

Date Submitted: 09/12/18 2:31 pm

## Viewing: **PHYSBS-PROF : Physics: Professional Concentration**

Last approved: 05/24/18 2:13 am

Last edit: 10/15/18 11:02 am

Changes proposed by: jkennef

Catalog Pages Using  
this Program

[Physics B.S. with Professional Concentration](#)

[Physics \(PHYS\)](#)

Submitter: User ID: **jkennef** ~~kkulcza~~ Phone:  
**5916 7456**

Program Status Active

Academic Level Undergraduate

Type of proposal Major/Field of Study

Select a reason for this modification

Making Minor Changes to an Existing Degree (e.g. changing 15 or fewer hours, changing admission/graduation requirements, adding Focused Study)

Are you adding a concentration?

No

Are you adding a track?

No

Are you adding a focused study?

No

Effective Catalog Year Fall 2019

College/School Code

Fulbright College of Arts and Sciences (ARSC)

Department Code

### In Workflow

1. ARSC Dean Initial
2. Director of Program Assessment and Review
3. Registrar Initial
4. Institutional Research
5. PHYS Chair
6. ARSC Curriculum Committee
7. ARSC Dean
8. Global Campus
9. Provost Review
10. University Course and Program Committee
11. Faculty Senate
12. Provost Final
13. Provost's Office-- Notification of Approval
14. Registrar Final
15. Catalog Editor Final

### Approval Path

1. 09/06/18 2:35 pm  
Jeannine Durdik (jdurdik): Approved for ARSC Dean Initial
2. 09/07/18 11:44 am  
Alice Griffin (agriffin): Rollback to Initiator
3. 09/12/18 4:54 pm  
Jeannine Durdik

## Department of Physics(PHYS)

Program Code           PHYSBS-PROF  
 Degree                   Bachelor of Science  
 CIP Code

- (jdurdik): Approved for ARSC Dean Initial
4. 09/21/18 8:24 am  
Alice Griffin  
(agriffin): Approved for Director of Program Assessment and Review
  5. 09/24/18 11:32 am  
Lisa Kulczak  
(lkulcza): Approved for Registrar Initial
  6. 09/24/18 11:55 am  
Gary Gunderman  
(ggunderm): Approved for Institutional Research
  7. 09/25/18 11:14 am  
Julia Kennefick  
(jkennef): Approved for PHYS Chair
  8. 10/15/18 1:00 pm  
Pearl Dowe  
(pkford): Approved for ARSC Curriculum Committee
  9. 10/15/18 2:08 pm  
Jeannine Durdik  
(jdurdik): Approved for ARSC Dean
  10. 10/15/18 3:36 pm  
Miran Kang (kang): Approved for Global Campus
  11. 10/16/18 10:31 am  
Terry Martin

(tmartin): Approved  
for Provost Review

## History

1. Aug 27, 2014 by  
Leepfrog  
Administrator  
(clhelp)
2. Aug 27, 2014 by  
Leepfrog  
Administrator  
(clhelp)
3. May 18, 2016 by  
Lisa Kulczak (lkulcza)
4. Mar 2, 2017 by  
Donna Draper  
(ddraper)
5. Apr 2, 2018 by Gina  
Daugherty  
(gdaugher)
6. May 24, 2018 by  
Lisa Kulczak (lkulcza)

40.0801 - Physics, General.

Program Title

Physics: Professional Concentration

Program Delivery

Method

On Campus

Is this program interdisciplinary?

No

Does this proposal impact any courses from another College/School?

No

What are the total       na  
hours needed to  
complete the  
program?

## Program Requirements and Description

### Requirements

#### Professional Concentration

<a href="#">PHYS 3113</a>	Analytical Mechanics	3
<a href="#">PHYS 4333</a>	Thermal Physics	3
<del>10 semester hours numbered 3000 and above in physics or astronomy.</del>		<del>10</del>
A Junior Level Laboratory Course chosen from <a href="#">PHYS 361VL</a> , <a href="#">PHYS 3544</a> , or <a href="#">PHYS 3213</a>		1-4
6-9 semester hours numbered 3000 and above in physics or astronomy.		6-9
Total Hours		16

#### 8-Semester Plan

### Physics B.S. with Professional Concentration

#### Eight-Semester Degree Program

Students wishing to follow the eight-semester degree plan should see the [Eight-Semester Degree Policy](#) in the Academic Regulations chapter for university requirements of the program as well as Fulbright College requirements.

