

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

Carl Sagan (1934-1996)

ASTRONOMY 1110/1110H – Introductory Astronomy I

SYLLABUS - Fall 2017

Professor Information:

Name: JP Caillault
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Office Hours: TuTh 10:45-12:00 or by appointment
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Course Information:

Description: This course is intended to be both a rigorous introduction to astronomy for Physics and Astronomy 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, and rings. We will end the course with a discussion of life on Earth and the possibility of its existence elsewhere.

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*, 8th 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 9780134564418. The *MasteringAstronomy* Course ID = MACAILLAULT03901.

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 35% 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 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 will 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 a midterm exam and a final exam, each worth 25% of your course grade.

Grades: Your overall *numerical grade* will be calculated as described above (i.e., class activities are worth 35%, homework is worth 15%, and your two exams are worth 50%). 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. In particular, **no laptops, cellphones, iPads, iPods, or any other electronic or communication devices are permitted in the classroom.** Other examples of disruptive behaviors include arriving late to class or leaving early; packing up books before class is over; dozing in class; reading the newspaper; 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:

<u>Date (Day)</u>	<u>Chapter and Topic</u>
Aug. 15 (T)	Introduction
Aug. 17 (R)	Great American Solar Eclipse of 2017
Aug. 22, 24 (T, R)	Chapter 2 – Discovering the Universe
Aug. 29, 31 (T, R)	Chapter 3 – Science of Astronomy
Sept. 5, 7 (T, R)	Chapter S1 – Celestial Timekeeping and Navigation
Sept. 12, 14 (T, R)	Chapter 4 – Motion, Energy, and Gravity
Sept. 19, 21 (T, R)	Chapter 5 – Light and Matter
Sept. 26 (T)	Chapter 6 – Telescopes
Sept. 28 (R)	Chapter 7 – Our Planetary System
Oct. 3 (T)	Chapter 8 – Formation of the Solar System
Oct. 5 (R)	MIDTERM EXAM – Chapters 2-8, S1
Oct. 10, 12 (T, R)	Chapter 9 – Planetary Geology: Terrestrial Worlds
Oct. 17, 19 (T, R)	Chapter 10 – Planetary Atmospheres: Terrestrial Worlds
Oct. 24, 26 (T, R)	Chapter 11 – Jovian Planet Systems
Oct. 31, Nov. 2 (T, R)	Chapter 12 – Asteroids, Comets, and Dwarf Planets
Nov. 7, 9 (T, R)	Chapter 13 – Other Planetary Systems
Nov. 14, 16 (T, R)	Chapter 14 – The Sun
Nov. 28 (T)	Chapter 24 – Life in the Universe
<u>Nov. 30 (R)</u>	<u>FINAL EXAM – Chapters 9-14, 24</u>