AST 1022L: Astronomy Laboratory

Spring 2020

Section 25431: Tuesday, 12:50 to 2:45 PM (Periods 6-7)

Section 25432: Friday, 11:45 AM to 1:40 PM (Periods 5-6)

Instructor: Theo Richardson

Email: richardson.t@ufl.edu

Phone: (352) 294-1854

(office phone, unlikely to answer but it is here)

Office: Bryant Space Science Center 315

Office Hours: W/R, 11 AM-12 PM or by appointment

Teaching Lab Director: Dr. Francisco Reyes

12 Bryant Space Science Center
freyes@astro.ufl.edu
(352) 294-1885

Course objectives and goals:

AST-1022L Astronomy Laboratory counts for one credit of Physical Science (P) towards the General Education requirement. Its objective is to demonstrate how the scientific method is applied within the field of astronomy. Students will experience the process of making astronomical observations, quantitatively analyzing those observations, extracting information about astronomical bodies, and understanding how they work. In addition, students will learn to summarize their experience in a way that will communicate the objectives, procedures, results, and conclusions of their experiments to readers not necessarily familiar with the details.

General Education Student Learning Outcomes (SLOs):

- Demonstrate competence in the terminology, concepts, methodologies, and theories used within astronomy.
- Communicate knowledge, ideas, and reasoning clearly and effectively in written or oral forms appropriate to astronomy.
- Analyze information carefully and logically from multiple perspectives, using discipline-specific methods, and develop reasoned solutions to problems.

Physical science (P) statement:

Physical Science courses provide instruction in the basic concepts, theories, and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science, and the environment, along with the relevant processes that govern physical systems. Students will formulate empirically testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

Course meeting times and locations:

AST 1022L Astronomy Laboratory consists of **eleven daytime labs** and **three night labs**. Daytime labs will be conducted during the scheduled class period in room **7** of the **Bryant Space Science Center**. The night labs will take place on **Thursdays** at the **Campus Teaching Observatory** (CTO) on nights to be scheduled during the semester. You may want to find it before the first night lab; absences due to not being able to find the CTO will not be excused. The location can be found at https://www.astro.ufl.edu/research/telescopes/campus-teaching-observatory along with some additional information about the facility.

Night labs depend on the weather. If the weather turns out to be too bad for a night lab I will send an email to the class canceling the lab no later than 7 pm on the night of the lab. If you do not get a message, you should come to the CTO at the scheduled time unless there is heavy rain, lightning, a thunderstorm, a tornado watch/warning, etc., in which case the observatory will be closed. If you need assistance finding your way, call the observatory phone number **(352) 392-1016** before the start of the session. Once the session starts, the instructors will be busy teaching the session and may not answer the phone.

Lab requirements:

Students will need to bring the following items to all labs:

- **Lab manual:** Hands on Astronomy Laboratory Manual ($21.27) is available at Target Copy Center, at 1412 W. University Avenue.
- **Writing utensils** and **extra paper**
- Simple **scientific calculator**
- **Basic ruler** (inches and centimeters)

In addition, it may be useful to bring a **flashlight**, preferably with a **red filter** as a result of light pollution concerns, to the night sessions at CTO. I also strongly recommend bringing **insect repellent** to the night labs (there are lots of mosquitoes...)

While there is no food or drink permitted in the laboratory, water is fine in a spill-proof container. Cell phones must not be audible and students should refrain from texting or other heavy usage.

Attendance:

Attendance is mandatory for all labs and will be recorded for each session. You will not receive credit for labs if you do not participate in data collection. If you miss the introduction to an experiment I reserve the right to disallow your participation in the lab, in which case you will receive no credit for that day. Please contact me before class if you will be absent.

Class work:

Quizzes: For each of the daytime labs you will be expected to have prepared for the day's experiment before you come to class, as this helps to make sure everyone has the appropriate background to understand the point of each lab. Moreover, there will be a short quiz at the beginning of each class (except for the first day) with questions cribbed from the lab notebook's objective, introduction and procedure text; it's therefore directly to your advantage to read through the labs carefully before class. If you are late to class, you will not be given extra time to work on the quiz.

Labs and Assignments: After the introduction and quiz, you will perform the experiment. In most cases you will work with a partner or in a small group; however, each student must record their own data. Before you leave, you must have your data sheet initialed by me.

