



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

Substantive Program Modification Form

UNIVERSITY:	SDSU
CURRENT PROGRAM TITLE:	Chemistry Education (B.S.)
CIP CODE:	13.1323
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

4/27/2019

Vice President of Academic Affairs or
President of the University

Date

1. This modification addresses a change in:

- | | |
|--|--|
| <input checked="" type="checkbox"/> Total credits required within the discipline | <input 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) |

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				Systems General Education Requirements			
	33				33		
	6	SGR 1 – Written Communication ENGL 101 Composition I (3) ENGL 201 Composition II (3)			6	SGR 1 – Written Communication ENGL 101 Composition I (3) ENGL 201 Composition II (3)	
	3	SGR 2 – Oral Communication SPCM 101 Fundamentals of Speech			3	SGR 2 – Oral Communication SPCM 101 Fundamentals of Speech	
	6	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	
	4	SGR 5 – Mathematics MATH 123 Calculus I			4	SGR 5 – Mathematics MATH 123 Calculus I	
	8	SGR 6 – Natural Sciences CHEM 115-115L Atomic & Molecular Structure & Lab (3,1)			8	SGR 6 – Natural Sciences CHEM 112-112L General Chemistry I & Lab (3,1)	

Existing Curriculum

Proposed Curriculum (*highlight changes*)

Prof.	Num.	Title	Cr. Hrs.	Prof.	Num.	Title	Cr. Hrs.
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)	
						CHEM 127-127L Structure and Function of Organic Molecules & Lab (3,1)	
Department Requirements			13+	Department Requirements			13+
<i>Additional required credits of coursework beyond SGRs, Major, and Support Courses</i>			3	<i>Additional required credits of coursework beyond SGRs, Major, and Support Courses</i>			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>) This requirement is met by the required courses.			10 0	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>) This requirement is met by the required courses.			10 0
AIS	211	South Dakota American Indian Culture and Education	3	AIS	211	South Dakota American Indian Culture and Education	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 SEED 456 Capstone/Action Research			--	Capstone course within major SEED 456 Capstone/Action Research			--
Upper Division Credits (300-400 level coursework inside and outside of the major) This requirement is met by the required courses.			33	Upper Division Credits (300-400 level coursework inside and outside of the major) This requirement is met by the required courses.			33
Major Requirements			81	Major Requirements			83
BIOL	151-151L	General Biology I & Lab	4	BIOL	151-151L	General Biology I & Lab	4
BIOL	153-153L	General Biology II & Lab	4	BIOL	153-153L	General Biology II & Lab	4
CHEM	119	First Year Seminar	1	CHEM	119	First Year Seminar	1
CHEM	229-229L	Transformations of Organic Molecules & Lab	3, 1	CHEM	229-229L	Transformations of Organic Molecules & Lab	3, 1
CHEM	236	Equilibrium and Energy of Molecular Systems	2	CHEM	236	Equilibrium and Energy 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 I & Lab	3, 1	CHEM	332-332L	Analytical Chemistry I & Lab	3, 1
CHEM	343	Fundamentals of Chemical Thermodynamics	2	CHEM	343	Fundamentals of Chemical Thermodynamics	2
CHEM	452-452L	Inorganic Chemistry & Lab	3, 1	CHEM	452-452L	Inorganic Chemistry & Lab	3, 1
CHEM	464	Biochemistry I	3	CHEM	464	Biochemistry I	3
CHEM	466	Laboratory Methods - Biochemistry	1	CHEM	466	Laboratory Methods - Biochemistry	1
CHEM OR CHEM	482	Environmental Chemistry (3)	3	CHEM OR CHEM	482	Environmental Chemistry (3)	3
CHEM	484	Chemical Toxicology (3)		CHEM	484	Chemical Toxicology (3)	
CHEM	237	Intermediate Laboratory Investigations	3	CHEM	237	Intermediate Laboratory Investigations	3
EDFN	101	Exploration of Teaching and Learning	1	EDFN	101	Exploration of Teaching and Learning	1
EDFN	351	Teaching and Learning I	1	EDFN	351	Teaching and Learning I	1
EDFN	352-352L	Teaching and Learning II & Lab	3, 2	EDFN	352-352L	Teaching and Learning II & Lab	3, 2
EDFN	453-453L	Teaching and Learning III & Lab	5, 2	EDFN	453-453L	Teaching and Learning III & Lab	5, 2
EDFN	454	Teaching and Learning IV	11	EDFN	454	Teaching and Learning IV	11

Existing Curriculum

Proposed Curriculum (*highlight changes*)

Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.
EDFN	475	Human Relations	3	EDFN	475	Human Relations	3
MATH	125	Calculus II	4	MATH	125	Calculus II	4
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
SEED	413	7-12 Science Methods	3	SEED	413	7-12 Science Methods	3
SEED	450	Reading and Content Literacy	2	SEED	450	Reading and Content Literacy	2
SEED	456	Capstone/Action Research	1	SEED	456	Capstone/Action Research	1
Electives (<i>Taken as needed to complete any additional degree requirements</i>)			3	Electives (<i>Taken as needed to complete any additional degree requirements</i>)			1
Summary of Credits Chemistry Education (B.S.)							
System General Education Requirements			32	System General Education Requirements			33
Department 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			81	Majors Requirements			83
Electives (<i>Taken as needed to complete any additional degree requirements</i>)			3	Electives (<i>Taken as needed to complete any additional degree requirements</i>)			1
Total number of hours required for major			81	Total number of hours required for major			83
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).