SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

Substantive Program Modification Program

UNIVERSITY:	**SDSU**
CURRENT PROGRAM TITLE:	**Biotechnology (B.S.) [S.BS.BTC]**
CIP CODE:	**26.1201**
UNIVERSITY DEPARTMENT:	**Biology & Microbiology**
UNIVERSITY DIVISION:	**Natural Sciences**

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

5/8/18 — Date

1. This modification addresses a change in:

- ☐ Total credits required within the discipline
- ☐ Total credits of elective course work
- ☐ Program name
- ☐ CIP Code
- ☐ Total credits of supportive course work
- ☐ Total credits required for program
- ☐ Existing specialization
- ☒ Other: Restructure of College and Department Requirements

2. Effective date of change: 2018-2019 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: _____

6. Primary Aspects of the Modification:

Existing Curriculum				*Proposed Curriculum (Highlight Changes)*			
Pref	Num	Title	Cr Hrs	Pref	Num	Title	Cr Hrs
System General Education Requirement			**34**	**System General Education Requirement**			**34**
SGR Goal #1 Written Communication:			6	SGR 1 Written Communication:			6
ENGL 101 English Composition I (3)				ENGL 101 English Composition I			
ENGL 201 English Composition II (3)				ENGL 201 English Composition II			
SGR 2 Oral Communication:			3	SGR 2 Oral Communication:			3
SPCM 101 Fundamentals of Speech				SPCM 101 Fundamentals of Speech			
SGR 3 Social Sciences/Diversity			6	SGR 3 Social Sciences/Diversity			6
SGR 4 Arts and Humanities/Diversity			6	SGR 4 Arts and Humanities/Diversity			6
SGR 5 Mathematics:			5	SGR 5 Mathematics:			5
MATH 121-121L Survey of Calculus & Lab (5)				MATH 121-121L Survey of Calculus & Lab (5)			
or MATH 123-123L Calculus I & Lab(5)				or MATH 123-123L Calculus I & Lab(5)			

Existing Curriculum				*Proposed Curriculum (Highlight Changes)*			
SGR 6 Natural Sciences: BIOL 151-151L General Biology I & Lab (4) BIOL 153-153L General Biology II & Lab (4)			8	SGR 6 Natural Sciences: BIOL 151-151L General Biology I & Lab (4) BIOL 153-153L General Biology II & Lab (4)			8
ABS College Requirements – BS in Biological Sciences			**--**	**Department Requirements**			**--**
– 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 who wish to complete a Bachelor of Science in Biological Sciences 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**	**Major Requirements**			**74**
ABS	205	Biotechnology in Agriculture and Medicine	2	ABS	205	Biotechnology in Agriculture and Medicine	2
BIOL	119	First Year Seminar	2	BIOL	119	First Year Seminar	2
BIOL	202-202L	Genetics and Organismal Biology & Lab	4	BIOL	202-202L	Genetics and Organismal Biology & Lab	4
BIOL	204-204L	Genetics and Cellular Biology & Lab	4	BIOL	204-204L	Genetics and Cellular Biology & Lab	4
BIOL	383	Bioethics	4	BIOL	383	Bioethics	4
CHEM	112 -112L	General Chemistry I & Lab	4	CHEM	112 -112L	General Chemistry I & Lab	4
CHEM	114 -142L	General Chemistry II & Lab	4	CHEM	114 -142L	General Chemistry II & Lab	4
CHEM	326 -326L	Organic Chemistry I & Lab	4	CHEM	326 -326L	Organic Chemistry I & Lab	4
CHEM	328 -328L	Organic Chemistry II & Lab	4	CHEM	328 -328L	Organic Chemistry II & Lab	4
CHEM	464	Biochemistry I	3	CHEM	464	Biochemistry I	3
CHEM	466	Laboratory Methods – Biochemistry	1	CHEM	466	Laboratory Methods – Biochemistry	1
ENGL	379	Technical Communication	3	ENGL	379	Technical Communication (*Section: Biology & Microbiology*)	3
MICR	233-233L	Introductory Microbiology & Lab	4	MICR	233-233L	Introductory Microbiology & Lab	4
MICR	448	Molecular and Microbial Genetics	4	MICR	448	Molecular and Microbial Genetics	4
MICR	450	Applied Microbiology and Biotechnology	3	MICR	450	Applied Microbiology and Biotechnology	3
MICR	438L	Techniques in Molecular Biology Laboratory	2	MICR	438L	Techniques in Molecular Biology Laboratory	2
PHYS	111-111L	Introduction to Physics I & Lab	4	PHYS	111-111L	Introduction to Physics I & Lab	4
PHYS	113-113L	Introduction to Physics II & Lab	4	PHYS	113-113L	Introduction to Physics II & Lab	4
STAT	281	Introduction to Statistics	3	STAT	281	Introduction to Statistics	3
STAT	435	Applied Bioinformatics	3	STAT	435	Applied Bioinformatics	3
Advanced Fundamentals Requirement			**3**	**Advanced Fundamentals Requirement**			**3**
Select at least 3 credits from the following:				Select at least 3 credits from the following:			
BIOL	483-483L	Developmental Biology & Lab	4	BIOL	483-483L	Developmental Biology & Lab	4
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	424	Medical & Veterinary Virology	3	MICR	424	Medical & Veterinary Virology	3
VET	223-223L	Anatomy & Physiology of Domestic Animals & Lab	4	VET	223-223L	Anatomy & Physiology of Domestic Animals & Lab	4
Applications Requirement			**3**	**Applications Requirement**			**3**
Select at least 3 credits from the following:				Select at least 3 credits from the following:			
ABE	343-343L	Engineering Properties of Biological Materials & Lab	3	ABE	343-343L	Engineering Properties of Biological Materials & Lab	3
AS	332	Livestock Breeding and Genetics	4	AS	332	Livestock Breeding and Genetics	4

