

# DISCOVER THE UNIVERSE

AST1002, 3 CREDIT HOURS, SPRING 2017

Sections: 034A, 039A, 0386, 0387

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**COURSE TA'S:** *Will be updated during the first week of class*

**COURSE WEBSITE:** *<https://ufl.instructure.com/>*

**OFFICE HOURS:** *The instructor and TA's will use the BigBlueButton™ platform to conduct office hours by appointment and review sessions before exams. BigBlueButton™ is accessed through the Conference tool found in the navigation bar.*

**COURSE COMMUNICATIONS:** *For any class-related logistic or content questions, students should use **Piazza**. Piazza is accessible through the menu on the left side of the class website. This will benefit all students that might have similar questions and avoid repetitive questions. The instructor will regularly answer all questions posted in Piazza. Students should use the search on Piazza to check if the question they have has already been answered in the forum before posting. **If a student has a private question, the visibility of the question should be changed to private so the question will only be visible to the instructor.***

*Students can expect a reply from the instructor within 24 hours, unless you the question is posted during the weekend or holidays. If a post is made during the weekend, I will probably not post an answer until Monday morning. Since many assignments in this class are due on Sunday, I recommend to work on them early and ask any questions before Saturday.*

*The instructor will use the **Announcements** in the class website to communicate with the whole class. Students should frequently check the Announcement page. The class settings can be adjusted so that announcements are sent directly to emails.*

**REQUIRED MATERIALS:** *The required textbook for the class is **The Essential Cosmic Perspective** by Bennett, Donahue, Schneider, and Voit, **Seventh Edition**, Publisher: Pearson/Addison-Wesley, San Francisco. Make sure the book has the word **Essential** in*

the title; there is a more advanced copy of the book with a very similar title by the same author!

We will also be using **Mastering Astronomy** for assignments. Access to Mastering Astronomy is included with the purchase of a new textbook, but the access can be purchased separately. There is a link to the class website to Mastering Astronomy and more information on how to register.

**COURSE DESCRIPTION:** This course offers a broad overview of modern astronomy. We will examine how observation, experimentation and exploration have led to our present day understanding of the Earth environment and the Universe we live in. Our goal is to help students gain a physical understanding and an appreciation of the cosmos, and more generally, of the scientific method and how scientific discoveries impact society. Along the way, we will use and practice critical thinking skills and learn how to formulate empirically testable hypotheses. (P)

The topics we will cover include:

- Observing the sky
- Tools of Astronomy
- Our solar system
- The nature and lives of stars
- The search for extraterrestrial life
- The nature of our Milky Way Galaxy
- Properties of other galaxies
- The origin and fate of the Universe

**GENERAL EDUCATION:** AST 1002, Discover the Universe, meets the requirements for a General Education physical science (P) course. Physical science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern physical systems. Students will formulate empirically-testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments. A minimum grade of "C" is required for general education credit.

**PREREQUISITE KNOWLEDGE AND SKILLS:** Although this is essentially a non-mathematical science course, a very basic knowledge of mathematics is required. Middle School arithmetic and pre-algebra is sufficient.

## **COURSE AND GEN ED STUDENT LEARNING OBJECTIVES AND OUTCOMES:**

- To provide students with a broad overview of modern astronomy. This will be accomplished through weekly videos, reading assignments, interactive animations and discussions. Students will be able to define common astronomical terms and explain basic concepts and theories for a range of astrophysical phenomena.
- To teach students the scientific process and how we can understand the Universe using basic physical laws derived on Earth. This will be accomplished through weekly discussions and biweekly online projects. These projects guide students through the process of doing scientific research so that students can gain an understanding of how the scientific method is applied to the field of astronomy.
- To review the major scientific developments in astronomy and summarize their impacts on society and our environment such as recognizing our place in the Universe, comparing energy sources, and how atmospheric effects of planets influence climate change. Students will be able to critically evaluate the difference between good science and bad science. Evaluations will be based on discussions, and weekly quizzes.
- To teach scientific reasoning. Scientific reasoning is the use of logic, observations, and critical thinking to interpret the world around you. This will be accomplished through discussions and projects. Students will formulate empirically-testable hypotheses derived from the study of physical processes and phenomena and apply logical reasoning skills through scientific criticism and argument. These skills will serve them in their daily lives regardless of what career they pursue.
- To improve scientific literacy. Literacy in the basic concepts and terminology of science is necessary if they wish to follow science stories in the news or make informed decisions (such as voting) on issues that pertain to science. This will be accomplished through discussions about current news topics in astronomy and as part of the projects.
- To help students learn to communicate scientific ideas clearly and effectively using written or graphic forms. This will be done through discussions and as the written component of the projects.

