



ADVISING WORKSHEET: INDUSTRIAL ENGINEERING

GENERAL NOTES

- A minimum of 123 credits are required for graduation.
 - Credits earned for COM 100 and MAT 100 do not count toward the 123 credits required for graduation; however, COM 100 students may petition for elective credit.
 - Where appropriate, courses required for the major can be used to satisfy General Education requirements. However, the credits earned for these courses are applied to either Gen Ed requirements or the major, not both.
 - Paths of Knowledge coursework may count towards major or minor requirements, but may not fulfill Mid-Level Liberal Arts Exploration requirement.
 - Students are expected to follow the catalog requirements for General Education, the major, and additional requirements.
 - A minor or second major within the areas listed under Paths of Knowledge automatically fulfills that area of the Gen Ed requirements.
-

MAJOR NOTES

The Engineering majors (electrical, mechanical, and industrial) are fundamentally sound in math and science and application ready (i.e., ready and able to apply their knowledge to solve cutting-edge issues). This is accomplished by extensive fundamental math and science training and hands-on training in cutting-edge industry and labs. The key features of the engineering majors include a common core of engineering curriculum that allows exposure to all disciplines before selecting a major, four semesters of interdisciplinary design courses, and co-op or internship experience in an advanced industry or faculty applied research lab inclusive of professional mentoring.

General Education (54-56 credits)

First Year Curriculum: Enduring Questions	Credits Required	Course	Term	Grade	Credits Earned
SEARCH Seminar-Enduring Questions or Honor Search-Enduring Questions	3	SRH 101 / HNR 160			
COM 101: Composition & Research (Must earn a C or higher)	3	COM 101			
THE 105: Foundations of Theology	3	THE 105			
PHI 105: Introduction to Philosophy	3	PHI 105			

Mid-Level Liberal Arts Exploration	Credits Required	Course	Term	Grade	Credits Earned
EXPLORING THE NATURAL WORLD (6-8 credits)					
Lab Science (Biology, Chemistry, Physics)	3-4	MET w/CHE 104/110			
Math (Other than MAT 100)	3-4	MET w/MAT 230			
INDIVIDUALS & COMMUNITIES (6 credits)					
History or Political Science	3				
PSY 101, HIS, POS, SOC, SSC, or ECON	3				
CULTURE & LANGUAGE (9 credits)					
Communication (Not COM 100 or 101)	3				
World Language – 2 courses in sequence	3				
	3				
CREATIVE EXPRESSIONS (6 credits)					
Literature (ENG)	3				
Art or Music or Theatre	3	MET with THR 244			

Ethical Leaders and Followers	Credits Required	Course	Term	Grade	Credits Earned
Theology or Philosophy (200-400 level)	3				
Theology or Philosophy (Ethics/Morality @ 200 level)	3	MET w/ PHI 208			

Paths of Knowledge – Choose 1 Path		PoK may count towards minor or Related Requirements, but not Mid-Level Arts Exploration requirements.			
<p>_____PATH 1:</p> <p>Interdisciplinary Study (IS) Three courses, at least two from Liberal Arts disciplines, not the major, at the 200-400 level from the interdisciplinary minors of Women & Gender Studies, Digital Media, Community & Environmental Sustainability, Community Engagement, Cultural Studies, Leadership Studies or Pre-Law.</p>	<p>_____PATH 2:</p> <p>Multi-disciplinary Study (MS) Three courses, at least two from Liberal Arts disciplines, not the major, at the 200-400 level employing multiple disciplinary perspectives to explore the Enduring Questions in one of the following themes: Cultural & Global Studies, Imagination & Creativity, Peace & Conflict, Poverty & Wealth or Sustainability, Science & Technology.</p>	<p>_____PATH 3:</p> <p>In-depth Disciplinary Study (DS) Three courses at the 200-400 level in one Liberal Arts discipline other than one's major, guided by common ideas and methods of inquiry. Students choose from Art, Biology, Chemistry, Communication, Computer Science, Economics, English, History, Mathematics, Music, Philosophy, Political Science, Psychology, Sociology, Theology, Theatre or World Languages. This path may be used to give students a firm foundation in a discipline supporting their chosen major, or to pursue an interest in one of the Liberal Arts disciplines.</p>			
Course (See Catalog for lists of approved courses for each area.) PATH 3-MATH		Area or Discipline	Term	Grade	Credits Earned
MET IN RELATED REQUIREMENTS with MAT					
MET IN RELATED REQUIREMENTS with MAT					
MET IN RELATED REQUIREMENTS with MAT					

BS ENGINEERING (98-103 credits)

REQUIRED ENGINEERING COR COURSES (14 credits)				
Course	Pre-Requisites	Term	Grade	Credits
EGR 107: Engineering Lab Safety				1
EGR 110: Engineering Design I				1
EGR 206: Mechatronics	EE 200			3
EGR 210: Engineering Design II	EGR 110			1
EGR 480: Senior Capstone Design I	EGR 210			2
EGR 481: Senior Capstone Design II	EGR 480			2
EE 200: Circuits I w/Lab	MAT 230			4

ELECTRICAL ENGINEERING: (29 credits)				
Course	Pre-Requisite	Term	Grade	Credits
IE 201: Work Systems/Ops Mgmt				4
IE 211: Modern Manufacturing w/Lab				4
IE 302: Production & Inventory Control				3
IE 310: Stochastic Models/Operations	MAT 345			3
IE 321: Industrial Automation & Robotics				3
IE 331: Production Engineering				3
IE 402: Product Quality	IE 310			3
IE 410: Optimization				3
IE 421: Systems Engineering Design				3