Existing Curriculum				*Proposed Curriculum (Highlight Changes)*			
AS	333-333L	Livestock Reproduction & Lab	3	AS	333-333L	Livestock Reproduction & Lab	3
DS	301	Dairy Microbiology & Lab	4	DS	301	Dairy Microbiology & Lab	4
DS	312-312L	Dairy Cattle Breeding and Evaluation & Lab	3	DS	312-312L	Dairy Cattle Breeding and Evaluation & Lab	3
HO	312-312L	Plant Propagation & Lab	3	HO	312-312L	Plant Propagation & Lab	3
HO/PS	383-383L	Principles of Crop Improvement & Lab	3	HO/PS	383-383L	Principles of Crop Improvement & Lab	3
MICR	440L	Infectious Disease Lab	3	MICR	440L	Infectious Disease Lab	3
Capstone			**2**	**Capstone**			**2**
Students will complete at least 2 credits from the following courses. Prefixes may vary with approval by program coordinator.				Students will complete at least 2 credits from the following courses. Prefixes may vary with approval by program coordinator.			
BIOL/ MICR	494	Internship	1-2	BIOL/ MICR	494	Internship	1-2
BIOL/ MICR	498	Undergraduate Research-Scholarship	1-2	BIOL/ MICR	498	Undergraduate Research-Scholarship	1-2
Electives			**12**	**Electives**			**12**

Summary of Credits Biotechnology (B.S.)			
System General Education Requirement	**34**	**System General Education Requirement**	**34**
ABS College Requirements – BS in Biological Sciences	**--**	**Department Requirements**	**--**
Major Requirements	**74**	**Major Requirements**	**74**
Electives	**12**	**Electives**	**12**
Total number of hours required for major	74	Total number of hours required for major	74
Total number of hours required for degree	120	Total number of hours required for degree	120

7. Explanation of the Change:

The Department of Biology & Microbiology will move from the College of Agriculture & Biological Sciences to the College of Natural Sciences effective July 1, 2018. The College of Agriculture & Biological Sciences – Bachelor of Science in Biological Science requirements have been realigned as department requirements within the program.