ASTR1110L & 2030L – Introduction to Astronomical Observations

Fall 2021

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: Dr. Loris Magnani

Office: Physics 238

E-Mail: loris@physast.uga.edu

Web Page: www.physast.uga.edu/~loris

follow the link to ASTR1110L & 2030L. 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.

Phone: (706) 542-2876

Office Hours for Loris Magnani: Wednesdays 4:00 PM – 5:30 PM or by appointment

Class: Mondays 7:55 – 9:50 PM. Except for the first class on August 30th (NOTE: there is NO class on Monday, August 23rd), which meets in room 202 Physics, we will begin each class in room 221 Physics. Sometimes, we will use the larger telescope on

the roof of the Physics Building. Although we will be inside the dome, the temperature in the dome is virtually the same as outside, so be sure to wear warm clothing if it is cold outside.

COURSE OBJECTIVES

The purpose of this course is to introduce the student to the night sky and to small telescopes for making simple astronomical observations. These courses are de-coupled from the ASTR 1010, ASTR 1020, ASTR 1110H, and ASTR 1120H 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 or ASTR 1120H using our small telescopes at the not-very-dark-sky site we use.

METHODOLOGY

The objectives of the course will be achieved by having the students complete 10 astronomical lab exercises, 8 of which are completed indoors, and 2 of which involve visual observations outside or in the telescope dome upstairs. This will give the students an introduction to the night sky and to using telescopes. Some of the 8 indoor labs involve using online astronomical databases; an important research technique in modern astronomy. There will also be a written lab final exam and 2 in-class quizzes during the course of the semester.

One of the observing labs may involve using the small 8- or 10-inch Celestrons and/or the large 24-inch telescope on the roof of the building. The possible telescope labs for this semester are:

1) Determine the mass of Uranus or Neptune using the motion of their moons and Kepler's Third Law. This will require the 24-inch telescope which may not be fully operational during the course of the semester. If the 24-inch telescope is not operational, then, obviously, this lab cannot be done.

2) Determining that the planets Uranus or Neptune are moving with respect to the background stars.

3) Take images of at least 5 deep sky objects using the 8, 10, or 24-inch telescopes using CCD cameras (explained in class).

4) Take images of valleys and mountain ranges of the Moon using the CCD camera.

In addition to the observing labs you will complete 8 written (indoor) labs during the course of the semester. The 8 indoor labs will be chosen from 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 a selected (by me) area of the sky.
5) Kepler's Laws.
6) Spectral Classification of Stars.
7) Stellarium software package.
8) Hubble's Law
9) Rotation of Mercury
10) Stellar Parallax

To do the above 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 of each group needs to bring a laptop.

By the end of the semester, you will have turned in lab reports on 10 of the above labs (2 observational and 8 indoor) and finished the outdoor lab on recognizing constellations.

A write-up describing each of the outdoor 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 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, the recognizing the constellation lab, and lab final exam are taken individually.

GRADING

Each lab report is 7% of your final grade. Thus, the 10 labs contribute a total of 70% 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 10% 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 do so quietly. Class disruptions or distracting behavior will not be tolerated.

You are responsible for all topics discussed in class, as well as class announcements (e.g., changes in lab due dates or quiz dates). Although attendance is not mandatory, it is in your best interest to attend every class and absence from class does not excuse you from the above responsibilities. If you have to miss class for Covid-related reasons, you should arrange to get lecture notes from fellow students or from me. You are still responsible for completing lab assignments and quizzes though you may turn them in later.

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. Note also that after the midpoint of the semester, a withdrawal is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Office of Student Affairs because of emergency or health

reasons.

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 .

If you have any questions about this policy and how it pertains to your work in this course, please ask me for clarification.

CORONAVIRUS INFORMATION FOR STUDENTS FOR FALL 2021 CLASSES

Face coverings:
Following guidance from the University System of Georgia, face coverings are recommended for all individuals while inside campus facilities.

How can I obtain the COVID-19 vaccine?
University Health Center is scheduling appointments for students through the UHC Patient Portal (https://patientportal.uhs.uga.edu/login_dualauthentication.aspx). Learn more here – https://www.uhs.uga.edu/healthtopics/covid-vaccine.

