South Dakota State University

Bachelor of Science
Major: Mechanical Engineering
Specialization: Aerospace Engineering
2025-2026 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 (SGR #6)		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	Production and Fabrication Processes		1		
ME 121L	Production and Fabrication Processes Lab	c. ME 121	1		
SGR #2	Oral Communication		3		
SGR #3	Social Sciences	Must satisfy civics requirement	3		
		Total Credit Hours	17		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EM 214	Statics	p. MATH 123 Minimum grade of "C" required.	3		
MATH 125	Calculus II	p. MATH 123 Minimum grade of "C" required.	4		
ME 212	Mechanical Engineering Design Technologies	p. MATH 115 or consent	1		
PHYS 207	Fundamentals of Physics I (SGR #6)	p. MATH 123 Minimum grade of "C" required.	3		
PHYS 207L	Fundamentals of Physics I Lab (SGR #6)	c. PHYS 207	1		
SGR #1	Written Communication	p. Placement	3		
		Total Credit Hours	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 209	Fundamentals of Physics II	p. PHYS 207-207L and MATH 123	3		
PHYS 209L	Fundamentals of Physics II Lab	c. PHYS 209	1		
		Total Credit Hours	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 (SGR #1)	p. ENGL 101	3		
MATH 331 or MATH 471	Advanced Engineering Math or Numerical Analysis	p. MATH 321 or p. MATH 225	3		
ME 230	Engineering Design Methods	p. EM 214 and ME 121-121L and ME 212-212L	3		
ME 311	Thermodynamics I	p. PHYS 207-207L and EM 215. Minimum grade of "C" required.	3		
ME 376	Measurements and Materials Characterization Lab	p. ENGL 277, ME 241 and EM 321	1		

Information Subject to Change. This is not a contract.

p. = Course Prerequisite; c. = Course Co-requisite
Semester: F = Fall, S = Spring, SU = Summer

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
		Total Credit Hours	16		

THIRD YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EE 300	Basic Electrical Engineering I	p. MATH 125 and PHYS 209	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		
ME 377	Thermodynamics and Fluid Mechanics Lab	p. ME 311 and EM 331	1		
		Total Credit Hours	17		

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 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		
ME 476	Machine Components and Heat Transfer Lab	c. ME 415 and ME 421	1		
SGR #4	Arts and Humanities		3		
STAT 381	Introduction to Probability and Statistics	p. MATH 125	3		
		Total Credit Hours	16		

FOURTH YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ME 301	Engineering Ethics and Economics		1		
ME 323	Vibrations	p. EM 215 and EM 321 and MATH 331 or MATH 471	3		
ME 451	Automatic Controls	p. EE 300-300L or consent and MATH 331 or MATH 471	3		
ME 452	Mechatronics and Vibration Lab	c. ME 323 and ME 478	1		
ME 478	Mechanical Systems Design I	p. ME 421 and MATH 331 or MATH 471	3		
Tech Electives	Choose from list**		3		
Tech Electives	Choose from list**		3		
		Total Credit Hours	17		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ME 413	Turbomachinery	p. EM 331 and ME 312	3		
ME 431	Aerodynamics	p. EM 331	3		
ME 479	Mechanical Systems Design II	p. ME 478	3		
SGR #4	Arts and Humanities		3		
Tech Electives	Choose from list**		3		
		Total Credit Hours	15		

COMMENTS/NOTES

Students from all academic majors can pursue graduation with Fishback Honors College distinction. View the Honors program requirements.

A combined average of "C" or better in the mechanical engineering courses.
A combined average of "C" or better in the mathematics courses.
A minimum grade of "C" in each of the following courses: MATH 123, MATH 125, PHYS 207, ME 311, ME 312, and all EM designated courses. Students who fail to earn a "C" or better in any of these courses, will be required to repeat them in each subsequent semester until the requirement is met.

**Approved Technical Electives for Aerospace Engineering Specialization: ABE 350-350L Hydraulic and Pneumatic Systems & Lab (p. ME 311 or ME 314); ME 341 Metallurgy (p. ME 241); ME 417 Computer-Aided Engineering, ME 433 Non-Destructive Testing & Evaluation (p. EM 215, EM 321, MATH 321); ME 437 Gas Dynamics I (p. EM 331 and MATH 331); ME 441 Robotic Systems (p. ME 321); ME 442 Applications of Computational Fluid Dynamics (p. EM 331, ME 311, and MATH 321)

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