



**SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS**

Substantive Program Modification Form

UNIVERSITY:	SDSU
CURRENT PROGRAM DEGREE:	Bachelor of Science (B.S.)
CURRENT PROGRAM MAJOR/MINOR:	Microbiology
CURRENT SPECIALIZATION:	NA
CIP CODE:	26.0502
UNIVERSITY DEPARTMENT:	Biology & Microbiology
BANNER DEPARTMENT CODE:	SBIM
UNIVERSITY COLLEGE:	Natural Sciences
BANNER COLLEGE CODE:	3T

University Approval

To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.

Dennis D. Hedge

Vice President of Academic Affairs or
President of the University

4/3/2023

Date

1. This modification addresses a change in:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Total credits required within the discipline | <input checked="" type="checkbox"/> Total credits of supportive course work |
| <input checked="" type="checkbox"/> Total credits of elective course work | <input type="checkbox"/> Total credits required for program |
| <input type="checkbox"/> Program name | <input type="checkbox"/> Existing specialization |
| <input type="checkbox"/> CIP Code | <input type="checkbox"/> Other (explain below) |
| <input type="checkbox"/> Modification requiring Board of Regents approval | |

Must have prior approval from Executive Director or designee

2. Effective date of change: 2023-2024 Academic Year

3. Program Degree Level:

Associate ☐ Bachelor's ☒ Master's ☐ Doctoral ☐

4. Category:

Certificate ☐ Specialization ☐ Minor ☐ Major ☒

5. If a name change is proposed, the change will occur:

- ☐ On the effective date for all students
- ☐ On the effective date for students new to the program (enrolled students will graduate from existing program)

Proposed new name:

Reminder: Name changes may require updating related articulation agreements, site approvals, etc.

6. Is the program being modified associated with a current articulation agreement?

Yes ☐ No ☒

- a. If yes, will the articulation agreement need to be updated with the partner institution following the approve of the program change? Please explain:

7. Primary Aspects of the Modification:

<i>Existing Curriculum</i>				<i>Proposed Curriculum (Highlight Changes)</i>			
Pre	Num	Title	Cr Hrs	Pre	Num	Title	Cr Hrs
System General Education Requirement			32-34	System General Education Requirement			24-26
System General Education Requirement – Electives			12	System General Education Requirement – Electives			21
						SGR #1 Elective	3
						SGR #1 Elective	3
						SGR #2 Elective	3
		SGR #3 Elective	3			SGR #3 Elective	3
		SGR #3 Elective	3			SGR #3 Elective	3
		SGR #4 Elective	3			SGR #4 Elective	3
		SGR #4 Elective	3			SGR #4 Elective	3
System General Education Requirement – Required			20-22	System General Education Requirement – Required			3-5
ENGL	101	Composition I (SGR #1)	3	ENGL	101	Composition I (SGR #1)	3
ENGL	201	Composition II (SGR #1)	3	ENGL	201	Composition II (SGR #1)	3
CMST	101	Fundamentals of Speech (SGR #2)	3	CMST	101	Fundamentals of Speech (SGR #2)	3
MATH	115	Pre-Calculus or higher Consult advisor as some professional schools require calculus.	3-5	MATH	115	Pre-Calculus or higher Consult advisor as some professional schools require calculus.	3-5
BIOL	151	General Biology I (SGR #6)	4	BIOL	151	General Biology I (SGR #6) (Major Requirement)	--
BIOL	151L	General Biology I Lab (SGR #6)	0	BIOL	151L	General Biology I Lab (SGR #6) (Major Requirement)	--
BIOL	153	General Biology II (SGR #6)	4	BIOL	153	General Biology II (SGR #6) (Major Requirement)	--
BIOL	153L	General Biology II Lab (SGR #6)	0	BIOL	153L	General Biology II Lab (SGR #6) (Major Requirement)	--
Department Requirement			--	Department Requirement			--
		–25 semester credits must be upper division (300 and above), with the exception that MATH 125 and 225, Calculus II and III, may be counted as five credits toward the total. –Students must complete a minimum of 33 credits from the natural sciences. Refer to departments offering the degree for specific course listings.	--			–25 semester credits must be upper division (300 and above), with the exception that MATH 125 and 225, Calculus II and III, may be counted as five credits toward the total. –Students must complete a minimum of 33 credits from the natural sciences. Refer to departments offering the degree for specific course listings.	--
Major Requirements			74-76	Major Requirements			80-83
BIOL	119	First Year Seminar	2	BIOL	119	First Year Seminar	2
BIOL	151	General Biology I (SGR #6)	--	BIOL	151	General Biology I (SGR #6)	4
BIOL	151L	General Biology I Lab (SGR #6)	--	BIOL	151L	General Biology I Lab (SGR #6)	0
BIOL	153	General Biology II (SGR #6)	--	BIOL	153	General Biology II (SGR #6)	4
BIOL	153L	General Biology II Lab (SGR #6)	--	BIOL	153L	General Biology II Lab (SGR #6)	0
BIOL	202	Genetics and Organismal Biology	3	BIOL	202	Genetics and Organismal Biology	3
BIOL	202L	Genetics and Organismal Biology Lab	1	BIOL	202L	Genetics and Organismal Biology Lab	1
BIOL	204	Genetics and Cellular Biology	3	BIOL	204	Genetics and Cellular Biology	3
BIOL	204L	Genetics and Cellular Biology Lab	1	BIOL	204L	Genetics and Cellular Biology Lab	1
BIOL OR MICR	290	Seminar (1)	1	BIOL OR MICR	290	Seminar (1)	1
BIOL	383	Bioethics	4	BIOL	383	Bioethics	4

