

**INDUSTRIAL AND SYSTEMS ENGINEERING
DEGREE REQUIREMENTS
Fall 2020-21, Total of 125.5 credit hours**

Freshman Year (31.5 hours)						
<u>Fall</u>			16	<u>Spring</u>		15.5
ECON 1030	Princ. of Microeconomics	3	ENG 1510	Writing and Rhetoric I	3	
ET 1100	Eng Graphics Fundamentals	2	ET 1500	Career Orientation	0.5	
ISE 1100	Intro to Computers and IE	3	MATH 2302	Calculus II	4	
MATH 2301	Calculus I	4	ET2100	Programming Elective	4	
CHEM 1210	Chemistry I	4		Tier II Elect. Humanities	2	
/1510				Tier II Elect. – Cross-Cultural	2	
Sophomore Year (33 hours)						
<u>Fall</u>			17	<u>Spring</u>		16
ISE 3200	Engineering Statistics	3	ET 3300	Engineering Economy	2	
MATH 3200	Applied Linear Algebra	3	ISE 3341	Work Design	3	
PHYS 2051	General Physics I	5	ISE 3210	Engineering Probability	3	
PSY 1010	General Psychology	3	MATH 3050	Discrete Mathematics	3	
	Business Elective	3	ET 3132	Basic Electrical Engr. I	2	
				ISE Technical Elective	3	
Junior Year (30 hours)						
<u>Fall</u>			15	<u>Spring</u>		15
ISE 4120	Inventory & Mfg. Control I	3	ISE 3400J	Writing and Comm. Elective	3	
ISE 4140	Operations Research	3	ISE 4151	Information Systems	4	
	ISE Technical Elective	3	ISE 4170	Lean Manuf. & Service Syst.	3	
	Math/Science Elective	3		ISE Technical Elective	3	
	Business Elective	3		Tier II Elect. – Fine Arts	2	
Senior Year (31 hours)						
<u>Fall</u>			16	<u>Spring</u>		15
ISE 4130	Computer Simulation	3	ISE 4192	Senior Capstone II	6	
ISE 4160	Six Sigma	3	ISE 4311	Applied Systems Engineering	3	
ISE 4490	Project Management	2		ISE Technical Elective	3	
	ISE Technical Elective	3		Math/Science Elective	3	
	ISE Technical Elective	2				
	ISE Technical Elective	3				

ELECTIVE CATEGORIES

- **ISE Technical Electives:** 20 semester credits
- **Math/Science Electives:** 2 courses
- **Business Electives:** 2 courses
- **Programming Elective:** ISE2000 or ET2100
- **Writing and Communication Elective:** ISE3400J or ETM3700J

ISE Technical Electives

Any non-required ISE 4000-level course, or any non-ISE course from the approved list. Many courses lead to completion of certificates for desired specialization. However, students must accumulate a minimum of 8 semester credits of ISE elective courses, and minimum of 14 hours of engineering/technology electives (including ISE).

ISE Technical Electives

ISE Electives

Course	Title (Credits)
ISE 4300	Intro to Designed Expts. (2)
ISE 4310	Intro. to Systems Eng. (2)
ISE 4320	Inventory and Mfg Control II (2)
ISE 4325	Supply Chain Engineering (3)
ISE 4330	Cost Engineering (3)
ISE 4335	Appl. of Math. Programming (2)
ISE 4350	Database Information Systems (3)
ISE 4355	Intro. to Reliability Engrg (3)
ISE 4360	Facility Planning & Design (3)
ISE 4370	Manufacturing Systems (3)
ISE 4375	Computer Integrated Mfg (3)
ISE 4380	Human Factors Engineering (3)

Non-Engineering Technical Electives

BIOS 2030	Human Biology II (3)
EH 2000	Intro Env Hlth & Safety (3)
EH 4400	Occup. Safety & Hlth (3)
HLTH2170	Health System Organization (3)
HLTH3350	Mgmt of Hlth Care Org (3)
HLTH3400	Problems in Hlth Care Org (3)
MKT 4040	Logist & Supp Chain Mgt (3)
MKT 4250	Business-to-Business Mkt (3)

Other Engineering Technical Electives

Course	Title (Credits)
CE 3530	Basics of Environ Engr (3)
CE 4160	Construction Estim. & Eqpt. (3)
CE 4170	Proj. Planning and Sched. (3)
CE 4190	Proj. Devel., Contr. & Law (3)
CS 2300	Computer Programming in JAVA (4)
CS 2400	Intro. to Computer Science I (4)
CS 3610	Data Structures (4)
EE 3143	Basic Electrical Engr. II (3)
ET 2100	Programming in C (4)
ET 2200	Statics (3)
ET 2220	Strength of Materials (3)
ET 2240	Dynamics (3)
ET 2300	Principles of Engr Materials (3)
ET 3200	Engr Thermodynamics (3)
ETM 3070	Mfg Design and Lab (3)
ME 3022	Heat and Fluid Transport I (3)
ME 4670	Engr Biomechanics (3)

Math/Science Electives	
Course	Title (Credits)
BIOS 1030	Human Biology Basic Princ. (3)
CHEM 1220	Principles of Chemistry II (4)
CHEM 1520	Fundamentals of Chem. II (4)
MATH 3300	Calculus III (4)
MATH 3320	Vector Analysis (3)
MATH 3400	Differential Equations (3)
MATH 4630	Discrete Modeling & Opt. (3)
PHYS 2052	General Physics II (5)

Business Electives	
Course	Title (Credits)
ACCT 1010	Foundations of Accounting (3)
BUSL 2000	Law and Society (3)
ECON 1040	Macroeconomics (3)
MGT 2000	Intro to Management (3)
MGT 3550	Creativity and Innovation Management (3)
MKT 2020	Marketing Principles (3)

Students are eligible and encouraged to complete any of offered certificates or minors.