INTRODUCTION TO ASTRONOMY LAB

Fall 2015

Professor: Loris Magnani
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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.
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Class: Tuesday 8:00 – 10:45 PM – Room 202, Physics Bldg.
Office Hours: Monday 4:30 – 5:30 PM or by appointment

Optional Text: Norton’s Star Atlas and Reference Handbook – 20th Ed., Ian Ridpath. NOTE: This text is OPTIONAL. That means you don’t have to purchase it if you don’t want to. It will help, but it is not essential to doing well in the class. Also, notes will be posted on the web page.

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 6 lab assignments, 4 indoor labs involving written handouts, and 2 outdoor labs 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 also have 4 written labs that will be worked on during cloudy or rainy nights (see below for details).

METHODOLOGY

The objectives of the course will be achieved by having the students to complete 7 astronomical lab exercises, 3 of which involve either visual or telescopic observations. The 4 non-telescope labs involve using online astronomical databases; an important tool that allows us to explore the night sky. There will also be a written lab final exam and 2 in-class quizzes.

You will choose 3 of 4 observing labs during the course of the semester. The 3 observing labs are the following:

1) Identifying stars and constellations with the naked eye.
2) Taking at least three images of close double stars using a CCD camera.
3) Sketches of lunar craters to determine the height of lunar mountains.
4) Verifying that the planet Uranus changes its position with respect to the background stars.

In addition to the observing labs you will complete 4 written (indoor) labs during the course of the semester. The 4 indoor labs are the following:

1) Star Charts and the Celestial Sphere.
2) Using the Naval Observatory’s star chart database to create maps of small regions of the sky.
3) Using the SIMBAD database to determine physical information on a sample of celestial objects.
4) Using the Virtual Observatory database to study selected areas of the sky.

To do the above indoor labs,

YOU WILL NEED TO BRING A LAPTOP TO CLASS THAT CAN WIRELESSLY CONNECT TO THE INTERNET.

I 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.
By the end of the semester, you will have turned in lab reports on 6 of the above labs (2 observational and 4 indoor).

A write-up describing each lab is on the web page.

I will break up the class into groups of 3 (or, if the situation calls for it, groups of 4) 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 10% of your final grade. Thus, 7 labs contribute a total of 70% to your final grade. The 2 in-class quizzes will each contribute 7.5% to your final grade (thus, they will together contribute 15%). The lab-final exam will contribute 15% to your final grade. As mentioned above, the lab-final will be given during the last two weeks of class. 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

Aug. 18 – No lab class during the first week of the semester
Aug. 25 – Lecture on the celestial sphere in room 202
Sep. 1 – Lecture on the celestial sphere in room 202
Sept. 8 – Lecture on the celestial sphere and telescopes in room 202
Sept. 15 – Exercise on the celestial sphere – Learning the night sky
Sept. 22 – Quiz on the celestial sphere – Learning the night sky.
Sept. 29 – Learning the night sky – observational session or indoor exercise
Oct. 6 – Observational session or indoor exercise
Oct. 13 – Observational session or indoor exercise
Oct. 20 – Observations or indoor exercise

Withdrawal Deadline: October 22nd

Oct. 27 – Observational session or indoor exercise
Nov. 3 – Observational session or indoor exercise
Nov. 10 – Quiz on night sky – Observational session or indoor exercise
Nov. 17 – 1st chance to take lab final – Finishing up indoor/outdoor labs
Nov. 23-27 – Thanksgiving break
Dec. 1 – 2nd chance to take lab final – Finishing up indoor/outdoor labs
Dec. 8 – 3rd chance to take lab final – Finishing up indoor/outdoor labs