



**Bachelor of Science**

**Major: Mechanical Engineering**

**Specialization: Aerospace Engineering**

**2021-2022 Sample 4-Year Plan**

**Total Degree Requirements: 130 credits**

Student \_\_\_\_\_ Student ID# \_\_\_\_\_ Student Phone # \_\_\_\_\_  
 Advisor \_\_\_\_\_ Minimum GPA 2.00\* Minor/Career Interest(s) \_\_\_\_\_

Students are not limited to this plan; it is meant to be used as a guide for planning purposes in consultation with your advisor. The sample schedule is one possible path to completing your degree within four years. For official program requirements, please refer to the [Undergraduate Catalog](#).

**First Year**

**Fall**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
CHEM 112	General Chemistry I (SGR #6)	p. MATH 114 or higher	3		
CHEM 112L	General Chemistry I Lab		1		
GE 101	Introduction to Engineering and Technical Professions		1		
MATH 123	Calculus I (SGR #5)	p. Placement or MATH 115 Minimum grade of "C" required.	4		
ME 121-121L	Production and Fabrication Processes and Lab		2		
SGR #3	Social Sciences/Diversity		3		
CMST 101	Fundamentals of Speech (SGR #2)		3		
<b>Total Credit Hours</b>			17		

**Spring**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EM 214	Statics	p. MATH 123 Minimum grade of "C" required.	3		
ENGL 101	Composition I (SGR #1)	p. Placement	3		
MATH 125	Calculus II	p. MATH 123 Minimum grade of "C" required.	4		
ME 212-212L	Mechanical Engineering Design Technologies and Lab	p. MATH 115 or consent	2		
PHYS 211-211L	University Physics I and Lab	p. MATH 123 Minimum grade of "C" required.	4		
<b>Total Credit Hours</b>			16		

**Second Year**

**Fall**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EM 215	Dynamics	p. EM 214 Minimum grade of "C" required.	3		
EM 321	Mechanics of Materials	p. EM 214 Minimum grade of "C" required	3		
MATH 321	Differential Equations	p. MATH 125	3		
ME 241	Engineering Materials	p. MATH 123 and CHEM 112-112L	3		
PHYS 213-213L	University Physics II and Lab	PHYS 211-211L and MATH 123	4		
<b>Total Credit Hours</b>			16		

**Spring**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ECON 201	Principles of Microeconomics (SGR #3)		3		
ENGL 277	Technical Writing in Engineering	p. ENGL 101 and GE 101 or GE 109 or PHYS 109 or PHYS 119, or consent	3		
GE 231	Technology, Society, and Ethics		3		
MATH 331 or MATH 471	Advanced Engineering Math or Numerical Analysis	p. MATH 321 or p. MATH 225	3		

**Information Subject to Change. This is not a contract.**

p. = Course Prerequisite  
 Semester: F = Fall, S = Spring, SU = Summer



Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ME 230-230L	Engineering Design Methods and Lab	p. EM 214 and ME 121-121L and ME 212-212L	2		
ME 311	Thermodynamics I	p. PHYS 211-211L and EM 215. Minimum grade of "C" required.	3		
<b>Total Credit Hours</b>			17		

**Third Year**

**Fall**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EE 300	Basic Electrical Engineering I	p. MATH 125 and PHYS 213	2	F	
EE 300L	Basic Electrical Engineering I Lab		1	F	
EM 331	Fluid Mechanics	p. EM 215. Minimum grade of "C" required.	3		
MATH 225	Calculus III	p. MATH 125	4		
ME 312	Thermodynamics II	p. ME 311 and MATH 321. Minimum grade of "C" required.	3		
ME 321	Fundamentals of Machine Design	p. EM 215	3		
<b>Total Credit Hours</b>			16		

**Spring**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EE 302	Basic Electrical Engineering II	p. EE 300-300L	2	S	
EE 302L	Basic Electrical Engineering II Lab		1	S	
ME 376-376L	Measurements and Instrumentation and Lab	p. ENGL 277 and Co-requisites EM 321 and EM 331	2		
ME 415	Heat Transfer	p. ME 311 and EM 331 and MATH 321 or consent	3		
ME 421	Design of Machine Elements	p. EM 321 and ME 321	3		
SGR #4	Arts and Humanities/Diversity		3		
STAT 381	Introduction to Probability and Statistics	p. MATH 125	3		
<b>Total Credit Hours</b>			17		

**Fourth Year**

**Fall**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ME 323	Vibrations	p. EM 215 and EM 321 and MATH 331 or MATH 471	3		
ME 476	Thermo-fluids Lab	p. ME 376-376L and EM 331 and ME 312 and ME 415	1		
ME 478	Mechanical Systems Design I	p. ME 421 and MATH 331 or MATH 471	2		
ME 490	Seminar		1		
Tech Electives	Choose from list**		3		
Tech Electives	Choose from list**		3		
Tech Electives	Choose from list**		3		
<b>Total Credit Hours</b>			16		

**Spring**

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ME 451	Automatic Controls	p. EE 300-300L or consent and MATH 331 or MATH 471	3		
ME 452	Dynamic Systems Lab	p. ME 323	1		
ME 479-479L	Mechanical Systems Design II and Lab	p. ME 478	2		
SGR #4	Arts and Humanities/Diversity		3		
ME 413	Turbomachinery	p. EM 331, ME 312	3		
ME 431	Aerodynamics	p. EM 331	3		
<b>Total Credit Hours</b>			15		

Information Subject to Change. This is not a contract.

p. = Course Prerequisite  
Semester: F = Fall, S = Spring, SU = Summer



**Comments/Notes**

Students from all academic majors can pursue graduation with Fishback Honors College distinction. View the [Honors program requirements](#).

**\*Minimum overall GPA of 2.0 (C average) in Mathematics/Statistics courses required.**

**\*Minimum overall GPA of 2.0 (C average) in all ME-prefix courses required.**

**\*\*Approved Technical Electives for Aerospace Engineering Specialization:**

ABE 350/350L Hydraulic and Pneumatic Systems & Lab, p. ME 311 or ME 314

ME 341/341L Metallurgy & Lab, p. ME 241

ME 417/417L Computer-Aided Engineering & Lab

ME 433/433L Non-Destructive Testing & Evaluation & Lab, p. EM 215, EM 321, MATH 321

ME 437 Gas Dynamics I, p. EM 331, MATH 331

ME 441 Robotic Systems, p. ME 321

ME 442 Applications of Computational Fluid Dynamics, p. EM 331, ME 311, MATH 321