Existing Curriculum				Proposed Curriculum (Highlight Changes)			
Pre	Num	Title	Cr Hrs	Pre	Num	Title	Cr Hrs
MICR	233	Introductory Microbiology	4	MICR	233	Introductory Microbiology	3
MICR	233L	Introductory Microbiology Lab	0	MICR	233L	Introductory Microbiology Lab	1
MICR	332	Microbial Physiology	2	MICR	332	Microbial Physiology	2
MICR	332L	Microbial Physiology Lab	2	MICR	332L	Microbial Physiology Lab	2
MICR	439	Medical and Veterinary Immunology	3	MICR	439	Medical and Veterinary Immunology	3
MICR	448	Molecular and Microbial Genetics	4	MICR	448	Molecular and Microbial Genetics	4
CHEM	112	General Chemistry I	3	CHEM	112	General Chemistry I	3
CHEM	112L	General Chemistry I Lab	1	CHEM	112L	General Chemistry I Lab	1
CHEM	114	General Chemistry II	3	CHEM	114	General Chemistry II	3
CHEM	114L	General Chemistry II	1	CHEM	114L	General Chemistry II	1
CHEM	326	Organic Chemistry I	3	CHEM	326	Organic Chemistry I	3
CHEM	326L	Organic Chemistry I Lab	1	CHEM	326L	Organic Chemistry I Lab	1
CHEM	328	Organic Chemistry II	3	CHEM	328	Organic Chemistry II	3
CHEM	328L	Organic Chemistry II Lab	1	CHEM	328L	Organic Chemistry II Lab	1
CHEM	464	Biochemistry I	3	CHEM	464	Biochemistry I	3
CHEM	466	Laboratory Methods – Biochemistry	1	CHEM	466	Laboratory Methods – Biochemistry	1
PHYS		PHYS Electives	4	PHYS		PHYS electives	4
STAT	281	Introduction to Statistics	3	STAT	281	Introduction to Statistics	3
MICR	490	Seminar	2	MICR	490	Seminar	2
ENGL	379	Technical Communication (Section: Biology & Microbiology)	3	ENGL	379	Technical Communication (Section: Biology & Microbiology)	3
Applied and Environmental Microbiology			6-8	Applied and Environmental Microbiology			6-8
Select at least <u>two</u> courses from the following:				Select at least <u>two</u> courses from the following:			
BIOL	235	Introductory Biotechnology	3	BIOL	235	Introductory Biotechnology	3
BIOL	235L	Introductory Biotechnology Lab	0	BIOL	235L	Introductory Biotechnology Lab	0
MICR	310	Environmental Microbiology	4	MICR	310	Environmental Microbiology	3
MICR	310L	Environmental Microbiology	0	MICR	310L	Environmental Microbiology	1
MICR	311	Food Microbiology	4	MICR	311	Food Microbiology	2
MICR	311L	Food Microbiology Lab	0	MICR	311L	Food Microbiology Lab	2
MICR	421	Soil Microbiology	3	MICR	421	Soil Microbiology	2
MICR	421L	Soil Microbiology Lab	0	MICR	421L	Soil Microbiology Lab	1
MICR	450	Applied Microbiology & Biotechnology	3	MICR	450	Applied Microbiology & Biotechnology	3
Infectious Disease (at least 2 courses)			6	Infectious Disease (at least 2 courses)			6
Select at least <u>two</u> courses from the following:				Select at least <u>two</u> courses from the following:			
MICR	424	Medical & Veterinary Virology	3	MICR	424	Medical & Veterinary Virology	3
MICR	433	Medical Microbiology	3	MICR	433	Medical Microbiology	3
MICR	440L	Infectious Disease Lab	3	MICR	440L	Infectious Disease Lab	3
				Select from the following			3-4
				BIOL	235	Introductory Biotechnology	3
				BIOL	235L	Introductory Biotechnology Lab	0
				MICR	310	Environmental Microbiology	3
				MICR	310L	Environmental Microbiology	1
				MICR	311	Food Microbiology	2
				MICR	311L	Food Microbiology Lab	2
				MICR	421	Soil Microbiology	2
				MICR	421L	Soil Microbiology Lab	1
				MICR	424	Medical & Veterinary Virology	3
				MICR	433	Medical Microbiology	3
				MICR	440L	Infectious Disease Lab	3
				MICR	450	Applied Microbiology & Biotechnology	3
				MICR	494	Internship (max of 3 credits)	3

