INDUSTRIAL ENGINEERING DEGREE

Students must also complete the Undergraduate Registration Requirement (https://catalogs.northwestern.edu/undergraduate/requirements-policies/undergraduate-registration-requirement/) and the degree requirements of their home school.

Course Requirements (48 units)

Core Courses (32 units) 1
4 mathematics courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
4 engineering analysis and computer proficiency courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
4 units of basic science chosen according to McCormick basic science guidelines (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext) 2
3 design and communications courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
5 basic engineering courses from at least four different areas:
  - COMP_SCI 211-0 Fundamentals of Computer Programming II
  - COMP_SCI 217-0 Data Management & Information Processing
  - CIV_ENV 205-0 Economics and Finance for Engineers 3
2 additional courses from two different areas: Computer architecture and numerical methods, Electrical science, Fluids and solids, Materials science and engineering, Thermodynamics (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
7 social sciences/humanities courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
5 unrestricted electives (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)

Major Program (16 units)

1 computer programming course:
  - COMP_SCI 111-0 Fundamentals of Computer Programming
6 IE Methods Core courses:
  - IEMS 202-0 Probability
  - IEMS 303-0 Statistics
  - IEMS 304-0 Statistical Learning for Data Analysis
  - IEMS 313-0 Foundations of Optimization
  - IEMS 315-0 Stochastic Models
  - IEMS 317-0 Discrete Event Systems Simulation
1 production and logistics course chosen from:
  - IEMS 381-0 Supply Chain Modeling and Analysis
  - IEMS 382-0 Production Planning and Scheduling
  - IEMS 383-0 Service Operations Management
  - IEMS 385-0 Introduction to Health Systems Management
1 Client Project course:
  - IEMS 394-0 Industrial Engineering Client Project Challenge
7 Electives:
  - 2 industrial engineering/operations research electives (p. 1)
  - 2 management science electives (p. 1)
  - 3 General Technical Electives chosen from:
    - COMP_SCI 150-0 Fundamentals of Computer Programming 1.5
Any 200-level or higher course in McCormick, excluding CRDV and PRDV courses
Any 200-level or higher course in Biology, Chemistry or Physics

Industrial Engineering/Operations Research Electives

Course Title
2 courses chosen from:
  - IEMS 307-0 Quality Improvement by Experimental Design
  - IEMS 308-0 Data Science and Analytics
  - IEMS 351-0 Optimization Methods in Data Science
  - IEMS 365-0 Analytics for Social Good
  - IEMS 373-0 Intro to Financial Engineering
  - IEMS 381-0 Supply Chain Modeling and Analysis
  - IEMS 382-0 Production Planning and Scheduling
  - IEMS 383-0 Service Operations Management
  - IEMS 385-0 Introduction to Health Systems Management
  - IEMS 395-0 Special Topics in Industrial Engineering (selected topics)

Management Science Electives

Course Title
2 courses chosen from:
  - IEMS 325-0 Engineering Entrepreneurship
  - IEMS 341-0 Social Networks Analysis
  - IEMS 342-0 Organizational Behavior
  - IEMS 343-0 Project Management for Engineers
  - IEMS 344-0 Leading Organizations and Teams
  - IEMS 345-0 Negotiations and Conflict Resolution for Engineers
  - IEMS 395-0 Special Topics in Industrial Engineering (selected topics)

Other Approved Non-engineering Technical Electives

Course Title
- ECON 309-0 Public Finance
- ECON 331-0 Economics of Risk and Uncertainty
- ECON 336-0 Analytic Methods for Public Policy Analysis
- ECON 339-0 Labor Economics
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<td>Monopoly Competition &amp; Public Policy</td>
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<td>ECON 355-0</td>
<td>Transportation Economics and Public Policy</td>
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<td>IMC 303-0</td>
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<tr>
<td>ISEN 220-0</td>
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<td>Climate Change and Sustainability: Ethical Dimensions</td>
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