RELATED REQUIREMENTS (47 credits)				
Course	Pre-Requisite	Term	Grade	Credits
CHE 104: General Chemistry I				3
CHE 110: General Chemistry I Lab				1
CS 155: Intro Object-Oriented Prog	Satisfactory score on Math Placement test			3
MAT 230: Calculus I	MAT 131 or satisfactory score on Math Placement test			4
MAT 231: Calculus II	MAT 230			4
MAT 322: Differential Equations	MAT 331			3
MAT 345: Applied Probability & Linear Methods	MAT 230, CS 155			4
PHI 208: Ethics & Technology				3
PSY 200: Physics I w/Lab	MAT 230			4
PSY 201: Physics II w/Lab	PHY 200			4
PHY 202: Statics	PHY 200, MAT 230			3
PHY 304: Modern Physics	PHY 201			4
THR 244: Computer Assisted Design				3

Industrial Engineering Majors:				
Course	Pre-Requisite	Term	Grade	Credits
MAT 232: Calculus III	MAT 231			4
MAJOR ELECTIVES: (9 credits)- select from EGR 311, EE 351 (may be repeated with different topics), any IE or ME 300-400 level course				
Course	Pre-Requisite	Term	Grade	Credits

*** Please be advised to double check the 22-23 Course Catalog to ensure that you meet all prerequisite expectations for all required and related classes for this major.***

EIGHT SEMESTER PLAN

Below is a recommended sequence of courses for this major. Courses highlighted in **RED** identifies the courses that must be taken and passed during the suggested semester in order for a student to stay on track toward completing the degree program within 4 years. Please meet with your academic advisor prior to registering for each new semester.

Semester 1	Credits	Semester 2	Credits		
SRH 101: Search Seminar or HNR 160: Honors Search	3	PHY 200: Physics I with Lab	4		
CHE 104: General Chemistry	3	COM 101: Composition & Research	3		
CHE 110: General Chemistry I w/Lab	1	MAT 231: Calculus II	4		
EGR 107: Engineering Lab Safety	1	EGR 110: Engineering Design I	1		
MAT 230: Calculus I	4	THR 244: Computer-Assisted Design	3		
CS 155: Intro to Object-Oriented Prog.	3				
TOTAL	15	TOTAL	16		
Semester 3	Credits	Semester 4	Credits		
PHY 201: Physics II with Lab	4	Gen Ed SEARCH	3		
MAT 322: Differential Equations	4	EGR 210: Engineering Design II	1		
PHY 202: Statics	3	IE 201: Work Systems & Operations Mgmt	4		
THE 105 or PHI 105	3	IE 211: Modern Manufacturing w/Lab	4		
PHY 202: Statics	3	MAT 322: Differential Equations	3		
		THE 105 or PHI 105	3		
TOTAL	16	TOTAL	16		
Semester 5	Credits	Semester 6	Credits		
IE 321: Industrial Automation and Robotics	3	IE 310: Stochastic Models in Operations	3		
IE 302: Production and Inventory Control	3	IE 331: Production Engineering	3		
PHY 304: Modern Physics w/Lab	4	EGR 311: Internship/Research	3		
MAT 345: Applied Probability & Linear Methods	4	Gen Ed SEARCH: PHI 208	3		
EGR 206: Mechatronics	3	Gen Ed SEARCH	3		
TOTAL	17	TOTAL	15		
Semester 7	Credits	Semester 8	Credits		
IE 402: Product Quality	3	IE 421: Systems Engineering Design	3		
IE 410: Optimization	3	EGR: 481: Capstone Design II	2		
EGR 480: Capstone Design I	2	Major Elective	3		
Gen Ed SEARCH	3	Major Elective	3		
Gen Ed SEARCH	3	Gen Ed SEARCH	3		
Gen Ed SEARCH	3	Gen Ed SEARCH	3		
TOTAL	17	TOTAL	17		
ADDITIONAL GRADUATION REQUIREMENTS		RESIDENCY REQUIREMENTS		GRADUATION CREDITS EARNED	
<input type="checkbox"/> SRH 101/HNR 160: FIRST YEAR SEMINAR <input type="checkbox"/> HUMAN DIVERSITY <input type="checkbox"/> COMMUNITY SERVICE HOURS <input type="checkbox"/> OVERALL GPA = 2.0 or higher <input type="checkbox"/> GPA IN MAJOR = 2.0 or higher <input type="checkbox"/> 2.5 in Writing Courses <input type="checkbox"/> SENIOR CAPSTONE: met with EGR 480/481 <input type="checkbox"/> WRITING ENHANCED COURSE		<input type="checkbox"/> Minimum of 123 non-remedial credits earned <input type="checkbox"/> 45 of last 60 credits <input type="checkbox"/> Minimum of 12 Alvernia credits in the major <input type="checkbox"/> Minimum of 9 Alvernia credits in the minor (if applicable)		Liberal Arts Core credits earned <input style="width: 50px;" type="text"/>	
				Major and Related Area credits earned <input style="width: 50px;" type="text"/>	
				Elective and/or Minor credits earned <input style="width: 50px;" type="text"/>	
				SUBTOTAL <input style="width: 50px;" type="text"/>	
				SUBTRACT CREDITS EARNED FOR MAT 100, and if applicable COM 100 <input style="width: 50px;" type="text"/>	
				TOTAL GRADUATION CREDITS <input style="width: 50px;" type="text"/>	

Academic Policy on Eligibility for Participation of May Commencement Ceremony

The academic policy, which the Registrar follows, is: A student who has 6 or less credits remaining to complete the degree may participate in the May Commencement Ceremony. **Application Deadlines:** August Graduation - December 1; December Graduation - March 1; May Graduation - October 1. Any questions, please call the Registrar's Office.