<i>Existing Curriculum</i>				<i>Proposed Curriculum (Highlight Changes)</i>			
Pre	Num	Title	Cr Hrs	Pre	Num	Title	Cr Hrs
				or BIOL			
				MICR or BIOL	498	Research (max of 3 credits)	3
Electives			10-14	Electives			11-16
Summary of Credits				Microbiology (B.S.)			
System General Education Requirement			32-34	System General Education Requirement			24-26
Department Requirements			--	Department Requirements			--
Major Requirements			74-76	Major Requirements			80-83
Electives			10-14	Electives			11-16
Total number of hours required for major			74-76	Total number of hours required for major			83-88
Total number of hours required for degree			120	Total number of hours required for degree			120

8. Explanation of the Change:

The Department of Biology and Microbiology has identified the following changes to the Microbiology major:

- Removed a specific course selection from SGR #1 and SGR #2 to allow students more flexibility in meeting their System General Education requirements.
- Removed BIOL 490 Seminar (2 cr.) & ENGL 379 Technical Communication (Capstone) (3 cr.) and replaced with 1 additional upper division elective from the listed courses. Through advising students will be strongly encouraged to engage in research and internship (BIOL 498 & BIOL 494) to gain research, hands on experiences, and science communication skills.
- Removed the department requirements to complete 25 upper division credits with the exception that five credits of MATH 125 and MATH 225 may be counted toward that total and that students were required to complete a minimum of 33 natural sciences courses. This language is redundant to current program requirements and SDSU and BOR graduation policy requirements. The requirements were carried over when the department transitioned from the College of Agriculture and Biological Sciences to the College of Natural Sciences.