## **COURSE POLICIES:**

This is a one term online course. Each week students will be required to complete a set of assignments. All assignments are listed in the course schedule by week; specific due dates can be found in the Course Calendar. As this is an online course, students must plan to have regular Internet access and time to explore the resources available on the various ideas and topics that we will be covering.

**REQUIREMENTS:** *Students are expected to:*

- *Complete all Modules in a timely fashion. Each module includes an introductory video, reading assignments, animations, and additional videos that help students understand the material better. **Assignments will begin on the first week of classes, if you do not login to the class website and work on the content weekly, the assignments will be late.***
- *Actively participate in all discussions and complete peer reviews as detailed below.*
- *Complete weekly online multiple-choice quizzes.*
- *Complete a set of four short projects spaced out during the semester. Some projects required multiple days of work, so make sure to read over the assignment early.*
- *Check the **course announcements** and class e-mail at least three times a week.*

**COURSE TECHNOLOGY:** *Access to and on-going use of a computer is required for all students. Competency in the basic use of a computer is required. Course work will require use of a computer and a broadband connection to the Internet. **In addition, students are required to have speakers and a webcam to take the proctored exams.** For additional information on UF College of Liberal Arts and Sciences policy regarding computer requirements you can visit: <http://it.clas.ufl.edu/policies/student-computer-requirement/>*

**COURSE EVALUATION BY STUDENTS:** *I will ask you to fill a survey **mid-term** to evaluate the class and make any necessary adjustments. Also, at the **end of the term** you will be required to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at **GATOR RATER** <https://evaluations.ufl.edu/>. The evaluation Web site is typically open during the last two or three weeks of the semester, but specific times when the site opens will be announced. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.*

## GRADING POLICIES:

See <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> for general UF grading policies. Grades for the course will be based on the following:

Assignment	Points or percentage
Weekly Quizzes	15 %
Weekly Discussions	10 %
Peer Grading	5 %
Projects (4 projects)	20 %
Exams (4 exams)	50 %

### GRADING SCALE:

Grade	% Points	GPA	Grade	% Points	GPA	Grade	% Points	GPA
A	> 90	4.0	B-	77 – 79	2.67	D+	64 – 66	1.33
A-	87 – 89	3.67	C+	74 – 76	2.33	D	60 – 63	1.0
B+	84 – 86	3.33	C	70 – 73	2.0	D-	57 – 59	0.67
B	80 – 83	3.0	C-	67 – 69	1.67	E	< 56	0

**QUIZZES (15 %):** A major responsibility for this class will be to watch the introductory videos, complete the reading assignments, and work with the interactive activities assigned in each module. This will help you learn the material.

**Introductory video quizzes:** There will be a weekly quiz for each short introductory video in the class. *Video quizzes are due on Wednesday* night each week. **Students need to pass the video quizzes with at least 50/60 points in order to move forward in the modules.** There will be multiple attempts to take the quiz, but the grade recorded for the assignment will be the average of the grades for all attempts. **Students should take careful notes when watching the videos and watch them multiple times if needed before taking the quiz.** All the information needed is included in the short videos. Looking for the information in the internet will give the wrong answers most of the time.

**Reading quizzes:** Reading quizzes will also be assigned each week to help students keep up with the reading and gauge the reading comprehension. These quizzes will be on the Mastering Astronomy website, but they are linked in each module. **Students need to use the textbook to answer the quizzes.** *Reading quizzes need to be completed by midnight (11:59 PM) Sunday* every week.

