SOUTH DAKOTA STATE UNIVERSITY

Bachelor of Science
Major: Healthcare Systems Engineering
2026-2027 Sample 4-Year Plan
Total Degree Requirements: 130 credits

Student _____ **Student ID#** _____ **Student Phone #** _____

Advisor _____ **Minimum GPA** _____ **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, c. CHEM 112L	3		
CHEM 112L	General Chemistry I Lab (SGR #6)	c. CHEM 112	1		
GE 101	Introduction to Engineering and Technical Professions		1		
MATH 123	Calculus I (SGR #5)	p. MATH 115 or 120 or placement	4		
NUR 201 or VET 183	Medical Terminology or Veterinary Medical Terminology		1		
SGR #2	Oral Communication		3		
SGR #3	Social Sciences	One course must meet civics requirement	3		
		Total Credit Hours	16		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
BIOL 151	General Biology I		3		
BIOL 151L	General Biology I Lab		1		
EM 214	Statics	p. MATH 123	3		
MATH 125	Calculus II	p. MATH 123	4		
PHYS 207	Fundamentals of Physics I	p. MATH 123	3		
PHYS 207L	Fundamentals of Physics I Lab	c. PHYS 207	1		
SGR #1	Written Communication	p. Placement	3		
		Total Credit Hours	18		

SECOND YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
BIOL 153 or BIOL 235	General Biology II (SGR #6) or Introduction to Biotechnology (SGR #6)		3 or 2		
BIOL 153L or BIOL 235L	General Biology II Lab (SGR #6) or Introduction to Biotechnology Lab (SGR #6)		1		
CSC 150 or CSC 151	Computer Science I or Python Programming for Scientific Computing		3		
EM 215	Dynamics	p. EM 214	3		
GE 310	Thinking in Systems		1	F	
ME 212	Mechanical Engineering Design Technologies	p. MATH 123	2		
PHYS 209	Fundamentals of Physics II	p. PHYS 207	3		
PHYS 209L	Fundamentals of Physics II Lab	c. PHYS 209	1		
		Total Credit Hours	16 or 17		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
BIOL 221 or VET 223	Human Anatomy or Anatomy and Physiology of Domestic Animals		3	S	
BIOL 221L or VET 223L	Human Anatomy Lab or Anatomy and Physiology of Domestic Animals Lab	c. BIOL 221 c. VET 223L	1		
CSC 201	Introduction to Modern Computing	p. CSC 150	2		

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
EM 321	Mechanics of Materials	p. EM 214	3		
EM 331	Fluid Mechanics	p. EM 215	3		
SGR #4	Arts and Humanities		3		
		Total Credit Hours	15		

THIRD YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
BIOL 325 or Technical Elective	Physiology or Technical Elective if completed VET 223 instead of BIOL 221	p. BIOL 151 or BIOL 221 and CHEM 106 or CHEM 112	3		
BIOL 325L or Technical Elective	Physiology Lab or Technical Elective if completed VET 223L instead of BIOL 221L	c. BIOL 325	1		
EE 300	Basic Electrical Engineering I	p. MATH 125 and PHYS 209	2	F	
EE 300L	Basic Electrical Engineering I Lab	c. EE 300	1	F	
GE 385	Introduction to Systems Engineering and Management		3	F	
HIM 150	Introduction to Digital Health Informatics and Information Management	Online from DSU	3	F	
ME 314	Thermodynamics	p. PHYS 207 and MATH 125	3	F	
		Total Credit Hours	16		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
EE 302	Basic Electrical Engineering II	p. EE 300	2	S	
EE 302L	Basic Electrical Engineering II Lab	c. EE 302	1	S	
ENGL 201 or ENGL 277	Composition II (SGR #1) or Technical Writing in Engineering (SGR #1)	p. ENGL 101	3		
GE 401	Engineering Ethics and Economics		1		
HIM 225	Digital Health Information Systems	p. HIM 150; Online from DSU	2	S	
STAT 381	Introduction to Probability and Statistics	p. MATH 125	3		
Technical Elective			3		
		Total Credit Hours	15		

FOURTH YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
GE 478	Healthcare Systems Engineering Capstone I	Senior standing	3	F	
HSC 452	Interprofessional Issues in Health Care		3	F	
SGR #3	Social Sciences	One course must meet civics requirement	3		
SGR #4	Arts and Humanities		3		
Technical Electives			6		
		Total Credit Hours	18		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Semester	Grade
GE 479	Healthcare Systems Engineering Capstone II		3		
PHA 470	Introduction to Drug Discovery and Development		3		
Technical Electives			9 or 10		
		Total Credit Hours	15 or 16		

COMMENTS/NOTES

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

Technical Electives - Students must select 17-22 credits from the designated list of courses including at least 6 credits from AIE, CSC, EE, or ME prefix. Students will be able to complete coursework in different emphasis areas including AI/Data, Animal Industry, Pre-Med, and Sensors and Devices. See the catalog for the complete list.

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