

INDUSTRIAL AND SYSTEMS ENGINEERING - Catalog Year 2019

Total Credits = **120**

Freshman Year *Fall* Semester

Course Code	Description	Cr	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
EGR 105	Foundations of Engineering I (A4)	1	
MTH 141 +	Calculus I (A1, B3)	4	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
			15

Freshman Year *Spring* Semester

Course Code	Description	Cr	
EGR 106	Foundations of Engineering II (A4)	2	
MTH 142 +	Calculus II (A1, B3)	4	
PHY 203	Elementary Physics I (A1)	3	
PHY 273	Elementary Physics Lab I (A1)	1	
	General Education Outcome(s)*	3	
	General Education Outcome(s)*	3	
			16

Sophomore Year *Fall* Semester

Course Code	Description	Cr	
ISE 240 and 241 <i>or</i> MCE 201	Mfg Processes and Systems (3), Mfg Processes and Systems Lab (1) ----- Engineering Graphics (3)	3-4	
ISE/SUS 261G	Sustainable Lean Production (A1, B4, G)	3	
MCE 262	Statics	3	
MTH 362	Advanced Engineering Mathematics	3	
PHY 204	Elementary Physics II Lab (A1)	3	
PHY 274	Elementary Physics II (A1)	1	
			16-17

Sophomore Year *Spring* Semester

Course Code	Description	Cr	
EGR 316G	Engineering Ethics (A3, C1, G)	3	
ISE 240 and 241 <i>or</i> MCE 201	Mfg Processes and Systems (3), Mfg Processes and Systems Lab (1) ----- Engineering Graphics (3)	3-4	
MTH 243 +	Calculus for Functions of Several Vars (A1, B3)	3	
	Science Elective**	3	
	Technical Elective***	3	
			15-16

Admission to the COE required for enrollment in "300" level and higher COE courses. Admission requires at least a 2.0 cumulative GPA and a C- or higher in each of the following; EGR 105 & 106, CHM 101/102, MTH 141 & 142, PHY 203/273, and either PHY 204/274 *or* CHM 112/114

Junior Year *Fall* Semester

Course Code	Description	Cr	
BUS 201	Financial Accounting	3	
CHE 333	Engineering Materials	3	
ISE 311	Probability and Statistics for Engineers	3	
ISE 325	Computer Tools for Engineers	3	
ISE 332	Deterministic Systems	3	
			15

Junior Year *Spring* Semester

Course Code	Description	Cr	
ISE 304	Engineering Economy and Proj Planning	3	
ISE 312	Statistical Methods and Quality Systems	3	
ISE 333	Stochastic Systems	3	
ISE 334	Simulation Modeling and Analysis	3	
	Professional Elective****	3	
			15

Senior Year *Fall* Semester

Course Code	Description	Cr	
ISE 401	ISE Capstone Design I	3	
ISE 420	Intro to Human Factors and Ergonomics	3	
ISE 451	Production System Design	3	
	Professional Elective****	3	
	General Education Outcome(s)*	3	
			15

Senior Year *Spring* Semester

Course Code	Description	Cr	
ISE 402	ISE Capstone Design II (D1)	3	
	Professional Elective****	3	
	Professional Elective****	3	
	Technical Elective***	3	
			12

* **General Education Outcomes:** if all Outcomes are satisfied in fewer spaces than provided, you must complete additional coursework of your choice (Free Elective) to ensure you have earned at least 120 credits as required to earn a BS degree. See the "General Education Outcomes" section at the bottom of page two for more information on satisfying these requirements.

** **Science Elective:** choose *one* (1) from CHM 112, CHM 124, KIN 122, NRS 100, or PHY 205/275

*** **Technical Electives:** choose *two* (2) from CVE 220, ELE 220, or MCE 263

**** **Professional Electives:** Must be satisfied by *twelve* (12) credits of professional electives, *at least six* (6) of which must be 400- or 500-level ISE courses not required by the ISE major. The *remaining courses* may be any 300-, 400-, or 500- level courses offered by the College of Engineering not required by the ISE major, CSC, MTH, or PHY (*except* CHE 428, 451, 452; CSC 320; MTH 381, 420, 451, 452; PHY 322, 381, 382; courses in professional practice; seminars); BUS 320, 341, 344, 355, 365, 420, 443, 444, 448, 449 450; ECN 323, 324, 327, 328, 344, 363, 368, 376; any 500-level STA courses (except STA 532); MBA 530, 550 (requires ISE/MBA 4+1 Admission); PSY 335, 384, 385, 434. Note: Only ISE 513 or STA 513 will be allowed – not both (these are cross-listed courses).

+ Course prerequisites include grade requirements in previous coursework, see catalog or eCampus course description for details

