



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

**Substantive Program Modification Form**

<b>UNIVERSITY:</b>	SDSU
<b>CURRENT PROGRAM TITLE:</b>	Pharmaceutical Sciences (B.S.) [S.BSPHS.PHS]
<b>CIP CODE:</b>	51.2001
<b>UNIVERSITY DEPARTMENT:</b>	Pharmacy & Allied Health Professions (SPAHP)
<b>UNIVERSITY DIVISION:</b>	Pharmacy & Allied Health Professions (SPAHP)

**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

1/25/2018

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 checked="" type="checkbox"/> Other: Revised Coursework    |

**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:**

\_\_\_\_\_  
*Reminder: Name changes may require updating related articulation agreements, site approvals, etc.*

**6. Primary Aspects of the Modification:**

*Existing Curriculum*

*Proposed Curriculum (highlight changes)*

Pref.	Num.	Title	Cr. Hrs.	Pref.	Num.	Title	Cr. Hrs.		
<b>System General Education Requirements</b>				<b>34</b>	<b>System General Education Requirements</b>				<b>34</b>
SGR 1 Written Communication:				6	SGR 1 Written Communication:				6
ENGL 101 English Communication I (3)					ENGL 101 English Communication I (3)				
ENGL 201 English Communication II (3)					ENGL 201 English Communication II (3)				
SGR 2 Oral Communication:				3	SGR 2 Oral Communication:				3
SPCM 101 Fundamentals of Speech (3)					SPCM 101 Fundamentals of Speech (3)				

