

Date Submitted: 09/12/18 12:46 pm

Viewing: **PHYSBS-ASTR : Physics: Astronomy****Concentration**

Last approved: 05/22/18 5:56 pm

Last edit: 10/15/18 10:44 am

Changes proposed by: jkennef

Catalog Pages Using

this Program

[Physics B.S. with Astronomy Concentration](#)[Physics \(PHYS\)](#)

Submitter:

**5916 7456**

User ID:

**jkennef** ~~kkulcza~~

Phone:

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. 09/12/18 1:10 pm  
Jeannine Durdik (jdurdik): Approved for ARSC Dean Initial
2. 09/21/18 8:23 am  
Alice Griffin (agriffin): Approved for Director of Program

## Department of Physics(PHYS)

Program Code           PHYSBS-ASTR  
 Degree                   Bachelor of Science  
 CIP Code

## Assessment and Review

3. 09/24/18 11:28 am  
Lisa Kulczak  
(lkulcza): Approved for Registrar Initial
4. 09/24/18 11:56 am  
Gary Gunderman  
(ggunderm): Approved for Institutional Research
5. 09/25/18 11:13 am  
Julia Kennefick  
(jkennef): Approved for PHYS Chair
6. 10/15/18 12:59 pm  
Pearl Dowe  
(pkford): Approved for ARSC Curriculum Committee
7. 10/15/18 2:08 pm  
Jeannine Durdik  
(jdurdik): Approved for ARSC Dean
8. 10/15/18 3:36 pm  
Miran Kang (kang): Approved for Global Campus
9. 10/16/18 10:22 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. Jun 8, 2015 by Lisa Kulczak (lkulcza)
4. May 17, 2016 by Lisa Kulczak (lkulcza)
5. Mar 2, 2017 by Julia Kennefick (jkennef)
6. Apr 2, 2018 by Gina Daugherty (gdaugher)
7. May 22, 2018 by Lisa Kulczak (lkulcza)

40.0801 - Physics, General.

Program Title

Physics: Astronomy 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 hours needed to complete the program? na

## Program Requirements and Description

---

### Requirements

## Astronomy Concentration

---

<a href="#">PHYS 3544</a>	Optics	4
6 semester hours of ASTR courses numbered 3000 or above ( <a href="#">ASTR 4033</a> , <a href="#">ASTR 4043</a> , <a href="#">ASTR 4073</a> )		6
6 additional hours numbered 3000 and above in physics or astronomy		6
Total Hours		16

## 8-Semester Plan

**Physics B.S. with Astronomy 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 should consult **with their academic advisor**. ~~advisers~~.

First Year	Units
	FallSpring
<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
<b>General Electives</b>	<b>1</b>
<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
	FallSpring
<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 four-hour science 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)	

[CSCE 2004](#) Programming Foundations I

[CSCE 2014](#) Programming Foundations II

[BIOL 1543](#) Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)

& [BIOL 1541L](#) Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)

or [BIOL 1584](#) Biology for Majors

[GEOS 1113](#) General Geology (ACTS Equivalency = GEOL 1114 Lecture)

& [GEOS 1111L](#) General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)

[GEOS 1133](#) Earth Science (ACTS Equivalency = GEOL 1124 Lecture)

& [GEOS 1131L](#) Earth Science Laboratory (ACTS Equivalency = GEOL 1124 Lab)

**or an approved four credit hours of other laboratory-based courses from these departments.**

U.S. History university/state minimum core 3

[MATH 2584](#) Elementary Differential Equations 4

[PHYS 3613](#) Modern Physics 3

Select one of the following four-hour lecture/lab combinations 4

[CHEM 1103](#) University Chemistry I (ACTS Equivalency = CHEM 1414 Lecture)

& [CHEM 1101L](#) University Chemistry I Laboratory (ACTS Equivalency = CHEM 1414 Lab)

[CHEM 1123](#) University Chemistry II (ACTS Equivalency = CHEM 1424 Lecture)

