



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

Substantive Program Modification Program

UNIVERSITY:	SDSU
CURRENT PROGRAM TITLE:	Biochemistry (B.S.) [S.BS.BCM]
CIP CODE:	26.0202
UNIVERSITY DEPARTMENT:	Chemistry & Biochemistry
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 5/8/18
 Vice President of Academic Affairs or Date
 President of the University

1. This modification addresses a change in:

- | | |
|---|---|
| <input type="checkbox"/> Total credits required within the discipline | <input type="checkbox"/> Total credits of supportive course work |
| <input 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 checked="" type="checkbox"/> 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.
		Systems General Education Requirements	33			Systems General Education Requirements	33
		SGR 1 – Written Communication	6			SGR 1 – Written Communication	6
		ENGL 101 Composition I (3)				ENGL 101 Composition I (3)	
		ENGL 201 Composition II (3)				ENGL 201 Composition II (3)	
		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 – Humanities and Arts/Diversity	6			SGR 4 – Humanities and Arts/Diversity	6
		SGR 5 – Mathematics	4			SGR 5 – Mathematics	4
		MATH 123 Calculus I				MATH 123 Calculus I	
		SGR 6 – Natural Sciences	8			SGR 6 – Natural Sciences	8
		CHEM 115-115L Atomic & Molecular Structure & Lab (3,1)				CHEM 115-115L Atomic & Molecular Structure & Lab (3,1)	

Existing Curriculum

Proposed Curriculum (**highlight changes**)

CHEM 127-127L Structure and Function of Organic Molecules & Lab (3,1)				CHEM 127-127L Structure and Function of Organic Molecules & Lab (3,1)							
A&S College Requirements <i>Additional required credits of coursework beyond SGRs, IGRs, Major, and Support Courses</i>				10+0		Department Requirements <i>Additional required credits of coursework beyond SGRs, Major, and Support Courses</i>				13+3	
Natural Sciences (10+) Satisfying coursework must include – at least two classes with laboratory components – at least two different prefixes <i>(MATH and STATS courses do not count toward the Science requirement.)</i> 6 credits of SGR #6 are counted toward this goal PHYS 211-211L University Physics I & Lab (4)				100		Natural Sciences (10+) Satisfying coursework must include – at least two classes with laboratory components – at least two different prefixes <i>(MATH and STATS courses do not count toward the Science requirement.)</i> 6 credits of SGR #6 are counted toward this goal PHYS 211-211L University Physics I & Lab (4)				100	
A&S	111	Introduction to Global Citizenship and Diversity		3	AHSS	111	Introduction to Global Citizenship and Diversity		3		
One declared minor outside of the major prefix OR a second major OR a teaching specialization. The minor may be a traditional minor within one department or it may be interdisciplinary involving more than one department. The minor can be in a different college. The minor must be declared no later than the student's third semester of enrollment.				-		One declared minor outside of the major prefix OR a second major OR a teaching specialization. The minor may be a traditional minor within one department or it may be interdisciplinary involving more than one department. The minor can be in a different college. The minor must be declared no later than the student's third semester of enrollment.				-	
Capstone course within major CHEM 498 Undergraduate Research/Scholarship				--		Capstone course within major CHEM 498 Undergraduate Research/Scholarship				--	
Upper Division Credits (300-400 level coursework inside and outside of the major)				33		Upper Division Credits (300-400 level coursework inside and outside of the major)				33	
Major Requirements				42		Major Requirements				42	
Major Core				24		Major Core				24	
CHEM	119	First Year Seminar		1	CHEM	119	First Year Seminar		1		
CHEM	229-229L	Transformations of Organic Molecules and Lab		4	CHEM	229-229L	Transformations of Organic Molecules and Lab		4		
CHEM	236	Equilibrium and Energetics of Molecular Systems		2	CHEM	236	Equilibrium and Energetics of Molecular Systems		2		
CHEM	237	Intermediate Laboratory Investigations		3	CHEM	237	Intermediate Laboratory Investigations		3		
CHEM	360	Chemistry of Biological Macromolecules		3	CHEM	360	Chemistry of Biological Macromolecules		3		
CHEM	361	Chemistry of Biological Macromolecules Laboratory		1	CHEM	361	Chemistry of Biological Macromolecules Laboratory		1		
CHEM	448-448L	Biophysical Chemistry & Lab		4	CHEM	448-448L	Biophysical Chemistry & Lab		4		
CHEM	465	Biochemistry II		3	CHEM	465	Biochemistry II		3		
CHEM	498	Undergraduate Research/Scholarship (Research Experience in Biochemistry)		3	CHEM	498	Undergraduate Research/Scholarship (Research Experience in Biochemistry)		3		
Major/Technical Electives				18		Major/Technical Electives				18	
<u>9 Credits Upper Division BIOL elective courses</u> Students should consult their academic advisor to select courses from the following list based on individual interest BIOL 325-325L Physiology and Lab (4) BIOL 371 Genetics (3) BIOL 373 Evolution (3) BIOL 466 Environmental Toxicology & Contaminants (3) BIOL 483-483L Developmental Biology and Lab (4) BOT 327-327L Plant Physiology and Lab (4) MICR 231-231L General Microbiology and Lab (4) MICR 332 Microbial Physiology (2) MICR 332L Microbial Physiology Lab (2) MICR 433 Medical Microbiology (3) MICR 448 Molecular and Microbial Genetics (4)				9		<u>9 Credits Upper Division BIOL elective courses</u> Students should consult their academic advisor to select courses from the following list based on individual interest BIOL 325-325L Physiology and Lab (4) BIOL 371 Genetics (3) BIOL 373 Evolution (3) BIOL 466 Environmental Toxicology & Contaminants (3) BIOL 483-483L Developmental Biology and Lab (4) BOT 327-327L Plant Physiology and Lab (4) MICR 231-231L General Microbiology and Lab (4) MICR 332 Microbial Physiology (2) MICR 332L Microbial Physiology Lab (2) MICR 433 Medical Microbiology (3) MICR 448 Molecular and Microbial Genetics (4)				9	

