

## Cover Sheet: Request 14710

### AST 3019 – Astronomy and Astrophysics 2

#### Info

Process	Course Modify Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Desika Narayanan desika.narayanan@ufl.edu
Created	2/4/2020 8:30:21 PM
Updated	12/4/2020 1:41:08 PM
Description of request	Very minor changes to the catalog topics of AST 3019

#### Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CLAS - Astronomy 16060000	Elizabeth Lada		7/23/2020
syllabus_11902.pdf					2/4/2020
College	Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane		10/16/2020
No document changes					
University Curriculum Committee	Recycled	PV - University Curriculum Committee (UCC)	Casey Griffith	Please address exam policy comments and course work comments from UCC review email.	11/17/2020
No document changes					
College	Approved	CLAS - College of Liberal Arts and Sciences	Joseph Spillane		12/4/2020
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			12/4/2020
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

# Course|Modify for request 14710

## Info

**Request:** AST 3019 – Astronomy and Astrophysics 2

**Description of request:** Very minor changes to the catalog topics of AST 3019

**Submitter:** Desika Narayanan desika.narayanan@ufl.edu

**Created:** 2/4/2020 8:28:41 PM

**Form version:** 1

## Responses

### Current Prefix

*Enter the current three letter code (e.g., POS, ATR, ENC).*

Response:

AST

### Course Level

*Select the current one digit code preceding the course number that indicates the course level at which the course is taught (e.g., 1=freshman, 2=sophomore, etc.).*

Response:

3

### Number

*Enter the current three digit code indicating the specific content of the course based on the SCNS taxonomy and course equivalency profiles.*

Response:

019

### Lab Code

*Enter the current lab code. This code indicates whether the course is lecture only (None), lab only (L), or a combined lecture and lab (C).*

Response:

None

### Course Title

*Enter the current title of the course as it appears in the Academic Catalog. There is a 100 character limit for course titles.&nbsp;*

Response:

Astronomy and Astrophysics 2

### Effective Term

*Select the requested term that the course change(s) will first be implemented. Selecting "Earliest" will allow the change to be effective in the earliest term after SCNS approval. If a specific term and year are selected, this should reflect the department's expectations. Courses cannot be changed retroactively, and therefore the actual*

*effective term cannot be prior to SCNS approval, which must be obtained prior to the first day of classes for the effective term. SCNS approval typically requires at least 6 weeks after approval of the course change at UF.*

Response:  
Earliest Available

**Effective Year**

*Select the requested year that the course change will first be implemented. See preceding item for further information.*

Response:  
Earliest Available

**Requested Action**

*Indicate whether the change is for termination of the course or any other change. If the latter is selected, all of the following items must be completed for any requested change.*

Response:  
Other (selecting this option opens additional form fields below)

**Change Course Prefix?**

Response:  
No

**Change Course Level?**

*Note that a change in course level requires submission of a course syllabus.*

Response:  
No

**Change Course Number?**

Response:  
No

**Change Lab Code?**

*Note that a change in lab code requires submission of a course syllabus.*

Response:  
No

**Change Course Title?**

Response:  
No

**Change Transcript Title?**

Response:  
No

**Change Credit Hours?**

*Note that a change in credit hours requires submission of a course syllabus.*

Response:  
No

**Change Variable Credit?**

*Note that a change in variable credit status requires submission of a course syllabus.*

Response:  
No

**Change S/U Only?**

Response:  
No

**Change Contact Type?**

Response:  
No

**Change Rotating Topic Designation?**

Response:  
No

**Change Repeatable Credit?**

*Note that a change in repeatable credit status requires submission of a course syllabus.*

Response:

No

**Change Course Description?**

*Note that a change in course description requires submission of a course syllabus.*

Response:

Yes

**Current Course Description**

Response:

Second part of a two part sequence. Stellar distance determination; spectral classification, magnitudes and the nature of color indices; binary stars; the interstellar medium; the Sun as a star; stellar interiors; star formation and stellar evolution; the structure of the Milky Way; the kinds of galaxies and their properties; groups, clusters and superclusters of galaxies; and cosmology. (P)

**Proposed Course Description (50 words max)**

Response:

Second part of a two part sequence. Survey of astronomy and astrophysics for physical science, engineering or mathematics majors. Covers compact objects; the Solar System; exoplanets; the Milky Way and galaxies; cosmology and relativity. (P)