& [CHEM 1121L](#) University Chemistry II Laboratory (ACTS Equivalency = CHEM 1424 Lab)

[CSCE 2004](#) Programming Foundations I

[CSCE 2014](#) Programming Foundations II

[BIOL 1543](#) Principles of Biology (ACTS Equivalency = BIOL 1014 Lecture)

& [BIOL 1541L](#) Principles of Biology Laboratory (ACTS Equivalency = BIOL 1014 Lab)

or [BIOL 1584](#) Biology for Majors

[GEOS 1113](#) General Geology (ACTS Equivalency = GEOL 1114 Lecture)

& [GEOS 1111L](#) General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)

[GEOS 1133](#) Earth Science (ACTS Equivalency = GEOL 1124 Lecture)

& [GEOS 1111L](#) General Geology Laboratory (ACTS Equivalency = GEOL 1114 Lab)

**or an approved four credit hours of other laboratory-based courses from these departments.**

Social Sciences university/state minimum core 3

**General Electives 1**

Year Total: 15 15

Third Year Units

FallSpring

[PHYS/ASTR Group A 1,2](#) 4 -

[PHYS/ASTR Group A or General Elective](#) 4 -

[MATH 3083](#) Linear Algebra 3

[PHYS 3213](#) Electronics in Experimental Physics 1,2 3 -

[PHYS 3544](#) Optics 4

[PHYS/ASTR course numbered 3000 or higher](#) 3

[Social Sciences university/state minimum core](#) 3

<b>General Electives</b>	<b>2</b>
<u>PHYS 3453</u> Electromagnetic Theory I	3
PHYS/ASTR course numbered 3000 or higher	3
Social Sciences university/state minimum core	3
<del>General Elective</del>	<del>- 4</del>
<del>University/State Core Social Science requirement</del>	<del>- 3</del>
<b>General Electives</b>	<b>6</b>
Year Total:	15 15
Fourth Year	Units
	FallSpring
<u>PHYS 4073</u> Introduction to Quantum Mechanics	3
<del>PHYS 3544 Optics</del> <sup>1,2</sup>	<del>4 -</del>
<del>ASTR 4033 Astrophysics I: Stars and Planetary Systems</del> <sup>1,2</sup>	<del>3 -</del>
<b>ASTR course numbered 3000 or higher (choose from ASTR 4033, ASTR 4043, or ASTR 4073)</b>	<b>3</b>
<b>University Residency Requirement Electives</b>	<b>1</b>
General Electives	8
<u>PHYS 4991</u> Physics Senior Seminar <sup>1,2</sup>	1
<del>PHYS 4734 Introduction to Laser Physics</del> <sup>1,2</sup>	<del>- 4</del>
<del>or PHYS 4773 Introduction to Optical Properties of Materials</del>	
<del>ASTR 4043 Astrophysics II: Galaxies and the Large Scale Universe</del> <sup>1,2</sup>	<del>- 3</del>
<b>ASTR course numbered 3000 or higher (choose from ASTR 4033, ASTR 4043, or ASTR 4073)</b>	<b>3</b>
General Electives	11
Year Total:	15 15
Total Units in Sequence:	120
<p><sup>1</sup> Meets 40-hour advanced-credit hour requirement. See College Academic Regulations.</p> <p><sup>2</sup> 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.</p> <p>Group Any PHYS or ASTR classes numbered 3000 or above.</p> <p>A:</p>	

Are Similar Programs available in the area?

No

Estimated Student na

Demand for Program

Scheduled Program na

Review Date

Program Goals and Objectives

**Program Goals and Objectives**

na

Learning Outcomes

**Learning Outcomes**

na

Description and justification of the request

<b>Description of specific change</b>	<b>Justification for this change</b>
Adjusting 8-semester plan per Alice to include correct hours in elective courses.	too many elective courses listed in plan

Upload attachments

Reviewer Comments

**Ryan Cochran (rcc003) (10/11/18 12:46 pm):** Updated eight-semester degree plan.

Key: 535