You will be assigned either a worksheet or a formal lab report to complete for each lab. There will be **seven worksheets**, **one formal lab report** and **two double formal lab reports**. You will have one week to complete the assignment, and it will be due at the beginning of class on the due date. If you are present for the data collection but do not turn in the assigned lab work, you will not receive credit for that assignment.

Night Labs: There will be **three night labs** held during the semester outside of the regular class time. Attendance to these labs is also mandatory**,** and the worksheets that accompany the lab will account for **12%** of your grade, so don't forget about these. To be clear, during weeks we hold night labs, the scheduled day lab will still take place. Night labs do not replace the weekly day labs.

Additional Homework: There will be one homework assignment the first week of class to read Appendix A of the lab manual and complete the problems assigned by the instructor. This homework will be turned in at the beginning of the second class.

Late and make-up work:

Late Work Policy: Lab reports or worksheets that are turned in after the beginning of class on the due date will be penalized **10%** off. If they are turned in the day after the due date, they will be marked **50%** off. Labs turned in more than one day late will not receive any credit. You must turn late work in to the astronomy department's office in **Bryant 211** directly to a staff member, which means it must come in while the office is open between 8 am and 4 pm on weekdays. Reports left on my desk or slid under my office door will not be graded.

Make-up Labs: If you miss class unexpectedly, please contact me as soon as possible to discuss turning in the previous week's lab. Make-up labs are only an option in special cases (religious holiday, jury duty, military obligation, university-sponsored activity, serious health problems, or emergencies) and require official documentation. If you do not have a legitimate reason for missing the lab, you will not receive credit for that lab. Please contact me about making up a lab as soon as you know you will miss it.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Grading:

Course Weighting:

Worksheets (and answers to the questions) (7)	42%
Formal lab reports (1)	10%
Double formal lab reports (2)	24%
Night lab reports (3)	12%
Quizzes	6%
Answers to problems in Appendix A	2%
Participation	4%

Total	100%

Letter grades will then be assigned by the following scale (%):

A = 90+	B- = 77–79	D+ = 64–66
A- = 87–89	C+ = 74–76	D = 60–63
B+ = 84–86	C = 70–73	D- = 57–59
B = 80–83	C- = 67–69	E = 56-

A minimum grade of **C** is required for a general education credit.

Information about current university policy for assigning grade points can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Incompletes: The College of Liberal Arts and Sciences has a strict policy on incomplete grades. No incomplete grades will be assigned to this course. If at any time you begin to feel you might not be able to complete this course for any reason, please don't wait to discuss the matter with myself and/or your academic advisor. The sooner you act the more options you will have available.

Academic integrity:

Group work is encouraged and often necessary during the completion of the labs in this course. Working with others outside of the lab is also acceptable; however, each student must record their data and complete their lab report on their own, and do their own writing. All UF students are bound to abide by the university's honor code; more information is at https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code and surrounding links. Any violation will mean zero points for the experiment and may be reported to Student Conduct and Conflict Resolution.

Cheating will not be tolerated in this course. This includes: plagiarizing other students' lab reports, copying or fabricating data for an experiment for which you were absent, plagiarizing contextual information from the lab manual, or copying/paraphrasing online resources without proper citations. If you are unsure whether or not you are violating the honor code, discuss it with me while you still have time to revise your work.

Accommodations:

Students with disabilities requesting accommodations should first register with the **Disability Resource Center** (DRC, **(352) 392-8565**, www.dso.ufl.edu/drc) by providing appropriate documentation. The DRC is located at **Reid Hall 001**. Once registered, students will receive a letter which must be presented to the instructor when requesting accommodations, at which point I will be happy to work with you to provide them. Students with disabilities should follow this procedure as early as possible in the semester.

Course evaluations:

Students are encouraged to provide feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on writing professional and respectful feedback is available at https://gatorevals.aa.ufl.edu/students. Students will be notified when the evaluation period opens and can complete evaluations via the email they receive from GatorEvals, from the course Canvas menu under GatorEvals, or at https://ufl.bluera.com/ufl. Summaries of results are available to students at https://gatorevals.aa.ufl.edu/public-results.

University resources for counseling and emergencies:

UF provides counseling and mental health services for enrolled students; pointers to many of these are at https://counseling.ufl.edu/services, a host of more specific resources can be found at https://counseling.ufl.edu/resources, and the university's **Counseling and Wellness Center** is also reachable at **(352) 392-1575**. The **University Police Department** can be reached at **(352) 392-1111**; for emergencies, dial **911**.