The Georgia Department of Health, pharmacy chains and local providers also offer the COVID-19 vaccine at no cost to you. To find a COVID-19 vaccination location near you, please go to: https://georgia.gov/covid-vaccine.
In addition, the University System of Georgia has made COVID-19 vaccines available at 15 campuses statewide and you can locate one here: https://www.usg.edu/vaccination

What do I do if I have COVID-19 symptoms?
Students showing COVID-19 symptoms should self-isolate and schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see, https://www.uhs.uga.edu/info/emergencies.

What do I do if I test positive for COVID-19?
If you test positive for COVID-19 at any time, you are required to report it through the DawgCheck Test Reporting Survey. We encourage you to stay at home if you become ill or until you have excluded COVID-19 as the cause of your symptoms. UGA adheres to current Georgia Department of Public Health (DPH) quarantine and isolation guidance and requires that it be followed. Follow the instructions provided to you when you report your positive test result in DawgCheck.

Guidelines for COVID-19 Quarantine Period (As of 8/1/21; follow DawgCheck or see DPH website for most up-to-date recommendations)

Students who are fully vaccinated do not need to quarantine upon exposure unless they have symptoms of COVID-19 themselves. All others should follow the Georgia Department of Public Health (DPH) recommendations:
Students who are not fully vaccinated and have been directly exposed to COVID-19 but are not showing symptoms should self-quarantine for 10 days. Those quarantining for 10 days must have been symptom-free throughout the monitoring period and continue self-monitoring for COVID-19 symptoms for a total of 14 days. You should report the need to quarantine on DawgCheck (https://dawgcheck.uga.edu/),

and communicate directly with your faculty to coordinate your coursework while in quarantine. If you need additional help, reach out to Student Care and Outreach (sco@uga.edu) for assistance.
Students, faculty and staff who have been in close contact with someone who has COVID-19 are no longer required to quarantine if they have been fully vaccinated against the disease and show no symptoms.

Well-being, Mental Health, and Student Support
If you or someone you know needs assistance, you are encouraged to contact Student Care & Outreach in the Division of Student Affairs at 706-542-7774 or visit https://sco.uga.edu/. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.
UGA has several resources to support your well-being and mental health: https://well-being.uga.edu/
Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: https://caps.uga.edu/, TAO Online Support (https://caps.uga.edu/tao/), 24/7 support at 706-542-2273. For crisis support: https://healthcenter.uga.edu/emergencies/.

The University Health Center offers FREE workshops, classes, mentoring and health coaching led by licensed clinicians or health educators:
https://healthcenter.uga.edu/bewelluga/

Monitoring conditions:
Note that the guidance referenced in this syllabus is subject to change based on
recommendations from the Georgia Department of Public Health, the University System

of Georgia, or the Governor's Office or. For the latest on UGA policy, you can visit coronavirus.uga.edu.

TENTATIVE SCHEDULE (subject to weather and changes announced in class or by email)

1) Aug. 23 – **No class** meeting, class begins on Monday, August 30, 2021

2) Aug. 30 – Introduction, syllabus review, the celestial sphere

3) Sep. 6 – Labor Day – no class

4) Sep. 13 - The celestial sphere, telescopes

5) Sep. 20 - **Quiz on the celestial sphere** – Learning the night sky

6) Sep. 27 - Observational session or indoor exercise

7) Oct. 4 - Observational session or indoor exercise

8) Oct. 11 - Observational session or indoor exercise

9) Oct. 18 - Observational session or indoor exercise

Monday, October 25 – withdrawal deadline

10) Oct. 25 - Observational session or indoor exercise

11) Nov. 1 – Observational session or indoor exercise

12) Nov. 8 - **Quiz on the night sky** - Observational session or indoor exercise

13) Nov. 15 - Observational session or indoor exercise

14) Nov. 22 - Observational session or indoor exercise

15) Nov. 29 – Observational session or indoor exercise

16) Dec. 6 – **Lab Final –** last day of class