

# STARS, GALAXIES, AND THE UNIVERSE

## Physics 2022 – Spring 2018

Time: 10:10 MWF Lecture Room 2

Instructor: J. R. Sowell

Office: W102 Physics Building (404) 385-1294

Office Hours: MWF 9:30 – 10:00 and “Open Door” Policy

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Web Page: <http://www.astronomy.gatech.edu>

Texts: *Astronomy Today – Volume 2* (9<sup>th</sup>), Chaisson & McMillan  
with **Mastering Astronomy**  
*The Naked-Eye Sky*, by Sowell

### COURSE POLICY

Objectives: The objective of this course is for the student to acquire a working knowledge of stellar, galactic, and extra-galactic astronomy as well as naked-eye observational phenomena.

Lectures: The lectures will not necessarily cover all of the material on which the student will be tested – the student is responsible for the material indicated by the instructor. Attendance for all lectures is strongly encouraged. Successful completion of this course will require a sustained effort on the student’s part to keep up with the material and understand the topics as they are presented. It is expected that the student will read the indicated portion of the text *prior* to the lecture. Please turn off all cell phones and laptops during the lectures.

Attendance: Each student should be aware of the regulations that are listed in the Student Handbook. The class attendance policy, which the Georgia Tech regulations say shall be at the discretion of the instructor, will be as follows: There will be no prescribed maximum number of unexcused absences for this class. However, if it is apparent that lack of attendance at class may be impairing a student’s performance in the course, the instructor may require that the student not miss more classes, under the penalty of failing the course.

Materials: The student will need a **non-programmable scientific** calculator, with trigonometric functions in particular. **Programmable calculators cannot be used for the tests.**

Class Participation: Attendance and class participation will be monitored through a series of in-class mini-quizzes and polling-type questions. Data will be collected via a Turning Technologies Device (PRS) or by a smartphone app. In order to participate, **each student is required to have either a Turning Technologies Device or a smartphone with the app.** It is the *student's* responsibility to register the device on T-Square, and then to bring it to class each day in operable condition. One may wish to carry a spare set of batteries.

Homework: The homework assignments will be administered and graded electronically through the internet-based system called **MasteringAstronomy**. This homework system is specifically designed to work hand-in-hand with your textbook. When you purchase the book, you will, at the same time, be purchasing a two-year registration for **MasteringAstronomy**. After purchasing the text, you will need to register with MA in order to activate your homework account. The **ACCESS CODE/COURSE ID** is

**MASOWELL76826**

**www.masteringastronomy.com**

Assignments will be due at 10:00am, usually before the next regular class meeting. In general, each homework assignment will cover topics from the preceding lecture. This encourages students to confront (and presumably, understand) the material in a given lecture, before attending the next. Assignments submitted after 10:00am will be accepted for an additional ~50 hours past the deadline. During this time period, the maximum possible score will decrease linearly to 0%. Thus, if one completes an assignment by 10:00am the next day, the assignment will be worth a little more than half credit.

Homework will be 10% of the course grade. It is expected that each student's submitted homework is based on an individual understanding of the relevant material. Note that this does not rule out working on homework with other students, but any "collaboration" should involve the sharing of understanding, not answers. (Further guidelines regarding collaborative work can be found in the Honor Code Guidelines.) Copying answers from peers or solution manuals is not only a violation of the Honor Code, but will not provide the level of understanding necessary to succeed on the tests. Keep in mind that 75% of your grade will be based upon your test-taking ability; do not short-change yourself by cutting corners on homework assignments.

Tests: As indicated on the attached schedule, there will be four 50-minute tests. They will be given on the dates listed and will cover the material presented since the previous test. The three highest test scores will each be weighted 15%, whereas the lowest one will have a weight of 10%, for a total of 55% of the final grade. The final exam will include material since the fourth test, but it will also have many comprehensive questions. The final exam grade will be 20% of the final grade, where 15% is the content test and 5% is identification of stars and constellations. **The total time for the final exam is exactly 2 hours.**

**If you miss a test, contact me by telephone or email as soon as possible so that arrangements can be made to take the test PRIOR to the NEXT LECTURE.** If you know in advance of a conflict, the test can usually be given prior to the scheduled time.

If you miss a test for a valid reason (i.e., you were too ill to take the test, had a serious family illness, etc.), then you must **SUBMIT A WRITTEN STATEMENT** from the Dean of Students or the Student Health Center, with supporting documentation, as to the cause of the absence to the instructor **ON THE FIRST DAY YOU RETURN TO CLASS**. If the reason is acceptable, your grade will be determined at the instructor's discretion. If you do not submit an acceptable excuse for missing a test, you will receive a "0" for that test. If you miss two tests for any reason whatsoever, you must initiate a conference with the instructor. Failure to do so will result in a "0" for the second test regardless of the reason for the absence.

**Regulations regarding cheating and general classroom dishonesty will be strictly enforced.**

Observatory Visit: Georgia Tech has an Observatory on the roof of the Physics Building. There will be several nights when it will be exclusively available for students from this class. Students must visit the Observatory at least once during the semester, but the visit can be ANY night the Observatory is open. Opening of the Observatory is not a guarantee – it is weather dependent. Do not procrastinate.

Grading: The total grade consists of (a) GT Observatory Visit (5%), (b) in-class PRS quizzes (10%), (c) homework (10%), (d) 4 one-hour tests (15+15+15+10=55% total), and (e) the final exam (5+15=20%). Also, extra credit (2%) can be obtained by following the instructor's guidelines regarding a visit to the Fernbank Observatory (see below).

Grading Scale: 90 – 100 = A; 80 – 89 = B; 70 – 79 = C; 60 – 69 = D; 0 – 59 = F  
For those taking the course **pass/fail, a C or better is considered passing.**

Extra Credit: Visiting the Fernbank Planetarium and Observatory is not mandatory, but highly encouraged. The Observatory is open on most Thursday and Friday nights. **Extra credit** can be obtained if (1) You see the planetarium show; (2) see the telescope and, if weather permitting, look through it at a celestial object, and (3) write a **typed**, one-paragraph summary of (a) the planetarium show and (b) the objects viewed with the telescope (i.e., describe their appearance). Staple to your report the Planetarium Ticket receipt, which has been SIGNED by the astronomer working there that evening. **Fernbank Observatory Visit reports are due no later than 10am on the last day of class.**

Unexpected Problems: If a snow and/or ice storm (or any other cause for the Institute to close) occurs on a day scheduled for a test, the test will be given on the first day that the class resumes. Check the web pages for information.