**University/state minimum core requirements** ~~Core requirement hours~~ may vary by individual, based on placement and previous credit granted. Once all core requirements are met, students may substitute **with a three-hour (or more) general electives.** ~~elective in place of a core area.~~ **Students** ~~Students~~ should consult **with their academic advisors.** ~~advisers.~~

First Year	Units
	Fall Spring
<a href="#">ENGL 1013</a> Composition I (ACTS Equivalency = ENGL 1013)	3
<a href="#">MATH 2554</a> Calculus I (ACTS Equivalency = MATH 2405)	4
<a href="#">PHYS 2054</a> University Physics I (ACTS Equivalency = PHYS 2034)	4
Fine Arts university/state minimum core	3
General Electives	1
<a href="#">ENGL 1023</a> Composition II (ACTS Equivalency = ENGL 1023)	3
<a href="#">MATH 2564</a> Calculus II (ACTS Equivalency = MATH 2505)	4
<a href="#">PHYS 2074</a> University Physics II (ACTS Equivalency = PHYS 2044 Lecture)	4
Humanities university/state minimum core	3
General Electives	1
Year Total:	15 15

Second Year	Units	
	Fall	Spring
<a href="#">MATH 2574</a> Calculus III (ACTS Equivalency = MATH 2603)	4	
<a href="#">PHYS 2094</a> University Physics III	4	
Select one of the following science four-hour lecture/lab combinations:	4	
<a href="#">CHEM 1103</a> University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & <a href="#">CHEM 1101L</a> University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)		
<a href="#">CHEM 1123</a> University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & <a href="#">CHEM 1121L</a> University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)		
<a href="#">CSCE 2004</a> Programming Foundations I		
<a href="#">CSCE 2014</a> Programming Foundations II		
<a href="#">BIOL 1543</a> Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & <a href="#">BIOL 1541L</a> Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab) or <a href="#">BIOL 1584</a> Biology for Majors		
<a href="#">GEOS 1113</a> General Geology (ACTS Equivalency = GEOL 1114 Lecture) & <a href="#">GEOS 1111L</a> General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)		
<a href="#">GEOS 1133</a> Earth Science (ACTS Equivalency = GEOL 1124 Lecture) & <a href="#">GEOS 1131L</a> Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)		
<b>or an approved four credit hours of other laboratory-based courses from these departments.</b>		
U.S. History Humanities university/state minimum core		3
<b>General Elective</b>	<b>±</b>	<b>-</b>
<a href="#">MATH 2584</a> Elementary Differential Equations		4
<a href="#">PHYS 3613</a> Modern Physics		3
<del><a href="#">PHYS 3213</a> Electronics in Experimental Physics (Recommended; else, PHYS/ASTR Group A)1,2</del>	<del>-</del>	<del>3</del>
Select one of the following four-hour science lecture/lab combinations:		4
<b>Social Sciences Humanities university/state minimum core</b>		<b>3</b>
<a href="#">CHEM 1103</a> University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture) & <a href="#">CHEM 1101L</a> University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)		
<a href="#">CHEM 1123</a> University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture) & <a href="#">CHEM 1121L</a> University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)		
<a href="#">CSCE 2004</a> Programming Foundations I		
<a href="#">CSCE 2014</a> Programming Foundations II		
<a href="#">BIOL 1543</a> Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture) & <a href="#">BIOL 1541L</a> Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)		
<a href="#">GEOS 1113</a> General Geology (ACTS Equivalency = GEOL 1114 Lecture) & <a href="#">GEOS 1111L</a> General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)		
<a href="#">GEOS 1133</a> Earth Science (ACTS Equivalency = GEOL 1124 Lecture) & <a href="#">GEOS 1131L</a> Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)		
<b>or an approved four credit hours of other laboratory-based courses from these departments.</b>		
<b>General Electives</b>		<b>1</b>