**Change Prerequisites?**

Response:

No

**Change Co-requisites?**

Response:

No

**Rationale**

*Please explain the rationale for the requested change.*

Response:

We have evolved the course description to better dovetail with AST 3018

# Astronomy 3019: Astronomy & Astrophysics 2

## *Brief Course Description*

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This is an introductory course in Astronomy and Astrophysics designed for students majoring in astronomy, physics, math, or engineering. This course pairs with AST 3018, discussing about half of the major topics in astronomy. While the other course focuses on stellar astrophysics and the interstellar medium, this course primarily focuses on planetary science, relativistic phenomena, Galactic and extragalactic astrophysics, and cosmology.

## *Lecture Times and Locations:*

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**Lecture Location:** CSE E121  
**Lecture Times:** MWFs, 3:00 PM – 3:50 PM (Period 8)

## *Staff:*

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**Instructor:** Prof. Paul Torrey  
**Office:** Bryant Space Sciences Center, Room 310  
**Office Hours:** Monday and Wednesday at 4:00 PM – 5:00 PM, and by appointment  
**Phone:** (352) 294–1846  
**E-mail:** [paul.torrey@ufl.edu](mailto:paul.torrey@ufl.edu)  
**Course Website:** Canvas/E-Learning

**\*\*\* Primary TA:** Amy Gottlieb  
**Office:** Bryant Space Sciences Center, Room 401  
**Office Hours:** Thursday at 2:00 PM - 3:00 PM — Room 217  
**E-mail:** [agottlieb7@ufl.edu](mailto:agottlieb7@ufl.edu)

**Teaching Assistant:** Billy Schap  
**Office:** Bryant Space Sciences Center, Room 319  
**Office Hours:** Tuesday at 2:00 PM - 3:00 PM — Room 217  
**E-mail:** [wschap@ufl.edu](mailto:wschap@ufl.edu)

## *General Education Objectives and Learning Outcomes:*

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AST 3018 & 3019 are General Education physical science (P) courses. This course will specifically cover:

- Special and General Relativity
- Stellar remnants: white dwarfs, neutron stars and black holes
- The nature of the Milky Way Galaxy
- The nature, formation, distribution and evolution of galaxies

- Cosmology and the early universe
- The solar system

As such, the course covers not only the Universe and the bodies in it – planets, moon, stars, galaxies, etc. -- but also how we know about those things, making use of our understanding of the underlying physics of orbits and radiation. The course will focus on major scientific developments in astronomy & astrophysics and their impacts on society and the environment.

**Physical Sciences:** The physical and biological sciences provide instruction in the basic concepts, theories, and terms of science and the scientific method. Courses focus on major scientific developments and their impacts on society and the environment. You will formulate empirically-testable hypotheses derived from the study of physical processes and living things and you will apply logical reasoning skills through scientific criticism and argument.

Student learning outcomes for a General Education physical science course in astronomy are as follows:

**I. Content.**

1. Know the basic concepts, theories, and terminology of natural science and the scientific method in astronomy.
2. Know the major scientific developments in astronomy and the impacts on society and the environment.
3. Know relevant processes that govern physical systems in astronomy.

**II. Critical Thinking.**

1. Formulate empirically-testable hypotheses derived from the study of physical processes in astronomy.
2. Apply logical reasoning skills effectively through scientific criticism and argument in astronomy.
3. Apply techniques of discovery and critical thinking effectively to solve experiments and to evaluate outcomes.

**III. Communication.**

1. Communicate scientific findings clearly and effectively using oral, written, and/or graphic forms.
2. Write effectively in several forms, such as in research papers and laboratory reports.

*Textbook:*

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The required text for this course is *Foundations of Astrophysics*, by Ryden, Peterson (ISBN 978-0-321-59558-4). Other references may be used for supplemental information throughout the course as distributed through the course website.



## *Attendance & Class Participation:*

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Attendance will be taken in class at random times through occasional, random sign-in sheets or in-class group work, the latter also giving you an opportunity to review the material. The number and frequency of these is at the discretion of the instructor and 1-2 (depending on the number given during the semester) will be dropped or counted as extra credit for your final grade. Given this lenient policy, please do not contact the instructor about missed classes unless you have a serious ongoing problem or you have excused absences consistent with university policy: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>. You may need to make calculations, so you should always bring a working scientific calculator to class in addition to your usual materials for taking notes.

