MECHANICAL ENGINEERING

Plan of Study

Below is a sample plan of study that illustrates one way to achieve the program requirements. Any given student's plan of study may differ based on a variety of factors (e.g., advanced credit, placement exams, adding a minor). Enrolled students will work with their academic advisor; utilize the degree audit/planner to create a specific plan of study.

Course	Title	Hours
Freshman		
Fall		
MA 111	Calculus I	5
PH 111	Physics I (Foundational Science) [1]	4
PH 111L	Physics I Lab	0
RHIT 100	Foundations for Rose-Hulman Success	1
EM 104	Graphical Communications	2
Select one of the following:		4
HUM H190	First-Year Writing Seminar	
HSSA Elective		
	Hours	**16**
Winter		
MA 112	Calculus II	5
PH 112L	Physics II Lab	0
PH 112	Physics II (Foundational Science) [1]	4
EM 121	Statics & Mechanics of Materials I	4
Select one of the following:		4
HSSA Elective		
HUM H190	First-Year Writing Seminar	
	Hours	**17**
Spring		
MA 113	Calculus III	5
EM 103	Introduction to Design	2
ME 123	Computer Programming	4
Select one of the following Foundational Science courses: [1]		4
CHEM 111	General Chemistry I	
BIO 101	Essential Biology	
	Hours	**15**
Sophomore		
Fall		
MA 221	Matrix Algebra & Differential Equations I	4
ES 201	Conservation & Accounting Principles	4
ES 213	Electrical Systems	3
ES 213L	Electrical Systems Lab	1
Select one of the following Foundational Science courses: [1]		4
BIO 101	Essential Biology	
CHEM 111	General Chemistry I	
	Hours	**16**
Winter		
MA 222	Matrix Algebra & Differential Equations II	4
ME 201	Applications of Thermodynamics	4
ES 214	Mechanical Systems	4
HSSA Elective		4
	Hours	**16**
Spring		
MA 223	Engineering Statistics	4
HSSA Elective		4
ME 227	Numerical Methods	4
ME 230	Mechatronic Systems	4
	Hours	**16**
Junior		
Fall		
EM 204	Statics & Mechanics of Materials II	4
ES 305	System Dynamics	4
ES 312	Fluid Systems	4
Free Elective [2]		4
	Hours	**16**
Winter		
ME 317	Design for Manufacturing	4
ME 328 or ME 321	Materials Engineering or Measurement Systems	4
Select one of the following:		4
ENGL H290	Technical & Professional Communication	
HSSA Elective		
ME 306 or EM 306	Control Systems or Vibration Analysis	4
	Hours	**16**
Spring		
ME 302	Heat Transfer	4
ME 321 or ME 328	Measurement Systems or Materials Engineering	4
ME 380	Machine Component Design	4
Select one of the following:		4
HSSA Elective split winter		
ENGL H290	Technical & Professional Communication (split spring)	
	Hours	**16**
Senior		
Fall		
ME 470	Capstone Design I	4
ME 421	Mechanical Engineering Laboratory	2
or		
Tech Elective [2]		
HSSA Elective		4
Math/Science Elective [2]		4
Tech Elective		4
	Hours	**18**
Winter		
ME 471	Capstone Design II	4
Tech Elective [2]		4
or ME 421		
HSSA Elective		4
Free Elective [2]		4
	Hours	**16**
Spring		
ME 472	Capstone Design III	4
Tech Elective [2]		4
Tech Elective [2]		4
HSSA Elective		4
	Hours	**16**
	Total Hours	**194**

1. Students must complete four foundational science classes, one in Biology (BIO 101 Essential Biology or BIO 110 Cell Structure and Function or BIO 120 Comparative Anatomy & Physiology or BIO 130 Evolution & Diversity), two in Physics (PH 111 Physics I and PH 112 Physics II), and one in Chemistry (CHEM 111 General Chemistry I). All foundational science classes have a laboratory component.
2. 28 credit hours in electives composed of 16 credit hours in technical electives, 8 credit hours in free electives, and 4 credit hours of a math elective or a science elective. A technical elective is any course (at the 200 level or above) in biomathematics, chemistry, computer science, engineering, engineering management, geology, mathematics, or

physics that is not cross-listed with HSSA or similar in content to a required course. A math elective is at the 200-level or higher and has an MA or BMTH prefix. A science elective is any course in biology, chemistry, geology, or physics except those courses that are cross-listed with an engineering course.