ASTR 1010L & 1020L

INTRODUCTION TO ASTRONOMY LAB

Spring 2022

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary during the course of the semester and will supersede anything written here.

Professor: Loris Magnani, loris@uga.edu Physics 238

Teaching Assistants: Head TA: Lauren Sgro
TA: Robin Allen

Web page: www.physast.uga.edu/~loris
From there, follow the link to ASTR1010L & 1020L. It is imperative that you monitor this page at least on a weekly basis. Important announcements will be posted there throughout the semester.

Class: Tuesday 8:00 – 10:45 PM – Room 202, Physics Bldg.

Office Hours – Dr. Magnani: Monday 4:00 – 5:00 PM or by appointment

COURSE OBJECTIVES

The purpose of this course is to introduce you to the night sky and to small telescopes for making simple astronomical observations. These courses are de-coupled from the ASTR 1010 and ASTR 1020 lecture courses in the sense that (1) they don't have to be taken the same semester as the corresponding lecture course and (2) they don't necessarily cover the subject matter of the lecture course. The reason for not covering the subject matter of the corresponding lecture course is

that it is too difficult to observe most of the non-stellar objects discussed in ASTR 1020 using our small telescopes at the not-very-dark-sky sites we use. In the case of ASTR 1010, there are too few solar system objects that are visible from our observing site during any given semester.

The basic aim of the course is to get the student to complete 10 lab assignments, broken up into 8 indoor labs involving written handouts and exercises, and 2 outdoor labs which involve making observations of the night sky with the naked eye and/or with a telescope. This will give the students an introduction to the night sky, to small telescopes, and to online astronomical databases. Because we are at the mercy of the weather (you cannot make visual telescopic observations of the night sky if it's cloudy or raining), the number of outdoor/indoor labs is subject to change if we have very bad weather conditions during the semester (in which case we will have to do more indoor labs). Regardless, students must complete 10 labs over the course of the semester.

METHODOLOGY

The objectives of the course will be achieved by having the students complete 10 astronomical lab exercises, at least 2 of which involve either visual or telescopic observations of the night sky. There will also be a written lab final exam and 2 in-class quizzes.

The two observing labs are chosen from the following list.

1) Learning the constellations. The student will have ample opportunity to learn the Winter and Spring night sky and, for a portion of their grade on this lab, the student will have to identify, to the TAs' satisfaction, several constellations and stars with the naked eye.
2) Telescopic sketches of lunar craters with the telescope to determine the height of lunar mountains along the crater rim.
3) Telescopic sketches or images of at least 3 "deep sky" objects. Double stars count as "deep sky" objects.
4) Studying the motion of the Sun, Moon, and any naked-eye planet.
5) Light pollution assessment. Includes exploration of effects of light pollution, as well as identifying constellations.

These observing labs are done outside as are the tutorial sessions for learning the night sky. It will be very cold during the beginning of the semester – so DRESS

WARMLY and be prepared to spend a good deal of time outside in the cold weather.

In addition to the observing labs you will complete 8 written (indoor) labs during the course of the semester. As noted above, more written labs may be assigned if the weather does not allow us to go outside regularly; likewise, or more outdoor labs may be assigned if the weather is in our favor.

To do the written labs, YOU WILL NEED TO BRING A LAPTOP TO CLASS THAT CAN WIRELESSLY CONNECT TO THE INTERNET. A write-up describing each lab will be on the web page.

YOU WILL NEED TWO APPLICATIONS FOR USE IN THIS CLASS:

1) Star Chart smartphone app. This is available for Apple and Android phones. Link

2) Siril image reduction software. Available for Mac, Windows, & Linux. Link

Please come to the first day of lab activities with these downloaded.

STRUCTURE OF THE CLASS

The class meets Tuesday evenings from 8 PM to as late as 10:45 PM, although on many evenings class will end before 10:45 PM. We will always begin class by meeting in room 202. On some clear nights we may go outside to use the telescopes. The location will be on campus and specified in class. If you miss a class, you are still responsible for all announcements and material discussed and/or covered in class. This includes revision to this syllabus.

GRADING

Each lab report is 6% of your final grade. Thus, 10 labs contribute a total of 60% to your final grade. The 2 in-class quizzes will each contribute 10% to your final grade (thus, they will together contribute 20%). The lab-final exam will contribute 20% to your final grade. The final will be given on the last class meetings, May 3, 2022, from approximately 8:00-9:00 PM.

From the lab reports, the quizzes, and the lab final, your total score on a scale of 100 will be computed. That numerical grade will be turned into a letter grade using the following key:

A is for a score of 90.00 or above, A- is for the range 87.00 – 89.99, B+ is for 84.00 – 86.99, B is for 80.00 – 83.99, B- is for 77.00 – 79.99, C+ is for 74.00 – 76.99, C is for 70.00 – 73.99, C- is for 60.00 – 69.99, D is for 50.00 – 59.99, and F is for any average below 50.00.

STUDENT RESPONSIBILITIES

Please make a reasonable attempt to arrive on time. If you must leave earlier than the scheduled end of class, please try to use the upper exits at the top of the lecture hall when we are in room 202. Class disruptions or distracting behavior will not be tolerated.

Ask for clarification on anything you find unclear, ambiguous, or unspecified in this syllabus. This includes both course policies and astronomical topics.

Know the rules concerning withdrawals and incompletes, published in the UGA *Undergraduate Bulletin*. Note that we will NOT withdraw you from the course for excessive absences.

ACADEMIC HONESTY

The University of Georgia has a comprehensive policy on academic honesty, described in a document entitled A Culture of Honesty. This document is available through the Office of the Vice President for Instruction or online at https://ovpi.uga.edu/academic-honesty. This policy covers all academic work.

As a UGA student, you are responsible for knowing and understanding this policy. If you have any question about the appropriateness of your actions or your work, you are obligated to ask me for clarification.

Tentative Class Schedule

Any modifications to this schedule will be announced during class. Quiz dates below are tentative (except for the lab final). Any changes will be announced well ahead of time during classes.

SPRING 2022

Week Date Topics

1) Jan. 11 – **No class** meeting, class begins on January 25, 2022
2) Jan. 18 – **No class** meeting, class begins on January 25, 2022
3) Jan. 25 – Introduction, syllabus review, the celestial sphere
4) Feb. 1 – Telescopes and the telescope lab
5) Feb. 8 – Observational session or indoor exercise
6) Feb. 15 - **Quiz on the celestial sphere** – indoor exercise
7) Feb. 22 - Observational session or indoor exercise
8) Mar. 1 - Observational session or indoor exercise
9) Mar. 8 – **No class – Spring Break**
10) Mar. 15 - Observational session or indoor exercise
11) Mar. 22 - Observational session or indoor exercise

Thursday, March 24 – withdrawal deadline

12) Mar. 29 – Observational session or indoor exercise
13) Apr. 5 - **Quiz on the night sky** - Observational session or indoor exercise
14) Apr. 12 - Observational session or indoor exercise
15) Apr. 19 - Observational session or indoor exercise
16) Apr. 26 – Observational session or indoor exercise
17) May 3 **– Lab final**