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.

Requirements (48 units)
Core Courses (27 units) ¹

Course  Title
4 mathematics 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)
4 engineering analysis and computer proficiency courses (https://catalogs.northwestern.edu/undergraduate/engineering-applied-science/#requirementstext)
3 design and communications courses (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 (21 units)

Course  Title
1 engineering economics course
CIV_ENV 205-0 Economics and Finance for Engineers ²
3 computer programming courses
COMP_SCI 111-0 Fundamentals of Computer Programming
COMP_SCI 150-0 Fundamentals of Computer Programming 1.5
COMP_SCI 217-0 Data Management & Information Processing
6 industrial engineering 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 the options below
IEMS 381-0 Supply Chain Modeling and Analysis
IEMS 382-0 Operations Engineering and Management
IEMS 383-0 Service Engineering and Management
IEMS 385-0 Introduction to Health Systems Management
1 client project course
IEMS 394-0 Industrial Engineering Client Project Challenge
5 IEMS elective courses
3 industrial engineering/operations research electives (p. 1)
2 management science electives (p. 1)
4 general technical elective courses chosen from areas below
Any IEMS course not applied towards another degree requirement
Any 200-level or higher course in McCormick, excluding CRDV and PRDV courses
Any 200-level or higher course in Biology, Chemistry or Physics, except for exclusions listed below

Major Program Electives
Industrial Engineering/Operations Research Electives

Course  Title
3 courses chosen from the following list. Course used towards Production & Logistics requirement may not be used here.
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 Operations Engineering and Management
IEMS 383-0 Service Engineering and Management
IEMS 385-0 Introduction to Health Systems Management
IEMS 395-0 Special Topics in Industrial Engineering (pre-approved topics only)

Management Science Electives

Course  Title
2 courses chosen from:
IEMS 325-0 Engineering Entrepreneurship
IEMS 340-0 Qualitative Methods in Engineering Systems
IEMS 341-0 Social Networks Analysis
IEMS 342-0 Organizational Behavior
IEMS 343-0 Project Management for Engineers
IEMS 344-0 Whole-Brain Leadership
IEMS 345-0 Negotiations and Conflict Resolution for Engineers
IEMS 395-0 Special Topics in Industrial Engineering (pre-approved topics only)

Other Approved Non-engineering Technical Electives

Course  Title
BUS_INST 302-0 Marketing Management
ECON 309-0 Public Finance
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>ECON 331-0</td>
<td>Economics of Risk and Uncertainty</td>
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<tr>
<td>ECON 336-0</td>
<td>Analytic Methods for Public Policy Analysis</td>
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<td>ECON 339-0</td>
<td>Labor Economics</td>
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<td>ECON 349-0</td>
<td>Industrial Economics</td>
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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>ECON 360-2</td>
<td>Investments</td>
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<td>ECON 362-0</td>
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<td>ECON 371-0</td>
<td>Economics of Energy</td>
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<td>ECON 380-1</td>
<td>Game Theory</td>
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<td>ECON 381-1</td>
<td>Econometrics</td>
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<tr>
<td>ECON 381-2</td>
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<tr>
<td>IMC 303-0</td>
<td>Integrated Marketing Communications Strategy</td>
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<tr>
<td>ISEN 220-0</td>
<td>Introduction to Energy Systems for the 21st Century</td>
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<tr>
<td>ISEN 230-0</td>
<td>Climate Change and Sustainability: Ethical Dimensions</td>
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