

# CURRICULUM

## Bachelor of Science in Industrial and Systems Engineering (BSIE)

The following is designed to help you, the industrial and systems engineering student, see your path through the eight semesters of your BSIE degree. **ISE PROTIP:** *This guide is a template and doesn't have to be followed exactly. The BSIE is highly flexible so you can move courses around to fit your schedule. Talk with your [advisor](#) regularly about your progress.*

Starting in your fifth semester, you will see courses, labeled with a "CP," known as critical path courses. These courses represent specific major requirements that are predictive of your success in the BSIE program. The courses with links will take you to specific information that you need to know before registering for that course. For more details, go to the [ISE curriculum page](#).

1st Semester		Hours	2nd Semester		Hours
CH 101	Chemistry, A Molecular Science	3		<b>GEP Requirement</b>	3
CH 102	General Chemistry Lab	1	<b>E 101</b>	Intro to Engineering and Problem Solving	1
<b>E 102</b>	Engineering in the 21st Century (GEP-IP)	2	<b>EC 205</b>	Economic	3
E 115	Intro to Computing Environments	1	<b>HES ***</b>	Health and Exercise Studies Course	1
ENG 101	Academic Writing and Research	4	MA 241	Calculus II	4
<b>HES ***</b>	Health and Exercise Studies Course	1	PY 205	Physics for Engineers and Scientists I	3
MA 141	Calculus I	4	PY 206	Physics for Engineers and Scientists I Lab	1
<b>Total Credits</b>		<b>16</b>	<b>Total Credits</b>		<b>16</b>

3rd Semester		Hours	4th Semester		Hours
ISE 135	Computer Modeling and Engineers	3		<b>GEP Requirement</b>	3
MA 242	Calculus III	4	CE 214 <i>or</i> MAE 206	Engineering Mechanics - Statics Engineering Statics	3
MSE 200 <i>or</i> MSE 201	Mechanical Properties of Structural Materials Structure and Properties of Engineering Materials	3	MA 303 <i>or</i> MA 341	Linear Analysis Applied Differential Equations I	3
PY 208	Physics for Engineers and Scientists II	3	ISE 311	Engineering Economic Analysis	3
PY 209	Physics for Engineers and Scientists II Lab	1	ST 372	Intro to Stat Inference and Regression	3
ST 371	Intro to Probability and Distribution Theory	3	<b>Total Credits</b>		<b>15</b>
<b>Total Credits</b>		<b>17</b>			

5th Semester		Hours	6th Semester		Hours
	<b>Ethics</b>	3		<b>Engineering Science Elective</b>	3
ISE 215	Introduction to Computer-Aided Design	1	ISE 315	Computer-Aided Manufacturing	1
ISE 216	Product Development and Rapid Prototyping	3	ISE 316	Manufacturing Engineering I - Processes	3
	<b>First Pick from ISE Group A</b>	3	<b>Second Pick from ISE Group A</b>		3
ISE 361	Deterministic Models in IE (CP)	3	<b>First Pick from ISE Group B</b>		3
ISE 362	Stochastic Models in IE (CP)	3	<b>Second Pick from ISE Group B</b>		3
<b>Total Credits</b>		<b>16</b>	<b>Total Credits</b>		<b>16</b>

7th Semester		Hours	8th Semester		Hours
	<b>Technical Elective</b>	3		<b>GEP Requirement</b>	3
ECE 331	Principles of Electrical Engineering	3		<b>GEP Requirement</b>	3
ENG 331	Technical Writing	3		<b>GEP Requirement</b>	3
	<b>Third Pick from ISE Group B</b>	3		<b>Technical Elective</b>	3
<b>ISE 520</b>	Healthcare Systems Performance Improvement I <i>or</i> <b>Technical Elective</b>	3	ISE 398	Lean Six Sigma for Industrial Engineers	1
<b>Total Credits</b>		<b>15</b>	ISE498 / <b>ISE521</b>	Senior Design Project (CP) / Healthcare Systems Performance Improvement II (CP)	3
			<b>Total Credits:</b>		<b>16</b>

**Minimum Credit Hours Required for Graduation 127**

ISE Group A		Hours
ISE 352	Fundamentals of Human-Machine Systems Design	3
ISE 443	Quality Control	3

ISE Group B		Hours
ISE 408	Control of Production and Service Systems (CP)	3
ISE 441	Introduction to Simulation (CP)	3
ISE 453	Modeling and Analysis of Supply Chains (CP)	3