Disruptive or rude behavior toward any member of the course including the instructor, TAs, classmates, or university staff will not be tolerated. Examples of prohibited behavior include (but are not limited to) excessive talking during lecture that serves to interrupt and ridiculing comments toward others. First offenses will be subject to a written warning from the instructor. Subsequent offenses may result in reduction of a student's Class Participation grade.

## *Homework:*

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Five problem sets will be assigned as homework throughout the semester. You must submit your completed written homework assignment at the beginning of class on the day that it is due (or it is considered late). Late homework is penalized 20% per day. Working in groups is allowed and encouraged. However, while you are permitted to discuss the problem/solution with your peers any submitted homework must be your own work (i.e. you are strictly prohibited from simply copying another person's work). Additionally, you must write the names of the people you worked with on the submitted homework. Each student is required to show all work and hand in separate homework solutions. No emailed homework.

## *Exams:*

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There will be two exams given over the course of the semester: one midterm exam and a final exam. The final exam will be focused on the material after the midterm (generally not comprehensive) but may include concepts from before the midterm; both exams will include material from lecture and the book. The Final Exam is scheduled for:

April 29th, 2020 at 7:30 AM - 9:30 AM

If you cannot make this exam time, you must let the instructor know immediately. Please bring a working non-programmable scientific calculator, at least two pencils (with erasers), and your ID with you to both exams.

## *Course Grade Summary:*

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Each of the components of class described above will be assigned the following weights to determine your final score:

- Homework: 35%
- Attendance/Class Participation: 15%
- Midterm Exam: 20%
- Final Exam: 30%

UF grade policies may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

The strictest grading policy I will adhere to is:

Letter	%Points	GPA	Letter	%Points	GPA	Letter	%Points	GPA
A	93-100	4.0	B-	80-82	2.67	D+	67-69	1.33
A-	90-92	3.67	C+	77-79	2.333	D	63-66	1.0
B+	87-89	3.33	C	73-76	2.0	D-	60-62	0.67
B+	83-86	3.0	C-	70-72	1.67	E	0-60	0

## *Honor Code:*

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UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honorcode/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

## *Evaluations:*

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Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Students are strongly encouraged to give feedback at any point through the semester. Let’s make this an instructive, helpful, positive class for everyone.

## *Disabilities:*

If you require any special accommodations due to a disability, please let the instructor (Prof. Torrey) know right away. Students with disabilities requesting accommodations should additionally register with the Disability Resource Center (352-392-8565), [www.dso.ufl.edu/drc](http://www.dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which should be presented to the instructor when requesting accommodation.

## *Learning Environment and Day-to-Day interactions:*

We will all be working closely together throughout the semester, and I expect that all students will contribute to a respectful, welcoming, and inclusive environment. This includes showing respect for all questions asked by members of the class.

## *Tentative Class Schedule:*

<b>Week</b>	<b>Week of</b>	<b>Topic</b>	<b>Text &amp; Chapters</b>
1	1/6	Introduction to the Course; Overview of the Solar System	Chapter 8
2	1/13	Solar System; The Earth + Moon system	Chapter 8/9
		<b>1/20 — No Class — University Holiday</b>	
3	1/20	The Earth + Moon system	Chapter 9
4	1/27	The Planets	Chapter 10
5	2/3	Small Bodies in the Solar System	Chapter 11
6	2/10	The Solar System in Perspective	Chapter 12
7	2/17	Solar System + Relativity	Chapter 12, Relativity
8	2/24	<b>Midterm</b>	Midterm; Relativity
		<b>3/2 - 3/6 — No Class — Spring Break</b>	
9	3/9	Stellar Remnants	Chapter 18
10	3/16	Our Galaxy	Chapter 19
11	3/23	Galaxies	Chapter 20
12	3/30	Active Galaxies	Chapter 21
13	4/6	Clusters and Superclusters	Chapter 22
14	4/13	Cosmology	Chapter 23
15	4/20	History of the Universe	Chapter 24

		<b>4/22 — Last Day of Class</b>	
		<b>Final Exam — 4/29 at 7:30 AM - 9:30 AM</b>	