

## Bachelor of Science in Industrial Engineering Degree Requirements Effective AY 2014-2015

*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*

### General Classes

<b>Mathematics</b> 4 courses	<b>Basic Sciences</b> 4 courses
<b>MATH 220</b> Differential Calculus of One Variable Functions	4 courses from at least 2 basic sciences;
<b>MATH 224</b> Integral Calculus of One Variable Function	Physics: PHYSICS 135-2,3, 335
<b>MATH 230</b> Differential Calculus of Multivariable Functions	Biological sciences: BIOL SCI 210-1,2,3; CHEM ENG 275
<b>MATH 234</b> Multiple Integration and Vector Calculus	Chemistry: CHEM 101, 102, 103, 171, 172, 210-1,2
	Earth & planetary sciences/astronomy: EARTH 201,202; ASTRON 220
	No more than 2 courses in Earth Sciences/Astronomy
<b>Design and Communication</b> 3 courses	
<b>IDEA 106-1,2/Engl 106-1,2</b>	
<b>GEN CMN 102</b> OR <b>GEN CMN 103</b>	<b>Engineering Analysis &amp; Computer Proficiency</b> 4 courses
Public Speaking	<b>GEN ENG 205-1,2,3,4</b> Engineering Analysis
Analysis and Perf of Lit	

### Basic Engineering Must cover 4 categories

<b>Required by IE</b> 3 courses	<b>Additional courses</b> 2 courses
<b>EECS 230</b> (Comp Programming)	Recommended Choices:
<b>EECS 317</b> (Comp Programming)	<b>EECS 202</b> (Electrical Science) <i>Can also take BME</i>
<b>IEMS 326</b> (Sys Eng and Analysis)	<b>EECS 205</b> (Comp Arch and Num Methods) <i>220, 250,270; ChemE</i>
	<b>BME 271, Civ Eng 216</b> (Fluid/Solid) <i>211, 312, 321; EECS</i>
	<b>MAT SCI 201</b> (Material Science) <i>270; MatSci 301, 314,</i>
	<b>ME 359</b> (Reliability Engineering) <i>315; MechE 220, 233,</i>
	<i>241, 370; check</i>
	<i>categories.</i>

### Major Courses

<b>Probability and statistics</b> 2 courses	<b>Operations Research</b> 3 courses
	Pre-Requisites
<b>IEMS 202</b> Probability	<b>IEMS 313</b> Deterministic Models and Optimization
<b>IEMS 303</b> Statistics I	<b>IEMS 315</b> Stochastic Models and Simulation
	<b>IEMS 317</b> Discrete-Event Systems Simulation
	EA1, Math 230
	EA1, IE 303
	IE 303; 310 or 315
<b>Senior Design Project</b> 2 courses	<b>Production and Logistics</b> 1 course
<b>IEMS 393-1</b> Industrial Engineering Design	<b>IEMS 381</b> Supply-Chain Modeling and Analysis
<b>IEMS 393-2</b> Industrial Engineering Design Project	<b>IEMS 382</b> Production Planning and Scheduling
Must be taken in consecutive quarters	<b>IEMS 383</b> Service Operations Management
	<b>IEMS 385</b> Intro to Health Systems Engineering
	IE 313, 315
	IE 303, 313
<b>Applied Behavioral Science</b> 1 course	
<b>IEMS 340</b> Field Proj	<b>IEMS 342</b> Orgnl Behavior
<b>IEMS 390</b> Sys Mgmt	<b>IEMS 392</b> Sys Proj Mgmt

### Technical Electives

<b>Industrial Engineering/ Operations Research</b> 3 courses	<b>General Technical Elective</b> 3 courses
IEMS 304, 305, 306, 307, 381, 382, 383, 373, 385	Any 200 level or higher engineering course
	Econ 308; 309; 316; 337; 339; 349; 350; 355; 361; 362; 380-1,2;
	381-1,2; 383
	IMC 303
	LOC 306, 310
	Math 300-0; 320-1, 2, 3; 330-1, 2, 3; 364-0; 366-1, 2
	Sociology 302
	Stats 325, 350, 351
	Kellg-Fe 310, 312, 314, 316
	Kellg-Ma 310, 322, 324, 326
<b>Management Science</b> 1 course	
IEMS 325, 340, 341, 342, 390, 392	

#### GTEs by permission only:

*P/N and IEMS 399 only permitted in GTE, at most 2 courses  
Chicago Field Study and BIP 394, depending on topic (rare)*

<b>Social Sciences-Humanities (Theme)</b> 7 courses	<b>Unrestricted Electives</b> 5 courses
<b>Option 1 for Theme</b>	<b>Option 2 for Theme</b>
3-2-2	5-2
3 related courses	5 related courses
≥ 2 from each SBS, FAL, HSV	≤ 5 from any SBS, FAL, HSV

*Every student needs to have 18 units of engineering credit  
Take note when petitioning to replace degree requirements and talk with your advisor.*