**Activity quizzes:** You will also have quizzes during the first three weeks of the semester to evaluate your participation in the interactive activities in the first three modules. These modules are probably the most difficult section of the class and working through the activities will help you become familiar with the more difficult concepts. **Activity quizzes are also due on Sunday.**

To account for any **technical or personal** circumstances (**including excused documented issues**) that might hinder the performance on a quiz, the three lowest quiz grades will be dropped at the end of the semester. **The drops will be the equivalent of make-up quizzes; therefore, there will be no make-up quizzes or any other accommodations to replace a quiz grade.** The schedule for the quizzes can be found on the class website.

**DISCUSSIONS (10 %):** Online discussion will be used for further exploration of the topics we study each week. We'll go beyond what the text has to say, and collaborate to brainstorm new perspectives on the subject and how it relates to other disciplines or areas of our lives. As such, students will be assessed by their participation in the Discussion Forum.

For each week/module that contains a Discussion Forum, students will be expected to post a thoughtful, **detailed response** (i.e., "yes," "no," "I agree," or "I disagree" answers are not sufficient) by the date posted on the course Calendar (usually midweek). The response should give **the student's opinion on the topic.**

**All discussion posts will have to be entered also as pdf files to be submitted to Turnitin.** This tool will help ensure that the posts are original. If a post is not original, Turnitin will give it a yellow, orange or red label and you the students will have the opportunity to check their report, fix the post and resubmit. Occasionally, Turnitin will highlight references as non-original and this might give a yellow label. If the only content highlighted as non-original are the citations, students do not need to fix and resubmit. However, yellow means that about 50% of the post is not original and the student response to a post should account for more than 50% of the answer. **Posts that are submitted with a red or orange label will not be read and will receive an automatic grade of 0.**

A Teaching Assistant will assign the final discussion grade. The TA will review the accuracy of the peer reviews and the Turnitin report before assigning grades to insure grades are fairly assigned. We need two weeks (one for peer review submission and another for revision) before entering the discussion grades in the Grade Book.

**PEER GRADING DISCUSSIONS (5 %):** When students complete their discussion, they will gain access to two other discussions from peers to provide feedback and evaluate them.

A grading rubric is provided in the class website to facilitate this process. Students will have one week to complete the evaluation of the discussions. The rubric needs to be filled for the review to be completed. **If a discussion is submitted late, no peer review will be assigned.**

**PROJECTS (20 %):** One of the most enjoyable aspects of science is doing research and making discoveries. Students are expected to complete four short projects on current research topics. Some of the topics included in these projects are the rotation and weather on the Sun and the discoveries of new planets around other stars.

These projects are time consuming; therefore, students will have **two weeks** to complete each project. Students should read the assignment early on so they can estimate the time needed for the assignment. If a student is having problems while working on the projects **during the first week of the assignment**, the instructor should be contacted for help.

**EXAMS (50 %):** Four exams will be assigned during the semester, three during the regular semester and a cumulative final during Finals week. The lowest exam grade will be dropped, so that only 3 exams will be included in the class grade.

The first exam will be timed, but it will not be proctored. **The second and third exams will be proctored using ProctorU. The cumulative final will also have to be scheduled with ProctorU.** Students need to schedule exams with ProctorU **at least 3 days in advance.** Read the ProctorU Student Handout in the Start Here page in the class website for more information.

**LATE ASSIGNMENT POLICY:** Students may submit projects and quizzes after the stated deadlines. A 10% grade penalty is assessed for work up to twenty-four hours late; an additional 10% is assessed for each additional day the work is late. A project or quiz that is submitted 10 days late will receive a grade of 0. **Because of peer evaluations of discussions, all discussions need to be submitted on time. Any discussion more than 2 days late will receive a grade of 0.**

## UF POLICIES:

**UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES:** Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not

retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

**UNIVERSITY POLICY ON ACADEMIC MISCONDUCT:** Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at <http://www.dso.ufl.edu/students.php>.

**NETIQUETTE: COMMUNICATION COURTESY:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. <http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

**UF ONLINE HANDBOOK:** Additional information can be found on <http://handbook.uflonline.ufl.edu/>

## GETTING HELP:

For issues with technical difficulties for E-learning, **do NOT contact the instructor**, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

**Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them.** The ticket number will document the time and date of the problem. Students MUST contact the instructor within 24 hours of the technical difficulty to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should students have any complaints with their experience in this course they should visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.