

# DISCOVER THE UNIVERSE

AST1002, SECTION 4B27, 3 CREDIT HOURS, SUMMER B 2023

**INSTRUCTOR:** *Naibi Mariñas*

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**MEETING TIMES:** *MTWRF, 4<sup>th</sup> Period (12:30 am to 1:45 pm)*

**CLASSROOM:** *CSE E121*

**OFFICE HOURS:** *Tuesdays 11:00 am to noon, or by appointment*

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

**REQUIRED TEXT:** *The Essential Cosmic Perspective by Bennett, Donahue, Schneider, and Voit, 9<sup>th</sup> Edition, Publisher: Pearson/Addison-Wesley, San Francisco.*

**OTHER REQUIRED MATERIALS:**

- 1. Access to and on-going use of a computer OR iPad is required for all students since part of the material will be online.*
- 2. HIGH SPEED broadband connection to the Internet is necessary to view the introductory online class videos.*
- 3. One cardboard tube at least 30" in length (longer will be better). Gift wrap paper cardboard tubes or mailing tubes will work for this.*

**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 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 discussions and 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 6-week course that will combine online learning and in-class activities. Each week students will be required to complete a set of assignments. As this class has an online component, 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:*

- *Attend all classes and actively participate in discussions and group projects (Projects are done in-class and account for a large fraction of your grade).*
- *Complete all reading assignments and online assignments in the class website in a timely fashion. It is not my objective to repeat in class what you have already learned through reading the textbook. Our time in class will be used to expand on concepts already presented in the class website by using mini-lectures, discussions and group activities.*
- *Complete all projects*
- *Complete all exams*

**COURSE TECHNOLOGY:** *Competency in the basic use of a computer is required. Course work will require use of a computer and a high speed broadband connection to the Internet. 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:** Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via

<https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-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 Graded Quizzes	10 %
Weekly in-class projects and activities	40 %
In-class Exams (2 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	F	< 56	0

## QUIZZES (10 %):

Online Quizzes (10 %): A major responsibility for this class will be to complete the reading assignments given weekly so you can learn the material and participate in the discussions. Reading and video quizzes will be assigned each week to help you keep up with the material. These quizzes will be available at the end of each module in the class website.

**To account for any technical or personal circumstances that might hinder the performance on a quiz, TWO quizzes will be dropped at the end of the semester.** Therefore, there will be NO MAKE-UP QUIZZES. The schedule for the quizzes can be found on the class website.

**PROJECTS (40 %):** One of the most enjoyable aspects of science is doing research and making discoveries. However, science doesn't take place in isolation. We will use in class group projects and discussions to further explore topics we study each week, going beyond what the text has to say and collaborating with each other to find new perspectives on the topics and how they relate to other disciplines or areas of our lives. As such, you will be heavily assessed by your participation in the projects.

The lowest score on one project will be dropped to allow for any one-time difficulty in completing the assignments (for example, due to an excused or unexcused absence).

**INDIVIDUAL IN-CLASS EXAMS (50 %):** Two in-class exams will be assigned during the semester. Students should present their UF ID's to the exam proctors at the end of the exam. **Without an ID, your exam will not be graded.**

**MAKE-UP POLICY:** Because of the fast pace of summer classes, make-ups will be used only for individual exams. If a student misses an exam due to an excused absence as specified in the undergraduate catalog and provides the instructor with **timely notification (before exam date if possible)**, they will be allowed a reasonable time to make up the missed exam. *The format of a make-up test/exam will be at the discretion of the instructor; these exams will not be exclusively multiple-choice questions.* Birthdays and trips out of town are not excuses for taking a make up exam.

Two quizzes and one project grade will be dropped to accommodate for any additional missed work. **There is no make-up for these assignments.**

**COURSE EVALUATION BY STUDENTS:** Students are required to provide feedback on the quality of instruction in this course. These evaluations are conducted online at **GATOR RATER** <https://evaluations.ufl.edu/>. The evaluation Web site will be available during the last week 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/>.

## 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 <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>

This is an excerpt from the Academic Honesty Guidelines and Student Conduct Code in the University of Florida Undergraduate Catalog:

“Academic Honesty: The university requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge are diminished by cheating, plagiarism, and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the university will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff, and administrators who practice dishonest or demeaning behavior.”

Cheating is not tolerated in this class. Everyone in this class is expected to follow the University of Florida Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. Any student suspected of academic misconduct will be automatically referred to the Honor Code Chancellor as required by UF.

On all work submitted for credit by students at the university, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

**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://sfrc.ufl.edu/courses/distance/NetiquetteGuideforOnlineCourses.pdf>

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

**PRIVACY AND ACCESSIBILITY POLICY:**

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate

orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

## INFRASTRUCTURE (CANVAS)

- [Privacy Policy](#) Links to an external site.
- [Accessibility](#) Links to an external site.

## ZOOM

- [Privacy Policy](#) (Links to an external site.)
- [Accessibility](#) (Links to an external site.)

## YOUTUBE (GOOGLE)

- [Privacy Policy](#) (Links to an external site.)

## HONORLOCK

- [Privacy Policy](#) (Links to an external site.)
- [Accessibility](#)

## 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://elearning.ufl.edu/keep-learning/>

**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.

### TENTATIVE SCHEDULE:

This is only tentative and it can change at any time!

	Website Modules	Textbook Chapters	Exams
Week 1	Naked Eye Astronomy: Module 1	Chapters 1 and 2	
Week 2	Science of Astronomy: Modules 2, 3	Chapters 3, 4, 5	
Week 3	Solar System: Modules 4, 5, 6	Chapters 6, 7, 8, 9	Exam 1
Week 4	Stars: Modules 7, 8, 9	Chapters 10, 11, 12	
Week 5	Galaxies: Modules 10, 11, 12	Chapters 13, 14	
Week 6	Cosmology: Modules 13, 14	Chapters 15, 16, 17	Exam 2