SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

Substantive Program Modification Program

Use this form to request minor changes in existing programs (majors, minors, certificates, or specializations).

UNIVERSITY:	DSU
CURRENT PROGRAM TITLE:	**Bachelor of Science in Physical Science**
CIP CODE:	
UNIVERSITY DEPARTMENT:	**College of Arts and Sciences**
UNIVERSITY DIVISION:	**College of Arts and 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.

<table>
<tr><td></td><td>Click here to enter a date.</td></tr>
<tr><td>Vice President of Academic Affairs or President of the University</td><td>Date</td></tr>
</table>

1. **This modification addresses a change in (*place an "X" in the appropriate box*):**

   ☒ 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: 5/15/2017**

3. **Program Degree Level (*place an "X" in the appropriate box*):**

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

4. **Category (*place an "X" in the appropriate box*):**

   Certificate ☐   Specialization ☐   Minor ☐   Major ☒

5. **If a name change is proposed, the change will occur (*place an "X" in the appropriate box*):**

☐ 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. Primary Aspects of the Modification (*add lines or adjust cell size as needed*):

Existing Curriculum

Pref.	Num.	Title	Cr. Hrs.
General Education Requirement*			**30**
*Majors must take CHEM 112, Math 123 and PHYS 211 as part of the System-wide General Education Requirements			
~~System-Wide Institutional Graduation Requirement~~			~~11~~
~~Majors must take CIS 150 as part of the Institutional Graduation Requirement.~~			
Required Courses			**30-31**
CHEM	114	General Chemistry II	4
ENGL	379	Technical communication	3
MATH	125	Calculus II	4
PHYS	213	University Physics II	4
Select one course from the following			3-4
MATH	225	Calculus III	
MATH	281	Introduction to Statistics	
MATH	315	Linear Algebra	
MATH	316	Discrete Mathematics	
MATH	318	Ad. Discrete Mathematics	
MATH	321	Differential Equations	
MATH	413	Abstract Algebra	
Select 12 Credits from the following			12
CHEM	492	Topics	
CHEM	498	Undergrad Research/Scholarship	
PHSI	492	Topics	
PHSI	498	Undergrad Research/Scholarship	
PHYS	492	Topics	
PHYS	498	Undergrad Research/Scholarship	
Computer Science Component			**~~9~~**
~~CSC~~	~~250~~	~~Computer Science II~~	~~3~~
~~CSC~~	~~260~~	~~Object Oriented Design~~	~~3~~
~~CSC~~	~~300~~	~~Data Structures~~	~~3~~

Proposed Curriculum (<mark>highlight changes</mark>)

Pref.	Num.	Title	Cr. Hrs.
General Education Requirement*			**30**
*Majors must take CHEM 112, MATH 123 and PHYS 211 as part of the System-wide General Education Requirements			
Required Courses			**30-31**
CHEM	114	General Chemistry II	4
ENGL	379	Technical communication	3
MATH	125	Calculus II	4
PHYS	213	University Physics II	4
Select one course from the following			3-4
MATH	225	Calculus III	
MATH	281	Introduction to Statistics	
MATH	315	Linear Algebra	
MATH	316	Discrete Mathematics	
MATH	318	Ad. Discrete Mathematics	
MATH	321	Differential Equations	
MATH	413	Abstract Algebra	
Select 12 Credits from the following			12
CHEM	492	Topics	
CHEM	498	Undergrad Research/Scholarship	
PHSI	492	Topics	
PHSI	498	Undergrad Research/Scholarship	
PHYS	492	Topics	
PHYS	498	Undergrad Research/Scholarship	
Computer Science Component			**15**
CSC	**105**	**Introduction to Computers**	**3**
CSC	**150**	**Computer Science I**	**3**
Select 9 credits of computer technology courses at 200 level or above with CSC, SCTC, or MATH prefixes			**9**

Select ~~six~~ courses from the following				~~18-24~~		Select **seven** courses from the following				**21-28**
Some of the courses below are offered by Black Hills State University						Some of the courses below are offered by Black Hills State University				
CHEM	326	Organic Chemistry I		4		CHEM	326	Organic Chemistry I		4
CHEM	328	Organic Chemistry II		4		CHEM	328	Organic Chemistry II		4
CHEM	332	Analytical Chemistry		4		CHEM	332	Analytical Chemistry		4
CHEM	452	Inorganic Chemistry		3		CHEM	452	Inorganic Chemistry		3
CHEM	460	Biochemistry		3		CHEM	460	Biochemistry		3
GEOL	201	Physical Geology		4		GEOL	201	Physical Geology		4
GEOL	310	Volcanology		3		GEOL	310	Volcanology		3
GEOL	340	Mineralogy and Petrology		3		GEOL	340	Mineralogy and Petrology		3
GEOL	360	Geochemistry		3		GEOL	360	Geochemistry		3
GEOL	370	Hydrogeology		3		GEOL	370	Hydrogeology		3
PHYS	331	Intro to Modern Physics		3		PHYS	331	Intro to Modern Physics		3
PHYS	341	Thermodynamics		2-3		PHYS	341	Thermodynamics		2-3
PHYS	343	Statistical Physics		2-4		PHYS	343	Statistical Physics		2-4
PHYS	361	Optics		3-4		PHYS	361	Optics		3-4
PHYS	421	Electromagnetism		4		PHYS	421	Electromagnetism		4
PHYS	424	Digital Electronics		3-4		PHYS	424	Digital Electronics		3-4
PHYS	433	Nuclear and Elementary Particle Physics		3		PHYS	433	Nuclear and Elementary Particle Physics		3
PHYS	451	Classical Mechanics		4		PHYS	451	Classical Mechanics		4
PHYS	471	Quantum Mechanics		3-4		PHYS	471	Quantum Mechanics		3-4
PHYS	481	Mathematical Physics		3		PHYS	481	Mathematical Physics		3
Electives				**15-22***		**Electives**				**16-24***
*Three of these electives will have been met upon completion of CHEM 112, MATH 123, and PHYS 211 as part of the system general Education requirement.						*Three of these electives will have been met upon completion of CHEM 112, MATH 123, and PHYS 211 as part of the system general Education requirement.				

Total number of hours required for major, minor, or specialization	56-64		Total number of hours required for major, minor, or specialization	66-74
Total number of hours required for degree	120		Total number of hours required for degree	120

7. Explanation of the Change:

The Institutional Graduation Requirements are removed from the curriculum. CSC 105 and CSC 150 are retained and moved to the computer science component section. Another 3-4 credits from the removal of IGR is allocated to an additional course in the science electives section. Depending on the courses chosen for electives one or two credits is added to the free electives.

Because physical science majors are preparing for many different types of careers, the computer courses that would benefit them the most are also varied. For that reason, the upper level computer courses are changed from specific requirements to a wider range of courses selected by the student.