Science is a way of thinking much more than it is a body of knowledge.

Carl Sagan (1934-1996)

ASTRONOMY 1110/1110H – Introductory Astronomy for Majors I

SYLLABUS - Fall 2022

Professor Information:

Name: JP Caillault
Office: 237 Physics
Office Hours: TuTh 1:00 – 2:00 pm, or by appointment
E-Mail: jpc@uga.edu

Course Information:

Description: This course is intended to be both a rigorous introduction to astronomy for Astrophysics majors as well as a thought-provoking introduction to astronomy for non-major Honors students. We will begin the course with a discussion of the fundamentals of basic astronomy, including eclipses and the phases of the moon, geocentric and heliocentric models, Kepler's and Newton's Laws, and properties of light. In the second part of the course we will study the solar system, including its formation and its varied contents: the sun, terrestrial and jovian planets, moons, rings, comets, and asteroids. We will end the course with a look at the methods of discovery of thousands of exoplanets.

There are no prerequisites for this course, but high school level geometry, trigonometry, and algebra will be used occasionally to help explain some concepts. This course fulfills the UGA General Education Core Curriculum Physical Science requirement.

Textbook/MasteringAstronomy: The textbook for the course is *The Cosmic Perspective: The Solar System*, 9th edition, by Bennett, Donahue, Schneider, and Voit. You must also purchase access to *MasteringAstronomy*, which is the website that you will use for all of your homework assignments. The ISBN number for the textbook with *MasteringAstronomy* is 9780134990774. The *MasteringAstronomy* Course ID = caillault46459.

Class Format: The course will mostly be conducted as a "flipped classroom" conducive to "active-learning." This means that (1) you will have to read the relevant textbook and *MasteringAstronomy* material before coming to class and (2) we will spend most of our class time discussing questions, solving problems, or engaging in group exercises that are related to the material in the textbook. Most, if not all, of these activities will be graded and, in total, the graded activities will comprise 25% of your course grade. It should be clear then that, in this format, participation is essential and, as a result, attendance is mandatory (there will be no make-ups for missed in-class graded activities).

Homework: You will be required to complete many different types of online homework assignments, including visual activities, ranking and sorting tasks, process of science questions, and various end-of-chapter quantitative problems. These homework assignments can only be completed through *MasteringAstronomy*. Please note that some of these problems may be problems that we will have already discussed in class, but, since your exams may include questions similar to those found in the homework assignments, you are strongly encouraged to do all of the homework on your own and to make sure that you clearly understand the questions and their correct answers. Also, please note that no late homework will be accepted. The homework due dates are set well in advance, so make sure you plan accordingly. Your overall homework grade will constitute 15% of your course grade.

Exams: There will be four in-class exams, each of which is worth 15% of your course grade.

Make-Up Exams: If you must miss an exam for a serious, documentable reason, then you must notify me in advance either in person or via e-mail. You must also provide the documentation for your absence within one week of the date of the missed exam. If you have done both of those things, then you may take a make-up exam for that section of the course during the time-slot for the Final Exam (Tuesday, December 13, 3:30 pm). If you have not notified me in advance or you have not provided documentation of your reason for missing the exam, then your score for that missed exam will be zero.

Grades: Your overall *numerical grade* will be calculated as described above (i.e., class activities are worth 25%, homework is worth 15%, and your four exams are worth 60%). Your final course *letter grade* will be determined according to the scale shown below. Please note that there is no extra credit available and there are no A's for effort. Also, please note that grades are assigned fairly and impartially and are non-negotiable.

93 ≤	A	
90 ≤	A–	< 93
87 ≤	B+	< 90
83 ≤	B	< 87
80 ≤	B–	< 83
77 ≤	C+	< 80
73 ≤	C	< 77
70 ≤	C–	< 73
60 ≤	D	< 70
	F	< 60

Academic Honesty: The University's Academic Honesty Policy (A Culture of Honesty) is strictly adhered to. Make sure you know and understand the policy.

Classroom Policies: We want a harmonious and cooperative learning atmosphere in the classroom, so please refrain from behavior that is disturbing to other students. Texting, checking email, Facebook, etc. can be distracting to you and those sitting around you. Other examples of disruptive behaviors include arriving late to class or leaving early; packing up books before class is over; dozing in class; noisy eating or drinking; and conducting side conversations. All of these behaviors distract other students and make it difficult for them to maintain their concentration.

Tentative **Class Schedule:**

Date (Day)	Chapter and Topic
Aug. 18 (R)	Introduction
Aug. 23, 25 (T, R)	Chapter 2 – Discovering the Universe
Aug. 30, Sep. 1 (T, R)	Chapter 3 – Science of Astronomy
Sept. 6, 8 (T, R)	Chapter S1 – Celestial Timekeeping and Navigation
Sep. 13 (Tuesday)	**EXAM 1 – Chapters 2-3, S1**
Sept. 15, 20 (R, T)	Chapter 4 – Motion, Energy, and Gravity
Sept. 22, 27 (R, T)	Chapter 5 – Light and Matter
Sept. 29, Oct. 4 (R, T)	Chapter 6 – Telescopes
Oct. 6 (Thursday)	**EXAM 2 – Chapters 4-6**
Oct. 11 (T)	Chapter 7 – Our Planetary System
Oct. 13 (R)	Chapter 8 – Formation of the Solar System
Oct. 18, 20 (T, R)	Chapter 9 – Planetary Geology: Terrestrial Worlds
Oct. 25, 27, Nov. 1 (T, R, T)	Chapter 10 – Planetary Atmospheres: Terrestrial Worlds
Nov. 3 (Thursday)	**EXAM 3 – Chapters 7-10**
Nov. 8, 10 (T, R)	Chapter 11 – Jovian Planet Systems
Nov. 15, 17 (T, R)	Chapter 12 – Asteroids, Comets, and Dwarf Planets
Nov. 22, 29 (T, R)	Chapter 13 – Other Planetary Systems
Dec. 1 (Thursday)	**EXAM 4 – Chapters 11-13**
Dec. 13 (Tuesday)	**Make-Up Exams (3:30)**