SOUTH DAKOTA STATE UNIVERSITY

Bachelor of Science
Major: Dairy Manufacturing
Specialization: Microbiology
2025-2026 Sample 4-Year Plan
Total Degree Requirements: 120 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	Term	Grade
BIOL 101-101L or BIOL 151-151L	Biology Survey I and Lab (3 cr) or General Biology I and Lab (4 cr)	BIOL 151/L preferred	2,1 3,1	F/S F/S(I)	
CHEM 112-112L	General Chemistry I and Lab (SGR #6)	p. MATH 114 or higher	3,1	F/S	
DS 119	Opportunities in Dairy and Food Science		1	F	
DS 120	Survey of Dairy and Food Science Industries		1	F	
DS 130-130L	Introduction to Dairy Science and Lab		2,1	F/S	
MATH 114 or MATH 115	College Algebra (3 cr) (SGR #5) or Precalculus (5 cr) (SGR #5)	p. Placement p. MATH 114 or placement	3 - 5		
		Total Credit Hours	15- 18		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
BIOL 103-103L or BIOL 153-153L	Biology Survey II and Lab (3 cr) or General Biology II and Lab (4 cr)	BIOL 153/L preferred	2,1 3,1	F(I)/S F(I)/S	
CHEM 114-114L	General Chemistry II and Lab (SGR #6)	p. CHEM 112/L, MATH 114	3,1	F/S	
DS 496	Field Experience		3		
SGR #1	Written Communications (SGR #1)	p. Placement	3		
SGR #2	Oral Communication (SGR #2)		3		
		Total Credit Hours	16 - 17		

SECOND YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
BIOL 202-202L	Genetics and Molecular Biology and Lab	p. BIOL 103/L or 153/L and CHEM 114/L	3,1	F	
CHEM 326-326L	Organic Chemistry I and Lab	p. CHEM 114/L	3,1	F/S	
DS 202	Dairy Products Judging		1	F	
SGR #1	Written Communication (SGR #1)	p. ENGL 101	3		
SGR #4	Arts and Humanities (SGR #4)	See approved list	3		
		Total Credit Hours	15		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
BIOL 204-204L	Introduction to Cell Biology and Lab	p. BIOL 101/L, 151/L or 202/L; 1 semester of organic chemistry is recommended	3,1	S	
CHEM 328-328L	Organic Chemistry II and Lab	p. CHEM 326/L	3,1	F/S	
MICR 231-231L	General Microbiology and Lab	p. CHEM 112/L; MICR 233/L allowed (p. BIOL 151/L and CHEM 114/L)	3,1	F/S	
SGR #3	Social Sciences (SGR #3) – Civics Requirement	Select from the designated list of courses to fulfill civics requirement	3		
		Total Credit Hours	15		

Information Subject to Change. This is not a contract.

p. = Course Prerequisite, c. = Corequisites, I = Internet
Semester: F = Fall, S = Spring, SU = Summer

THIRD YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
ACCT 210	Principles of Accounting I		3	F/S/SU	
AST 443-443L	Food Processing and Engineering Fundamentals and Lab		2,1	F	
CHEM 464	Biochemistry I	p. CHEM 328/L	3	F	
DS 460-460L	Dairy Products Processing I and Lab	p. DS 130/L and MICR 231/L or MICR 233/L	4,1	F odd	
MICR 311-311L	Food Microbiology and Lab	p. MICR 231/L or MICR 233/L	2,2	F	
		Total Credit Hours	18		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
CHEM 466	Laboratory Methods – Biochemistry	p. CHEM 464	1	S	
DS 461-461L	Dairy Products Processing II and Lab	p. DS 130/L and MICR 231/L or MICR 233/L	4,1	S even	
ECON 201 or ECON 202	Principles of Microeconomics (SGR #3) or Principles of Macroeconomics (SGR #3)		3	F/S/SU F/S/SU	
MICR 310-310L	Environmental Microbiology and Lab	p. MICR 231/L or MICR 233/L	3,1		
General elective		If needed to maintain credits for scholarships	2		
		Total Credit Hours	15		

Summer

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
DS 494	Internship	Recommended not required; can also be taken summer after 2nd year	3		
		Total Credit Hours	3		

FOURTH YEAR

Fall

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
DS 400-400L	Dairy Chemistry and Analysis and Lab	p. DS 130/L, CHEM 106/L or CHEM 112/L, and CHEM 108/L	3,2	F	
DS 421-421L	Dairy Plant Management and Lab	p. Jr Standing	3,1	F even	
DS 490	Seminar	p. Senior Standing	1	F	
MICR 448	Molecular and Microbial Genetics	p. BIOL 204/L or BIOL 371	4	F	
		Total Credit Hours	14		

Spring

Prefix + Number	Course Title	Prerequisites/Comments	Credits	Term	Grade
DS 301-301L	Dairy Microbiology and Lab	p. MICR 231/L or MICR 233/L	2,2	S odd	
MICR 332-332L	Microbial Physiology and Lab	p. MICR 231/L or MICR 233/L	2,2	S	
SGR #4	Arts and Humanities (SGR #4)	See approved list	3		
STAT 281	Introduction to Statistics	p. MATH 114 or higher	3	F/S/SU	
		Total Credit Hours	14		

COMMENTS/NOTES

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

SGR 4 could be moved from Spring of 4th year to Spring of 3rd year to avoid the two credit general elective but this would result in less than full-time status Spring of the 4th year.

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Semester: F = Fall, S = Spring, SU = Summer