Existing Curriculum

Proposed Curriculum (highlight changes)

MICR 438L Techniques in Molecular Biology Laboratory (2)				MICR 438L Techniques in Molecular Biology Laboratory (2)			
<i>9 Credits Upper Division CHEM elective courses</i> Students should consult their academic advisor to select courses from the following list based on individual interests CHEM 329 Organic Chemistry III (2) CHEM 332-332L Analytical Chemistry and Lab (3,1) CHEM 345 Quantum Mechanics of Chemical Systems (2) CHEM 347 Chemical Kinetics (2) CHEM 432 Analytical Chemistry II (2) CHEM 433 Bioanalytical Chemistry (2) CHEM 452-452L Inorganic Chemistry and Lab (3,1) CHEM 482 Environmental Chemistry (COM) (3-4) CHEM 484 Chemical Toxicology (3)			9	<i>9 Credits Upper Division CHEM elective courses</i> Students should consult their academic advisor to select courses from the following list based on individual interests CHEM 329 Organic Chemistry III (2) CHEM 332-332L Analytical Chemistry and Lab (3,1) CHEM 345 Quantum Mechanics of Chemical Systems (2) CHEM 347 Chemical Kinetics (2) CHEM 432 Analytical Chemistry II (2) CHEM 433 Bioanalytical Chemistry (2) CHEM 452-452L Inorganic Chemistry and Lab (3,1) CHEM 482 Environmental Chemistry (COM) (3-4) CHEM 484 Chemical Toxicology (3)			9
Support Courses			15	Support Courses			15
MATH	125	Calculus II	4	MATH	125	Calculus II	4
PHYS	211-211L	University Physics I	4	PHYS	211-211L	University Physics I	4
PHYS	213-213L	University Physics II	4	PHYS	213-213L	University Physics II	4
STAT	381	Statistics	3	STAT	381	Statistics	3
Electives (Taken as needed to complete any additional degree requirements)			27	Electives (Taken as needed to complete any additional degree requirements)			27
Summary of Credits Biochemistry (B.S.)							
System General Education Requirements			33	System General Education Requirements			33
A&S College Requirements <i>Additional required credits of coursework beyond SGRs, Major, and Support Courses</i>			13+ 3+	A&S College Requirements <i>Additional required credits of coursework beyond SGRs, Major, and Support Courses</i>			13+ 3+
				Department Requirements <i>Additional required credits of coursework beyond SGRs, Major, and Support Courses</i>			13+ 3+
Majors Requirements			42	Majors Requirements			42
Support Courses			15	Support Courses			15
Electives (Taken as needed to complete any additional degree requirements)			27	Electives (Taken as needed to complete any additional degree requirements)			27
Total number of hours required for major			57	Total number of hours required for major			57
Total number of hours required for degree			120	Total number of hours required for degree			120

7. Explanation of the Change:

The Department of Chemistry & Biochemistry will move from the College of Arts & Sciences to the College of Natural Sciences effective July 1, 2018. The College of Arts & Sciences requirements have been realigned as department requirements within the program. Additional changes include:

- The College of Arts & Sciences has been restructured and renamed the College of Arts, Humanities, and Social Sciences. The A&S prefix has also been replaced with the AHSS prefix to make it easier to identify the coursework.