

Astronomy 231: Intro Observational Astronomy

Sonoma State University
Department of Physics and Astronomy
Fall 2009

General Information

Instructor: Dr. Scott A. Severson

Class Schedule:

Lecture: 6:00 – 6:50 PM Wednesday

Lab: 7:00 – 9:40 PM Wednesday

Classroom Location: Darwin 308

Office Hours: 10:00 - 11:30 AM Monday and Thursday

Office: Darwin 300L

Email: scott.severson@sonoma.edu

Phone: (707) 664-2376

Course Website:

<http://www.phys-astro.sonoma.edu/people/faculty/severson/a231>

Course WebCT site:

<https://webct6.sonoma.edu/webct/logon/306004794001>

Course Description

This is a combination one-hour lecture, three-hour laboratory course. The course covers the principles of astronomical measurement techniques with field and laboratory studies of astronomical objects. Topics include identification and classification of astronomical objects, coordinate systems, use of telescopes and techniques in imaging, photometry and spectroscopy.

General Education

This course may be used to satisfy general education requirements in category B1 or B3 and GE laboratory requirements.

Prerequisite

Previous or concurrent enrollment in ASTR 100 or equivalent.

Textbook

None required for purchase - handouts via WebCT

There will be required reading presented in the form of lab handouts, articles, and web references. These will be made available at the course WebCT site listed above.

Course Goals

- Students will learn introductory astronomical concepts by engaging in hands-on laboratories.
- Students will practice data-taking skills such as making measurements with specialized equipment and computer applications.
- Students will gain experience interpreting data through the use of mathematical tools such as tables, graphs, and equations.
- Students will practice communicating scientific results in the form of written lab reports.
- Students will gain experience working collaboratively as they share the responsibility of conducting experiments and writing up their results.

Course Structure

- Each Wednesday, we will do a different lab to demonstrate a new set of astronomical concepts.
- Lab handouts will be made available for download from the course web page by Monday of each week. Most of these handouts will include pre-lab questions that are due at the beginning of that week's lab period.
- Weekly experiments must be written up and turned in for grading by the end of the lab period. See notes below on writing up lab reports.
- Each lab team will hand in a single (combined effort) lab report for each experiment.

Policies

University Policies

There are several important University policies of which you should be aware, such as the add/drop policy; cheating and plagiarism policy, grade appeal procedures; accommodations for students with disabilities and the diversity vision statement.

Go to this URL for details:

<http://www.sonoma.edu/uaffairs/policies/studentinfo.shtml>

Lab Partners

Lab partners are assigned in this class and will change twice during the semester so that (a) you get experience working with more than one person, and (b) I get a better sense for your individual contributions to experiments and laboratory reports. You will do labs 1 – 4 with your first lab partner, labs 5 – 8 with your second lab partner, and labs 9 – 11 with your third lab partner. I will assign your first lab partner at the second class meeting (first lab).

Materials

Please bring the following to each class:

- Lab handout
- Pre-lab assignment
- Calculator
- Paper (looseleaf preferred, in a three-ring binder) and pen or pencil for handwritten laboratory notes.

Attendance

- Attendance is mandatory.
- More than 3 absences in class will result in a failing grade for the course.
- Arriving in class more than 30 min late or stepping out of class for a substantial period of time will be treated as an absence.

Grading

Relative Weighting

Pre-lab assignments *10 %*

These assignments will consist of a few questions that will help you start thinking about each lab before the class period. Turn in your assignments at the beginning of the class period. Assignments turned in late will get 50% credit.

Class Participation *25 %*

Participation will be a component of your final grade. I will note your participation in each class. Examples of good participation include coming to class prepared, listening attentively to lectures and demos, actively engaging in the labs, and working with your partner to make measurements, analyze data, and write up your results. I encourage you to ask questions in class and/or during office hours.

Lab Reports *65%*

I will hand out a guide on how to write lab reports during the first class. Please refer to this handout for specifics on what to include in these reports (and therefore what I will be looking for as I grade them). I will drop your lowest lab report grade.

Final Exam

There is no final exam for this course.

Extra Credit *up to 9%*

Extra Credit is available for attending a public talk on some current astronomical or physics topic and submitting a one-page synopsis via WebCT. The submission will be checked for originality. You may submit up to three synopses for three different talks. Each is worth up to 3% extra credit, meaning you can earn up to 9% total extra credit on your course grade. The assignments are graded on a scale from one to three based on

presenting a one-page, double-spaced, coherent and comprehensive summary of the talk. Researching and defining unclear concepts is recommended.

The [Department of Physics and Astronomy](#) will present a free public lecture in its renowned “[What Physicists Do](#)” series Mondays during the semester, from August 31st through November 23rd at 4:00 p.m. in Darwin 103. The lectures on August 31st, September 21st, 28th, October 12th, 19th, 26th, November 2nd and 9th should be of special interest to you as you study astronomy. See the following URL for details: <http://phys-astro.sonoma.edu/wpd/>. Other appropriate external work may be substituted with instructor approval.

Instructor Discretion

I reserve the right to raise your grade if exceptional effort and class participation are observed through the semester. Improvement throughout the semester is also noted.

Other Class Policies

- Questions are encouraged.
- Turn off phones and small electronics.
- Arrive to class on time.
- Try your best to attend every class.
- Read subject material before each class.
- Start and complete all assignments. Do not fall behind!
- Come to office hours with questions

Course Schedule

Week	Date	Activity	Lab Partner
1	Aug 26	Orientation	-
2	Sep 02	Lab 1	1
3	Sep 09	Lab 2	1
4	Sep 16	Lab 3	1
5	Sep 23	Lab 4	1
6	Sep 30	Furlough - No Class	-
7	Oct 07	Lab 5	2
8	Oct 14	Lab 6	2
9	Oct 21	Lab 7	2
10	Oct 28	Lab 8	2
11	Nov 04	Lab 9	3
12	Nov 11	Veteran's Day - No Class	-
13	Nov 18	Lab 10	3
14	Nov 25	Thanksgiving - No Class	-
15	Dec 02	Lab 11	3
16	Dec 09	Makeup Lab	-
17	Dec 16	Finals Week - No Final	-

CSU Employee Furloughs – Impact on Classes

This year across this campus and around the CSU system some class days will be cancelled because of furloughs. A furlough is mandatory un-paid time off; faculty and staff on each CSU campus are being “furloughed” two days per month.

These cancelled class days are marked on your syllabus above. It is important to recognize that these days off are not holidays. Instead, they are concrete examples of how massive state budget cuts have consequences for you as students and for me as a faculty member.

The CSU has suffered chronic underfunding for at least 10 years. This year the budget cuts are the worst in the history of our university system — \$584 million or 20% of our budget.

The CSU administration is attempting to deal with these cuts with increases in your student fees (32%), eliminations of your classes, and lay-offs of faculty and other university employees.

In addition to paying higher fees, you will be affected by reduced services and classes. The library will have shorter hours. Many campus support services will be decreased or eliminated. It will be more difficult to get signatures to meet deadlines. Classes you need may have been cut from the class schedule or are full.

If you would like to take action or simply learn more, I recommend you contact the California Faculty Association located on campus in Stevenson 3004-A.