## Existing Curriculum

## Proposed Curriculum (highlight changes)

SGR 3 Social Sciences: ECON 202 Principles of Macroeconomics (3) Student choice (3)				6	SGR 3 Social Sciences: <del>ECON 202 Principles of Macroeconomics (3)</del> ECON 201 Principles of Microeconomics (3) Student choice (3)				6		
SGR 4 Arts and Humanities				6	SGR 4 Arts and Humanities				6		
SGR 5 Mathematics: MATH 121-121L Survey of Calculus & Lab (5)				5	SGR 5 Mathematics: MATH 121-121L Survey of Calculus & Lab				5		
SGR 6 Natural Sciences: CHEM 112-112L General Chemistry I & Lab (4) CHEM 114-114L General Chemistry II & Lab (4)				8	SGR 6 Natural Sciences: CHEM 112-112L General Chemistry I & Lab (4) CHEM 114-114L General Chemistry II & Lab (4)				8		
<b>Major Requirements</b>				<b>95</b>	<b>Major Requirements</b>				<b>101</b>		
BIOL	151-151L	General Biology I & Lab	4	BIOL	151-151L	General Biology I & Lab	4	BIOL	151-151L	General Biology I & Lab	4
BIOL	221-221L	Human Anatomy & Lab	4	BIOL	221-221L	Human Anatomy & Lab	4	BIOL	221-221L	Human Anatomy & Lab	4
BIOL	325-325L	Physiology & Lab	4	BIOL	325-325L	Physiology & Lab	4	BIOL	325-325L	Physiology & Lab	4
CHEM	326-326L	Organic Chemistry I & 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	328-328L	Organic Chemistry II & Lab	4
MICR	231-231L	General Microbiology & Lab	4	MICR	231-231L	General Microbiology & Lab	4	MICR	231-231L	General Microbiology & Lab	4
PHA	119	Introduction to the Pharmacy Profession	1	PHA	119	Introduction to the Pharmacy Profession	1	PHA	119	Introduction to the Pharmacy Profession	1
PHA	219	Fundamentals of Health Care Practice	1	PHA	219	Fundamentals of Health Care Practice I	1	PHA	219	Fundamentals of Health Care Practice I	1
				PHA	313	Pharmacy Calculations	1	PHA	313	Pharmacy Calculations	1
PHA	320	Introduction to Pathophysiology	3	PHA	<del>320</del>	Introduction to Pathophysiology	<del>3</del>	PHA	<del>320</del>	Introduction to Pathophysiology	<del>3</del>
PHA	323	Pharmaceutical Biochemistry	4	PHA	323	Pharmaceutical Biochemistry	4	PHA	323	Pharmaceutical Biochemistry	4
PHA	324	Biomedical Science I	4	PHA	324	Biomedical Science I	4	PHA	324	Biomedical Science I	4
				PHA	326L	Integrated Pharmacy Laboratory I	1	PHA	326L	Integrated Pharmacy Laboratory I	1
PHA	331	Pharmaceutics I	3	PHA	331	Pharmaceutics I	4	PHA	331	Pharmaceutics I	4
PHA	332-332L	Pharmaceutics II & Lab	4	PHA	332- <del>332L</del>	Pharmaceutics II & Lab	2	PHA	332- <del>332L</del>	Pharmaceutics II & Lab	2
PHA	340-340L	Medicinal Chemistry I & Lab	4	PHA	340- <del>340L</del>	Medicinal Chemistry I & Lab	3	PHA	340- <del>340L</del>	Medicinal Chemistry I & Lab	3
PHA	341-341L	Medicinal Chemistry II & Lab	4	PHA	341- <del>341L</del>	Medicinal Chemistry II & Lab	3	PHA	341- <del>341L</del>	Medicinal Chemistry II & Lab	3
				PHA	342	Self Care Pharmacotherapeutics I	1	PHA	342	Self Care Pharmacotherapeutics I	1
				PHA	352	Pathophysiology, Pharmacology & Toxicology I	3	PHA	352	Pathophysiology, Pharmacology & Toxicology I	3
				PHA	353	Pathophysiology, Pharmacology & Toxicology II	3	PHA	353	Pathophysiology, Pharmacology & Toxicology II	3
				PHA	363L	Pharmacy Skills Laboratory I	1	PHA	363L	Pharmacy Skills Laboratory I	1
				PHA	364L	Pharmacy Skills Laboratory II	2	PHA	364L	Pharmacy Skills Laboratory II	2
PHA	367-367L	Pharmacy Practice I & Lab	2	PHA	367- <del>367L</del>	Pharmacy Practice I: Introduction to Pharmacy Practice & Lab	1	PHA	367- <del>367L</del>	Pharmacy Practice I: Introduction to Pharmacy Practice & Lab	1
PHA	368	Pharmacy Practice II & Lab	3	PHA	368- <del>368L</del>	Pharmacy Practice II: Drug Information and Communication & Lab	2	PHA	368- <del>368L</del>	Pharmacy Practice II: Drug Information and Communication & Lab	2
PHA	410	Introductory Practice Experience I	3	PHA	410	Introductory Practice Experience I	3	PHA	410	Introductory Practice Experience I	3
PHA	415	Biopharmaceutics and Pharmacokinetics	4	PHA	415	Biopharmaceutics and Pharmacokinetics	4	PHA	415	Biopharmaceutics and Pharmacokinetics	4
				PHA	419	Fundamentals of Health Care Practice II	1	PHA	419	Fundamentals of Health Care Practice II	1
PHA	425	Biomedical Science II	3	PHA	425	Biomedical Science II	3	PHA	425	Biomedical Science II	3
				PHA	426	Integrated Pharmacy Laboratory II	1	PHA	426	Integrated Pharmacy Laboratory II	1
PHA	430	Pharmacy Practice Law	3	PHA	430	Pharmacy Practice Law	3	PHA	430	Pharmacy Practice Law	3
PHA	442	Pharmacology I	5	PHA	442	Pharmacology I	5	PHA	442	Pharmacology I	5
PHA	443	Pharmacology II	4	PHA	443	Pharmacology II	4	PHA	443	Pharmacology II	4
PHA	444	Toxicology	2	PHA	444	Toxicology	2	PHA	444	Toxicology	2
PHA	445	Pharmacotherapeutics I	2	PHA	445	Pharmacotherapeutics I	3	PHA	445	Pharmacotherapeutics I	3
PHA	446	Pharmacotherapeutics II	3	PHA	446	Pharmacotherapeutics II	3	PHA	446	Pharmacotherapeutics II	3

