SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

Substantive Program Modification Form

UNIVERSITY:	**SDSU**
CURRENT PROGRAM TITLE:	**ACS Certified Chemistry (B.S.)**
CIP CODE:	**40.0501**
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 — Vice President of Academic Affairs or President of the University

5/1/2019 — Date

1. This modification addresses a change in:

☒ Total credits required within the discipline ☐ Total credits of supportive course work
☒ Total credits of elective course work ☐ Total credits required for program
☐ Program name ☐ Existing specialization
☐ CIP Code ☐ Other (explain below)

2. Effective date of change: 2019-2020 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	112-112L	General Chemistry I & Lab (3,1)	
CHEM	127-127L	Structure and Function of Organic Molecules & Lab (3,1)		CHEM	114-114L	General Chemistry II & Lab (3,1)	
				~~CHEM~~	~~115-115L~~	~~Atomic & Molecular Structure & Lab (3,1)~~	

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
				~~CHEM 127-127L Structure and Function of Organic Molecules & Lab (3,1)~~			
Department Requirements *Additional required credits of coursework beyond SGRs, Major, and Support Courses*			**13+ 3**	**Department Requirements** *Additional required credits of coursework beyond SGRs, Major, and Support Courses*			**13+ 3**
Natural Sciences (10+) Satisfying coursework must include – at least two classes with laboratory components – at least two different prefixes *(MATH and STATS courses do not count toward the Science requirement.)* 6 credits of SGR #6 are counted toward this goal PHYS 211-211L University Physics I & Lab (4)			10 0	Natural Sciences (10+) Satisfying coursework must include – at least two classes with laboratory components – at least two different prefixes *(MATH and STATS courses do not count toward the Science requirement.)* 6 credits of SGR #6 are counted toward this goal PHYS 211-211L University Physics I & Lab (4)			10 0
AHSS	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			**37**	**Major Requirements**			**39**
Major Core			28	Major Core			30
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	326-326L	Organic Chemistry I & Lab	4
				CHEM	328-328L	Organic Chemistry II & Lab	4
CHEM	332-332L	Analytical Chemistry l & Lab	4	CHEM	332-332L	Analytical Chemistry l & Lab	4
CHEM	343-343L	Fundamentals of Thermodynamics & Lab	2, 1	CHEM	343-343L	Fundamentals of Thermodynamics & Lab	2, 1
CHEM	360	Chemistry of Biological Macromolecules	3	CHEM	360	Chemistry of Biological Macromolecules	3
CHEM	361	Chemistry of Biological Molecules Lab	1	CHEM	361	Chemistry of Biological Molecules Lab	1
CHEM	452-452L	Inorganic Chemistry & Lab	4	CHEM	452-452L	Inorganic Chemistry & Lab	4
CHEM	498	Undergraduate Research/Scholarship (Research Experience)	3	CHEM	498	Undergraduate Research/Scholarship (Research Experience)	3
Advanced Chemistry Electives			9	Advanced Chemistry Electives			9
		Select 9 credits from the list below.				Select 9 credits from the list below.	
CHEM	329	Intermediate Organic Chemistry	2	CHEM	329	Intermediate Organic Chemistry	2
CHEM	329L	Intermediate Organic Chemistry Lab	2	CHEM	329L	Intermediate Organic Chemistry Lab	2
CHEM	345	Quantum Mechanics	3	CHEM	345	Quantum Mechanics	3
CHEM	347	Chemical Kinetics	2	CHEM	347	Chemical Kinetics	2
CHEM	432	Analytical Chemistry II	2	CHEM	432	Analytical Chemistry II	2
CHEM	433	Bioanalytical Chemistry	3	CHEM	433	Bioanalytical Chemistry	3
CHEM	448-448L	Biophysical Chemistry & Lab	4	CHEM	448-448L	Biophysical Chemistry & Lab	4
CHEM	465	Biochemistry II	3	CHEM	465	Biochemistry II	3

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
CHEM	482	Environmental Chemistry	3	CHEM	482	Environmental Chemistry	3
CHEM	484	Chemical Toxicology	3	CHEM	484	Chemical Toxicology	3
Support Courses			**16**	**Support Courses**			**16**
MATH	125	Calculus II	4	MATH	125	Calculus II	4
MATH	225	Calculus III	4	MATH	225	Calculus III	4
PHYS	211-211L	University Physics I and Lab	4	PHYS	211-211L	University Physics I and Lab	4
PHYS	213-213L	University Physics II and Lab	4	PHYS	213-213L	University Physics II and Lab	4
Electives *(Taken as needed to complete any additional degree requirements)*			**31**	**Electives** *(Taken as needed to complete any additional degree requirements)*			**29**
Summary of Credits ACS Certified Chemistry (B.S.)							
System General Education Requirements			**33**	**System General Education Requirements**			**33**
Department Requirements *Additional required credits of coursework beyond SGRs, Major, and Support Courses*			**13+ 3+**	**Department Requirements** *Additional required credits of coursework beyond SGRs, Major, and Support Courses*			**13+ 3+**
Majors Requirements			**37**	**Majors Requirements**			**39**
Support Courses			**16**	**Support Courses**			**16**
Electives *(Taken as needed to complete any additional degree requirements)*			**31**	**Electives** *(Taken as needed to complete any additional degree requirements)*			**29**
Total number of hours required for major			53	Total number of hours required for major			55
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 and Biochemistry has decided to go back to a more traditional way of offering the general chemistry and organic chemistry sequences. This more closely aligns with other programs nationwide, as well as simplifying the program for students and all support staff who are trying to help students. The proposed changes involve existing courses and will not require any additional instructional support. The current second semester of general chemistry CHEM 236 Equilibrium and Energetics of Molecular Systems (3 cr.) will be replaced by CHEM 114-114L General Chemistry II & Lab (3, 1).