 359)

Senior Design Project (2 courses)
- IEMS 393-0 Industrial Engineering Design Project
- and one course from:
- IEMS 390-0 Systems Management
- IEMS 391-0 Industrial Engineering Design
- IEMS 392-0 Systems Management Project

Technical Electives (7 courses - see below)
- 3 courses chosen from the IE/OR group
- 1 course chosen from the MS group
- 3 engineering courses at the 200-level or higher
- or any course chosen from the General Technical Elective group

Social Science-Humanities (7 courses)

Unrestricted Electives (5 courses)

*Basic Engineering. These 5 courses must come from at least 4 of the basic engineering areas. See the undergraduate catalog for how the courses are distributed into areas.

Students must have 18 total engineering credits; see http://mccormick.northwestern.edu/undergraduate/abet/course_partitioning.php

TECHNICAL ELECTIVES
- 3 courses chosen from the Industrial Engineering/Operations Research (IE/OR) group
- 1 course chosen from the Management Science group (MS)
- 3 engineering courses at the 200-level or higher or any course chosen from the General Technical Elective group (GTE)
- P/N is permitted only in the GTE group (at most 2 courses)
- IEMS 399 is permitted only in the GTE group (at most 2 units)