INDUSTRIAL & SYSTEMS ENGINEERING - Catalog Year 2026

Total Credits = 120-121

Freshman Year, Fall Semester

Course Code	Description	Cr	Grade
EGR 101	Intro. to Eng. Design & Innov. (A4)	2	
MTH 141 +	Calculus I (A1, B3)	4	
CHM 101	General Chemistry Lec I (A1)	3	
CHM 102	General Chemistry I Lab	1	
	General Education Outcome(s)[1]	3	
	General Education Outcome(s)[1]	3	
		16	

Freshman Year, Spring Semester

Course Code	Description	Cr	Grade
EGR 106	Matlab for Engineering Applications (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)[1]	3	
	General Education Outcome(s)[1]	3	
		16	

Sophomore Year, Fall Semester

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

Sophomore Year, Spring Semester

Course Code	Description	Cr	Grade
MTH 243 +	Calculus for Functions of Several Vars (A1, B3)	3	
EGR 316G	Engineering Ethics (A3, C1, G)	3	
[ISE 240 & 241] **or** MCE 201	[Mfg Processes and Systems (3) & Lab (1)] **or** Engineering Graphics (3)	3-4	
	Science Elective[2]	3	
	Technical Elective[3]	3	
		15 - 16	

Junior Year, Fall Semester

Course Code	Description	Cr	Grade
ACC (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	Grade
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[4]	3	
		15	

Senior Year, Fall Semester

Course Code	Description	Cr	Grade
ISE 401	ISE Capstone Design I [capstone]	3	
ISE 420	Intro to Human Factors and Ergonomics	3	
ISE 451	Production System Design	3	
	Professional Elective[4]	3	
	General Education Outcome(s)[1]	3	
		15	

Senior Year, Spring Semester

Course Code	Description	Cr	Grade
ISE 402	ISE Capstone Design II [capstone] (D1)	3	
	Professional Elective[4]	3	
	Professional Elective[4]	3	
	Technical Elective[3]	3	
		12	

Notes:
+ Course pre-requsites include grade requirements in previous coursework, see catalog or eCampus course description for details.

1) General Education Outcomes (A1-D1): if all outcomes are satisfied in fewer spaces than provided, you must take a course(s) of your choice (Free Elective) to ensure you have earned at least 120 credits as required to earn a BS degree. A complete detailing of these requirements are listed in the college's curriculum requirements section of this catalog.

2) Science Elective: Choose one (1) from CHM 112, CHM 124, KIN 122, NRS 100, or PHY 205 and PHY 2753

3) Technical Elective: Choose two (2) from CVE 220, ELE 220, or MCE 2634

4) Professional Elective Requirements: Must be satisfied by twelve (12) credits of professional electives, at least six (6) of which must be400- or 500-level ISE courses not required by the ISE major. The remaining courses may be any 300-, 400-, or 500- level coursesoffered 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); FIN 420, INE 449, MGT 341, 344, 443,444, 448, 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).

EGR101 is intended for and required of all first-year engineering students. Course substitution is considered only on an exception basis for transfer students with 24 or more earned credits, or for students with unique circumstances, and requires prior approval of the Assistant Dean for Undergraduate Affairs.