

BS in Industrial Engineering  
Degree Requirements, AY 2024-2025

**Full degree requirements available at [catalogs.northwestern.edu](https://catalogs.northwestern.edu)**

Done	Course	Course Name	Notes
<b>Mathematics Requirement (4 credits)</b>			
<input type="checkbox"/>	Math 220-1	Single-variable Differential Calculus	
<input type="checkbox"/>	Math 220-2	Single-variable Integral Calculus	
<input type="checkbox"/>	Math 228-1	Multivariable Diff. Calc. for Eng.	
<input type="checkbox"/>	Math 228-2	Multivariable Int. Calc. for Eng.	
<b>Engineering Analysis and Computer Proficiency (4 credits)</b>			
<input type="checkbox"/>	Gen Eng 205-1	EA 1	
<input type="checkbox"/>	Gen Eng 205-2	EA 2	
<input type="checkbox"/>	Gen Eng 205-3	EA 3	
<input type="checkbox"/>	ESAM 245	ESAM 245	
<b>Basic Sciences (4 credits; see "Basic Science Details" tab)</b>			
<input type="checkbox"/>		Required Lab Course	
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<b>Design and Communications (3 credits)</b>			
<input type="checkbox"/>	DSGN 106-1/Engl 106-1	DTC 1	
<input type="checkbox"/>	DSGN 106-2/Engl 106-2	DTC 2	
<input type="checkbox"/>	Communications Course	Choose one option	
<input type="checkbox"/>			
<b>Theme Courses (7 credits; see "Theme Details" tab)</b>			
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<input type="checkbox"/>	Department	Soc. Science or Humanities	
<b>Unrestricted Electives (5 credits)</b>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			
<input type="checkbox"/>			

Done	Course	Course Name	Notes
<b>IEMS Major Program: Engineering Econ (1 credit)</b>			
<input type="checkbox"/>	CIV_ENV 205	Engineering Econ	
<b>IEMS Major Program: Computing (3 credits)</b>			
<input type="checkbox"/>	COMP_SCI 111	Fundamentals of Computer Programming I	Prerequisite for COMP_SCI 211
<input type="checkbox"/>	COMP_SCI 150	Fundamentals of Computer Programming 1.5	
<input type="checkbox"/>	COMP_SCI 217	Data Management	
<b>IEMS Major Program: Methods Core + PL + Project (8 credits)</b>			
<input type="checkbox"/>	IEMS 302	Probability	
<input type="checkbox"/>	IEMS 303	Statistics	
<input type="checkbox"/>	IEMS 304	Statistical Learning	IE/OR Methods Core
<input type="checkbox"/>	IEMS 313	Foundations of Optimization	
<input type="checkbox"/>	IEMS 315	Stochastic Models	
<input type="checkbox"/>	IEMS 317	Discrete-Event Systems Simulation	
<input type="checkbox"/>	Prodn & Logistics	Choose one option	
<input type="checkbox"/>	IEMS 394	IE Client Project Challenge	Junior spring or Senior fall
<b>IEMS Major Program: IE/OR Electives (3 credits)</b>			
<input type="checkbox"/>	IE/OR Elective	Choose course option	
<input type="checkbox"/>	IE/OR Elective	Choose course option	May not count course used for Prodn & Logistics above
<input type="checkbox"/>	IE/OR Elective	Choose course option	
<b>IEMS Major Program: MS Electives (2 credits)</b>			
<input type="checkbox"/>	Elective-MS	Choose course option	
<input type="checkbox"/>	Elective-MS	Choose course option	
<b>IEMS Major Program: General Technical Electives (4 credits)</b>			
<input type="checkbox"/>		Elective 1	
<input type="checkbox"/>		Elective 2	
<input type="checkbox"/>		Elective 3	
<input type="checkbox"/>		Elective 4	
See Notes Tab or Reverse for Details			

Allowable Basic Science Courses	IE/OR Electives	General Technical Elective Options
<p><b>Courses in red only allowed 2022 and</b>            Lab courses (.34 credit) only count corresponding lecture courses</p> <p>Physics            PHYSICS 125-2/126-2            PHYSICS 135-2/136-2            PHYSICS 135-3/136-3            PHYISCS 140-2            PHYSICS 239</p>	<p>IEMS 307            IEMS 308            IEMS 351            IEMS 365            IEMS 373            IEMS 381            IEMS 382            IEMS 383            IEMS 385</p>	<p><i>Allowable courses for Tech Electives</i>            200-level or higher courses in McCormick (this excludes CRDV and PRDV courses)            200-level or higher courses in Bio, Chem, Physics            STAT 302-0            STAT 320-3            STAT 325-0            STAT 328-0            STAT 330-1            STAT 330-2</p>
<p>Chemistry            CHEM 131 or 151 or 171            CHEM 132 or 152 or 172            CHEM 210-1            CHEM 210-2            CHEM 141 or 161 or 181            CHEM 142 or 162 or 182</p>	<p><b>MS Electives</b>            IEMS 325            IEMS 341            IEMS 342            IEMS 343            IEMS 344            IEMS 345            IEMS 349</p>	<p>STAT 332-0            STAT 342-0            STAT 344-0            STAT 345-0            STAT 348-0            STAT 352-0            STAT 353-0            STAT 354-0            STAT 355-0</p>
<p>Biological Sciences            BIOL_SCI 201            BIOL_SCI 202            BIOL_SCI 203            CHEM_ENG 275  <b>CIV_ENV 202</b>  <b>BIOL_SCI 150</b>            BIOL_SCI 232            BIOL_SCI 233            BIOL_SCI 234  <b>COG_SCI 210</b></p>	<p><b>General Technical Elective Exclusions</b>  <i>Not allowed as Tech Elective</i>            Chem 201            Math 310-1            Math 311-1            Math 314            Math 385            Math 386-1            Physics 311-1            Physics 311-2            Physics 335</p>	<p>STAT 356-0            STAT 357-0            STAT 365-0            STAT 370-0            BUS_INST 301            BUS_INST 302            BUS_INST 303            Econ 309            Econ 331            Econ 336            Econ 339            Econ 349</p>
<p>Neuroscience  <b>CSD 202</b>  <b>CSD 303 (also PSYCH 327)</b>  <b>PSYCH 221</b></p>	<p><b>Theme Requirements</b>            Seven courses            At least three must be related in co            At least 2 humanities, at least 2 soc            More info available online.</p>	<p>Econ 350            Econ 355            Econ 360-2            Econ 362            Econ 380-1,2            Econ 381-1,2</p>
<p>Earth Sciences and Astronomy            ASTRON 220            CIV_ENV 203            EARTH 201  <b>EARTH 202</b>            EARTH 203  <b>GEOG 235</b></p>	<p><i>These courses may NOT be used for</i>            Any BUS_INST or Kellogg course            ECON 281            ECON 380-1            ECON 380-2            ECON 381-1            ECON 381-2            ENGLISH 106-1            ENGLISH 106-2            GEOG 341            PSYCH 201</p>	<p>Econ 383            IMC 303            ISEN 220            ISEN 230            May include up to 2 units of IEMS 399            At most 2 GTEs may be taken P/N</p>