*Existing Curriculum*

*Proposed Curriculum (highlight changes)*

				PHA	452	Pathophysiology, Pharmacology & Toxicology III	4
				PHA	453	Pathophysiology, Pharmacology & Toxicology IV	4
				PHA	463L	Pharmacy Skills Laboratory III	2
				PHA	464L	Pharmacy Skills Laboratory IV	2
PHA	467-467L	Pharmacy Practice III & Lab	3	PHA	467- <del>467L</del>	Pharmacy Practice III: Research Evaluation and Pharmacoeconomics & Lab	2
PHA	468-468L	Pharmacy Practice IV & Lab	3	PHA	468- <del>468L</del>	Pharmacy Practice IV: Medication Safety and Sterile Compounding & Lab	2
STAT	281	Introduction to Statistics	3	STAT	281	Introduction to Statistics	3
<b>Electives</b>			<b>9</b>	<b>Electives</b>			<b>3</b>
<b>Summary of Credits Pharmaceutical Sciences (B.S.)</b>							
<b>System General Education Requirements</b>			<b>34</b>	<b>System General Education Requirements</b>			<b>34</b>
<b>Major Requirements</b>			<b>95</b>	<b>Major Requirements</b>			<b>101</b>
<b>Electives</b>			<b>9</b>	<b>Electives</b>			<b>3</b>
Total number of hours required for major			95	Total number of hours required for major			101
Total number of hours required for degree*			138	Total number of hours required for degree*			138

\*An exception to the 120-credit bachelor's degree was approved for the B.S. in Pharmaceutical Sciences in 2012.

## 7. Explanation of the Change:

New accreditation standards for Doctor of Pharmacy programs from the Accreditation Council for Pharmacy Education went into effect last year. These new standards include increased emphasis on skill development, affective domain competencies, integration of content across the curriculum, and active learning. Assessment data and curriculum mapping also indicated specific areas of the curriculum such as drug information, informatics, and quality improvement that required strengthening. This curricular revision of the B.S. in Pharmaceutical Sciences and Pharm.D. program is designed to address these areas.

The pre-pharmacy coursework changes include a switch from Macroeconomics to Microeconomics. This change will better prepare students for the professional program curriculum. Within the professional program, major changes include increased focus on laboratory experiences in order to emphasize skill development and content integration; integration of pathophysiology, pharmacology, and toxicology to allow for improved content understanding and retention; and creation of separate courses in over-the-counter medications and pharmacy calculations for better focus on these content areas.

No impact on the timeline for program completion is expected. The total number of credits for the B.S. in Pharmaceutical Sciences is unchanged. In addition, the total number of credits between the pre-pharmacy portion of the curriculum and the professional program is unchanged. Students can complete the pre-pharmacy curriculum (66 credits) within two years and then apply for acceptance into the professional program. After that, the students progress as a cohort through the first two years of the professional program leading to the B.S. in Pharmaceutical Sciences.

Courses will be phased in over several years, as other courses are removed from the program.

PHA Course Modifications:

Course	Course Deletion	Current Credit Hours	Proposed Credit Hours
PHA 320 Introduction to Pathophysiology	X	3	0
PHA 331 Pharmaceutics I		3	4
PHA 332 Pharmaceutics II		4	2
PHA 332L Pharmaceutics II Lab	X	0	0
PHA 340 Medicinal Chemistry I		4	3

Course	Course Deletion	Current Credit Hours	Proposed Credit Hours
PHA 340L Medicinal Chemistry I Lab	X	0	0
PHA 341 Medicinal Chemistry II		4	3
PHA 341L Medicinal Chemistry II Lab	X	0	0
PHA 367 Pharmacy Practice I		2	1
PHA 367L Pharmacy Practice I Lab	X	0	0
PHA 368 Pharmacy Practice II		3	2
PHA 368L Pharmacy Practice II Lab	X	0	0
PHA 442 Pharmacology I	X	5	0
PHA 443 Pharmacology II	X	4	0
PHA 444 Toxicology	X	2	0
PHA 445 Pharmacotherapeutics I		2	3
PHA 467 Pharmacy Practice III		3	2
PHA 467L Pharmacy Practice III Lab	X	0	0
PHA 468 Pharmacy Practice IV		3	2
PHA 468L Pharmacy Practice IV Lab	X	0	0
Changes to PHA Coursework		<b>42</b>	<b>22</b>

New PHA courses:

Course	Proposed Credit Hours	
PHA 313 Pharmacy Calculations	1	
PHA 326L Integrated Pharmacy Laboratory I	1	
PHA 342 Self Care Pharmacotherapeutics I	1	
PHA 352 Pathophysiology, Pharmacology & Toxicology I	3	
PHA 353 Pathophysiology, Pharmacology & Toxicology II	3	
PHA 363L Pharmacy Skills Laboratory I	1	
PHA 364L Pharmacy Skills Laboratory II	2	
PHA 419 Fundamentals of Health Care Practice II	1	
PHA 426L Integrated Pharmacy Laboratory II	1	
PHA 452 Pathophysiology, Pharmacology & Toxicology III	4	
PHA 453 Pathophysiology, Pharmacology & Toxicology IV	4	
PHA 463L Pharmacy Skills Laboratory III	2	
PHA 464L Pharmacy Skills Laboratory IV	2	
Additions to PHA Coursework		<b>26</b>