Year Total:	15	15
Third Year	Units	
	Fall	Spring
<a href="#">MATH 3083</a> Linear Algebra	3	
<a href="#">PHYS 3113</a> Analytical Mechanics	3	
<del>Advanced Level Elective<sup>1</sup></del>	<del>3</del>	-
<b>A junior-level laboratory course chosen from PHYS 361VL, PHYS 3544, or PHYS 3213</b>	<b>1-4</b>	
Social Sciences Humanities university/state minimum core	3	
<del>University/State Core Social Science requirement</del>	<del>3</del>	-
<b>General Electives</b>	<b>2-5</b>	
<a href="#">PHYS 3453</a> Electromagnetic Theory I	3	
<a href="#">PHYS 4333</a> Thermal Physics	3	
Any PHYS or ASTR course numbered 3000 or higher	3	
<del>General Electives</del>	-	<del>7</del>
<b>Social Sciences Humanities university/state minimum core</b>	<b>3</b>	
<b>General Electives</b>	<b>3</b>	
Year Total:	15	15
Fourth Year	Units	
	Fall	Spring
<a href="#">PHYS 4073</a> Introduction to Quantum Mechanics	3	
<del>PHYS/ASTR Group A<sup>2</sup></del>	<del>3</del>	-
<del>PHYS 462VL Modern Physics Laboratory (Highly recommended, else PHYS/ASTR Group A)</del>	<del>1</del>	-
<b>Any PHYS or ASTR course numbered 3000 or higher</b>	<b>3</b>	
General Electives	9	
<del>PHYS/ASTR Group A<sup>1,2</sup></del>	-	<del>3</del>
<a href="#">PHYS 4991</a> Physics Senior Seminar	1	
<del>General Electives (as needed to total 120 hours)</del>	-	<del>6</del>
Any PHYS or ASTR course numbered 3000 or higher (if needed). Otherwise, take General Electives.	3	
<b>General Electives</b>	<b>11</b>	
Year Total:	15	15
Total Units in Sequence:	120	
<sup>1</sup>	<del>Meets 40-hour advanced-credit hour requirement. See College Academic Regulations.</del>	
<sup>2</sup>	<del>Meets 24-hour rule (24 hours of 3000-4000-level courses in Fulbright College), in addition to meeting the 40-hour rule. See College Academic Regulations.</del>	
<del>PHYS/ASTR</del>	<del>Any PHYS or ASTR courses numbered 3000 or above.</del>	
<del>Group A</del>		

## Are Similar Programs available in the area?

No

Estimated Student Demand for Program na

Scheduled Program Review Date na

Program Goals and Objectives

**Program Goals and Objectives**

na

Learning Outcomes

**Learning Outcomes**

na

## Description and justification of the request

Description of specific change	Justification for this change
<p>We are adding a junior level laboratory course requirement to our BS degree to be chosen from PHYS 462VL (now 361VL), PHYS 3544 or PHYS 3213.</p> <p>Updated 8-semester plans to reflect degree requirements</p>	<p>Our faculty feel that our majors need more laboratory experience at an advanced level. Each of these junior courses are applicable to all subareas of physics, especially those in our department, and letting students choose between these three gives them some flexibility in their program of study.</p>

## Upload attachments

## Reviewer Comments

**Alice Griffin (agriffin) (09/07/18 11:44 am):** Rollback: Please visit with Ryan Cochran to address the discrepancies in the eight semester plan and degree requirements.

**Alice Griffin (agriffin) (09/20/18 11:13 am):** Inserted a range of hours (8-9) in spring of fourth year with permission from submitter. This designation helps clarify that electives can range from 29-30 credit hours.

**Ryan Cochran (rcc003) (10/12/18 11:18 am):** Updated eight-semester degree plan.