INTRODUCTION TO ASTRONOMY LAB

Fall 2018

Professor: Loris Magnani
Head Teaching Assistant: Ms. Lauren Sgro
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Web Page: www.physast.uga.edu/~loris follow the link to ASTR1010L & 1020L. IT IS IMPERATIVE THAT YOU MONITOR THIS WEB PAGE AT LEAST ON A WEEKLY BASIS. Important announcements for the course will be posted there throughout the semester.

Class: Tuesday 8:00 – 10:45 PM – Room 202, Physics Bldg.
Office Hours – Dr. Magnani: Monday 3:30 – 5:30 PM or by appointment
Office Hours – Ms. Sgro: Monday, Wednesday 3:30 – 4:30 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 8 lab assignments, 5 indoor labs involving written handouts, and 3 outdoor which involve making observations of the night sky with the naked eye and 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), we have 5 indoor labs. The number of outdoor/indoor labs is subject to change if we have very bad conditions for the semester (in which we may have to do more indoor labs) or very good conditions (in which we may get to do another outdoor lab instead of an indoor one). Regardless, students must complete 8 labs over the course of the semester.

There are no freebie missed labs for this class and you must attend every night. If you are going to miss a class at some point in the semester, please let the head T.A. know ahead of time.

METHODODOLOGY

The objectives of the course will be achieved by having the students to complete 8 astronomical lab exercises, 3 of which involve either visual or telescopic observations. There will also be a written lab final exam and 2 in-class quizzes.

The three observing labs are the following:

1) Learning the constellations (includes a light pollution assignment). An outdoor quiz over the constellations will constitute the grade for this lab.
2) Learning to use the telescopes (some of this actually takes place indoors), and finding at least three double stars with telescopes.
3) Sketches of lunar craters to determine the height of lunar mountains.

The observing labs are done outside as are many of the tutorial sessions for learning the night sky. It will get very cold during the early parts 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 5 written (indoor) labs during the course of the semester including:

1) Star Charts and the Celestial Sphere.
2) Kepler’s Law
3) Parallax
4) Telescopes
5) Sizes & Scales of the Universe

As noted above, more written labs may be assigned if the weather does not allow us to go outside regularly. Other written labs may be substituted for one or more of the labs listed above.
To do the above written labs, YOU WILL NEED TO BRING A LAPTOP TO CLASS THAT CAN WIRELESSLY CONNECT TO THE INTERNET. We will allow people to work together (see below) so only one person in each group needs to bring a laptop. But at least one person in each group needs to bring a laptop. A write-up describing each lab is 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.

We will break up the class into groups of 2-3 because it will make the observing sessions more manageable. The composition of these groups will remain the same throughout the semester. A single lab report can be turned in by a group, and it is not necessary that all members turn in an individual lab report. However, the quizzes and lab final exam are taken individually.

GRADING

Each lab report is 8% of your final grade. Thus, 8 labs contribute a total of 64% 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 16% to your final grade. You will have two opportunities to take the lab final during the last three weeks of class. You only take the lab final once, but it can be on any one of the last two Tuesdays of the semester from 8:00 PM – 8:30 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 I will NOT withdraw you from the course for excessive absences.

**ACADEMIC HONESTY**

All students are responsible for knowing, understanding, and abiding by the academic honesty policy of the University of Georgia, which can be found online at [http://honesty.uga.edu](http://honesty.uga.edu). If you have any questions about this policy and how it pertains to your work in this course, please ask me for clarification.

**TENTATIVE SCHEDULE**

August 14 – No class
August 21 – Introduction, lecture on the celestial sphere in room 202
August 28 – Lecture on telescopes in room 202; Learning to use telescopes
September 4 – Exercise on the celestial sphere – Learning the night sky
September 11 – Learning the night sky -- observational session or indoor exercise.
September 18 - **Quiz on the celestial sphere** – Learning the night sky
September 25 – Quiz on the night sky – observational session or indoor exercise
October 2 – Observational session or indoor exercise
October 9 – Observational session or indoor exercise
October 16 – Observational session or indoor exercise

**Withdrawal Deadline: Wednesday, October 17th, 2018**

October 23 – No class – Spring Break
October 30 - **Quiz on night sky** - Observational session or indoor exercise
November 6 – Observational session or indoor exercise
November 13 – Observational session or indoor exercise
November 20 – No Class -- Thanksgiving Break
November 27 – **1st chance to take lab final** – Observational session or indoor exercise

December 4 – **2nd chance to take lab final** – Finishing up indoor/outdoor labs