SOUTH DAKOTA STATE UNIVERSITY

Bachelor of Science
Major: Agricultural and Biosystems Engineering
2023-2024 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
ABE 101	Introduction to Agricultural and Biosystems Engineering		1	F	
BIOL 103	Biology Survey II		2		
BIOL 103L	Biology Survey II Lab	c. BIOL 103	1		
GE 101	Introduction to Engineering and Technical Professions		1		
MATH 123	Calculus I (SGR #5)	p. Placement or MATH 115, 120	4		
SGR #2	Oral Communication (SGR #2)		3		
SGR #3	Social Sciences (SGR #3)	ECON 201 recommended	3		
		Total Credit Hours	15		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 132	Engineering Tools for ABE		1	S	
CHEM 112	General Chemistry I	p. MATH 114 or higher	3		
CHEM 112L	General Chemistry I Lab	c. CHEM 112	1		
GE 121	Engineering Design Graphics I	c. Math 103 or higher or math placement	1		
MATH 125	Calculus II	p. MATH 123	4		
SGR #1	Written Composition (SGR #1)	p. Placement	3		
SGR #4	Arts and Humanities (SGR #4)		3		
		Total Credit Hours	16		

Second Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 343	Engineering Properties of Biological Materials		2	F	
ABE 343L	Engineering Properties of Biological Materials Lab		1		
EM 214	Statics	p. MATH 123	3		
GE 123	Computer Aided Drawing	p. GE 121	1		
MATH 225	Calculus III	p. MATH 125	4		
PHYS 207	Fundamentals of Physics I (SGR #6)	p. MATH 123	3		
PHYS 207L	Fundamentals of Physics I Lab (SGR #6)	c. PHYS 207	1		
		Total Credit Hours	15		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 222	Project Development for ABE		1	S	
EM 215	Dynamics	p. EM 214	3		
MATH 321	Differential Equations	p. MATH 125	3		
PHYS 209	Fundamentals of Physics II (SGR #6)	p. PHYS 207 or PHYS 211	4		
PHYS 209L	Fundamentals of Physics II Lab (SGR #6)	c. PHYS 209			
SGR #3	Social Sciences (SGR #3)		3		
SGR #4	Arts and Humanities (SGR #4)		3		

Information Subject to Change. This is not a contract.

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

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
		Total Credit Hours	17		

Third Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 314	Ag Power and Machines	p. EM 215	3	F	
ABE 314L	Ag Power and Machines Lab	c. ABE 314	1	F	
CSC 130 or CSC 150	Visual Basic Programming or Computer Science I		3		
EE 300	Basic Electrical Engineering I	p. MATH 125 and PHYS 209 or 213	3	F	
EE 300L	Basic Electrical Engineering I Lab	c. EE 300		F	
EM 321	Mechanics of Materials	p. EM 214	3		
ME 314	Thermodynamics	p. PHYS 211 and MATH 125	3	F	
		Total Credit Hours	16		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 444	Unit Operations of Biological Materials Processing	Senior standing or consent	3	S	
ABE 444L	Unit Operations of Biological Materials Processing Lab	c. ABE 444	1	S	
CHEM 108-108L	Organic and Biochemistry and Lab	p. CHEM 112	4		
CHEM 108L	Organic and Biochemistry Lab	c. CHEM 108	1		
ENGL 277	Technical Communications (SGR #1)	p. ENGL 101 and GE 101, AST 119, PS 119 or PHYS 119 or instructor consent	3		
TECH ELECTIVE*	Please choose electives from chosen emphasis (see comments)		3		
TECH ELECTIVE*	Please choose electives from chosen emphasis (see comments)		3		
		Total Credit Hours	18		

Summer

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 494 or ABE 496 or ABE 498	Internship or Field Experience or Undergraduate Research/Scholarship		2		
		Total Credit Hours	2		

Fourth Year

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 411	Design Project III	p. Senior Standing	2	F	
ABE 434	Natural Resources Engineering	c. EM 331	3	F	
ABE 434L	Natural Resources Engineering Lab	c. ABE 434	1		
ABE 463	Instrumentation for Agricultural and Biological Systems	p. EE 300	2	F	
ABE 462L	Instrumentation for Agricultural and Biological Systems Lab		1	F	
EM 331	Fluid Mechanics	p. EM 215, recommend fall section	3		
TECH ELECTIVE*	Please choose electives from chosen emphasis (see comments)		3		
		Total Credit Hours	15		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
ABE 324	Ag Structures and Indoor Environment	p. ME 314 and EM 331	3	S	
ABE 324L	Ag Structures and Indoor Environment Lab	c. ABE 324	1	S	
ABE 422	Design Project IV	p. Senior standing	2	S	
ABE 464	Monitoring and Controlling Agriculture & Biological Systems	p. ABE 463	1	S	
ABE 464L	Monitoring and Controlling Agriculture & Biological Systems Lab	C ABE 464	1	S	

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

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
STAT 281, STAT 381 or MATH 331	Introduction to Statistics, Intro to Probability & Statistics or Advanced Engineering Mathematics	p. MATH 103 or higher p. MATH 125 p. MATH 321	3		
TECH ELECTIVE*	Please choose electives from chosen emphasis (see comments)		3		
TECH ELECTIVE*	Please choose electives from chosen emphasis (see comments)		3		
		Total Credit Hours	17		

Comments/Notes

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

*Select Emphasis from Catalog – Food and Biomaterials, Power and Machinery, Structures and Environment, or Water and Natural Resources.