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

Carl Sagan (1934-1996)

ASTRONOMY 1010 – Astronomy of the Solar System

SYLLABUS - Spring 2019

Professor Information:

Name: JP Caillault
Office: 237 Physics
Office Hours: TuTh 2:00-3:00 or by appointment
Phone: 542-2883
E-Mail: jpc@physast.uga.edu

Course Information:

Description: This course will introduce non-science major students to essential ideas in Astronomy, ranging from Newton's Laws to electromagnetic radiation to the discovery of exoplanets. We will discuss the observational evidence supporting these ideas and, in most cases, the history of their development. 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 and their moons and rings, comets, asteroids, and dwarf planets. We will end the course with a look at how exoplanets were discovered and what we can expect to learn in the next 10-20 years.

The goals of the course are to have students understand and appreciate the details of these astronomical topics and to enable students to be able to converse intelligently about astronomy-related topics in the news.

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 = MACAILLAULT19854.

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. All of them are available only through *MasteringAstronomy*. Although studying with classmates can often be beneficial, you are strongly encouraged to try to do all of the homework on your own. Since your exams will include questions similar to those found in the homework assignments, the importance of the homework cannot be emphasized strongly enough. 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 20% of your course grade.

Exams: There will be four in-class exams, each of which is worth 20% 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 or phone (the Department of Physics and Astronomy's phone number is 542-2485 in case you can't reach me at my office number, 542-2883). 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, May 7, 8-11 am). 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., homework is worth 20% and your four exams are worth 80%). 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.

$93 \leq$ A
$90 \leq$ A– < 93
$87 \leq$ B+ < 90
$83 \leq$ B < 87
$80 \leq$ B– < 83
$77 \leq$ C+ < 80
$73 \leq$ C < 77
$70 \leq$ C– < 73
$60 \leq$ 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, smartphones, 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:**

Date (Day)	Chapter and Topic
Jan. 10 (R)	Introduction
Jan. 15, 17 (T, R)	Chapter 2 – Discovering the Universe
Jan. 22, 24 (T, R)	Chapter 3 – Science of Astronomy
Jan. 29, 31 (T, R)	Chapter S1 – Celestial Timekeeping and Navigation
Feb. 5 (T)	**EXAM 1 – Chapters 2, 3, S1**
Feb. 7, 12 (R, T)	Chapter 4 – Motion, Energy, and Gravity
Feb. 14, 19 (R, T)	Chapter 5 – Light and Matter
Feb. 21, 26 (R, T)	Chapter 6 – Telescopes
Feb. 28 (R)	**EXAM 2 – Chapters 4, 5, 6**
Mar. 5 (T)	Chapter 7 – Our Planetary System
Mar. 7 (R)	Chapter 8 – Formation of the Solar System
Mar. 19, 21 (T, R)	Chapter 9 – Planetary Geology: Terrestrial Worlds
Mar. 26, 28 (T, R)	Chapter 10 – Planetary Atmospheres: Terrestrial Worlds
Apr. 2 (T)	**EXAM 3 – Chapters 7, 8, 9, 10**
Apr. 4, 9 (R, T)	Chapter 11 – Jovian Planet Systems
Apr. 11, 16 (R, T)	Chapter 12 – Asteroids, Comets, and Dwarf Planets
Apr. 18, 23, 25 (R, T, R)	Chapter 13 – Other Planetary Systems
Apr. 30 (T)	**EXAM 4 – Chapters 11, 12, 13**