Implementation plan for the Pharmaceutical Sciences (B.S.) and Doctor of Pharmacy (Pharm.D.) coursework:  
Fall 2018

Course Deletions	New Courses	Course Modifications
PHA 320 Introduction to Pathophysiology	PHA 313 Pharmacy Calculations	PHA 219 Fundamentals of Health Care Practice • Renamed to Fundamentals of Health Care Practice I
PHA 340L Medicinal Chemistry I Lab	PHA 352 Pathophysiology, Pharmacology & Toxicology I	PHA 331 Pharmaceutics I • 3 to 4 credits
PHA 367L Pharmacy Practice I Lab	PHA 363L Pharmacy Skills Laboratory I	PHA 340 Medicinal Chemistry I • 4 to 3 credits
		PHA 367 Pharmacy Practice I • 2 to 1 credits • Renamed to Pharmacy Practice I: Introduction to Pharmacy Practice

Spring 2019

Course Deletions	New Courses	Course Modifications
PHA 332L Pharmaceutics II Lab	PHA 326 Integrated Pharmacy Laboratory I	PHA 332 Pharmaceutics II • 4 to 2 credits
PHA 341L Medicinal Chemistry II Lab	PHA 342 Self Care Pharmacotherapeutics I	PHA 341 Medicinal Chemistry II • 4 to 3 credits
PHA 368L Pharmacy Practice II Lab	PHA 353 Pathophysiology,	PHA 368 Pharmacy Practice II

Course Deletions	New Courses	Course Modifications
	Pharmacology & Toxicology II	<ul style="list-style-type: none"> <li>Renamed to Pharmacy Practice II: Drug Information and Communication</li> </ul>
	PHA 364L Pharmacy Skills Laboratory II	

Fall 2019

Course Deletions	New Courses	Course Modifications
PHA 442 Pharmacology I	PHA 452 Pathophysiology, Pharmacology & Toxicology III	PHA 445 Pharmacotherapeutics I <ul style="list-style-type: none"> <li>2 to 3 credits</li> </ul>
PHA 467L Pharmacy Practice III Lab	PHA 463L Pharmacy Skills Laboratory III	PHA 467 Pharmacy Practice III <ul style="list-style-type: none"> <li>Renamed to Pharmacy Practice III: Research Evaluation and Pharmacoeconomics</li> </ul>

Spring 2020

Course Deletions	New Courses	Course Modifications
PHA 443 Pharmacology II	PHA 419 Fundamentals of Health Care Practice II	PHA 468 Pharmacy Practice IV <ul style="list-style-type: none"> <li>3 to 2 credits</li> <li>Renamed to Pharmacy Practice IV: Medication Safety and Sterile Compounding</li> </ul>
PHA 444 Toxicology	PHA 426 Integrated Pharmacy Laboratory II	
PHA 468L Pharmacy Practice IV Lab	PHA 453 Pathophysiology, Pharmacology & Toxicology IV	
	PHA 464L Pharmacy Skills Laboratory IV	

Fall 2020

Course Deletions	New Courses	Course Modifications
PHA 742L Patient Assessment and Self Care Lab	PHA 726L Integrated Pharmacy Laboratory III	PHA 742 Patient Assessment and Self Care <ul style="list-style-type: none"> <li>Renamed to Self Care Pharmacotherapeutics II</li> </ul>
PHA 767 Pharmacy Practice V	PHA 763L Pharmacy Skills Laboratory V	PHA 727 Professional Resources Management <ul style="list-style-type: none"> <li>3 to 4 credits</li> </ul>
PHA 767L Pharmacy Practice V Lab		

Spring 2021

Course Deletions	New Courses	Course Modifications
PHA 741L Public Health and Wellness Lab	PHA 719 Pharmacy Capstone	PHA 741 Public Health and Wellness <ul style="list-style-type: none"> <li>Renamed to Public and Population Health</li> </ul>
PHA 768 Pharmacy Practice VI	PHA 764L Pharmacy Skills Laboratory VI	
PHA 768L Pharmacy Practice VI Lab	PHA 724 U.S. Health Care Systems	
PHA 723 Ethics in Healthcare Practice		