

**Ashland University**  
**Bachelor of Science with a Comprehensive Major in Industrial and Systems Engineering**  
**Effective Fall 2023**

**INSTITUTIONAL REQUIREMENTS (Institutional Total Hours = 45)**

<b>Core Curriculum</b>		<b>Hours</b>
Communications	3	Aesthetics 6
Composition I & II	6	Humanities 6
Math / Logics*	3	Natural Sciences* 6
Cultural Critical Inquiry (CCI)	3	Social Science* 6
Religion	3	Historical Reasoning 3

**Bachelor of Science Industrial and Systems Engineering; CORE REQUIREMENTS FROM BUSINESS AND ECONOMICS:**

<b>Dept</b>	<b>Course/Title</b>	<b>Hours</b>	<b>Prerequisites</b>
IE 201	Engineering Management	3	None
IE 202	Engineering Economic Analysis	3	MATH 205, ECON 232
IE 203	Principles of Engineering	3	None
IE 205	Statics and Particle Mechanics	3	IE 204
IE 303	Productivity Analysis	3	IE 205, MATH 317
IE 304	Facility Layout and Material Handling	3	MATH 317, MFG 201
IE 305	Human Factors Engineering	3	IE 201, MATH 317
IE 401	Statistical Testing and Regression	3	IE 202, MATH 317
IE 402	Design of Experiments and Quality Assurance	3	IE 303, 401
IE 403	Supply Chain Analysis for Engineers	3	IE 304
IE 405	Probabilistic Methods in Operating Research	3	IE 401
IE 406	Simulation Modeling	3	IE 401
IE 407	Senior Project	3	Senior Status
CHEM 103	General Chemistry	4	H.S. Chem., 3 yrs. H.S. Math
ECON 232	Prin. of Microeconomics*	3	None
MATH 205	Calculus I	5	MATH 111 or Equivalent
MATH 206	Calculus II	5	MATH 205
MATH 233	Discrete Mathematics I	3	3 yrs. H.S. College Prep Math
MATH 250	Mathematical Proof	1	MATH 233
MATH 305	Calculus III	4	MATH 206
MATH 307	Linear Algebra	3	MATH 202, 206, or 224
MATH 308	Operations Research	3	MATH 224 or 307
MATH 313	Differential Equations	3	MATH 305
MATH 317	Probability	3	MATH 233, 250; MATH 202, or 206
MFG 201	Manufacturing Processes	3	None
PHYS 205	University Physics I	5	MATH 206
PHYS 206	University Physics II*	5	PHYS 205
MFG 310	Electrical Circuits & Devices	3	MATH 108 or 205
		92 hrs	

**TOTAL REQUIRED HOURS: 137**

**\*Total Required Hours does reflect:**

- Double Dipping of CHEM 103, ECON 232, PHYS 206 (College Core requirements)
- MATH 111 being met through H.S. College Prep Math