

Astronomy 4100 / 6100
Spring 2014

Classroom: Aderhold 203
Meeting: Mon & Wed, 1:30-2:45pm
Office Hours: By Appointment

Instructor: Professor Misty Bentz
Email: bentz@astro.gsu.edu
Office: 25 Park Place, Office 610

Course Summary:

This class will focus on the knowledge and techniques required to become a successful observational astronomer. We will mostly focus on techniques applicable to optical astronomy, but some time will also be devoted to other wavelengths of the electromagnetic spectrum. This class heavily emphasizes hands-on learning and direct applications.

Textbook:

Measuring the Universe, by George Rieke
(\$65.82 on Amazon.com, \$56.25 used/\$60 digital at GSU bookstore)
Supplementary readings will be provided throughout the course.

Expectations:

Your attendance for all class meetings is expected. Please inform me ahead of time if you will miss class for any reason. You are expected to arrive on time and prepared for class. You can expect that I will never keep you past the scheduled class time.

It is expected that you will complete all assigned readings and work on time, and that you will take the midterm and participate in the proposal reviews on the scheduled dates at the scheduled times. The midterm may be taken early only under exceptional circumstances at the discretion of the instructor. The proposal review cannot be rescheduled --- this is a group activity and can only be accomplished at the scheduled time.

Assignments are always due at the beginning of class. Late work will be penalized 20% for each 24-hour period after the due date/time. Exceptions will only be given under exceptional circumstances at the discretion of the instructor.

Course Components and Grading:

This course is comprised of several components. Grades will be determined according to the following criteria:

Homework	20%	$90.0\% \leq A$	(A- < 92.0%, A+ > 98.0%)
Midterm Exam	20%	$80.0\% \leq B \leq 89.9\%$	(B- < 82.0%, B+ > 88.0%)
Observing and Lab	20%	$70.0\% \leq C \leq 79.9\%$	(C- < 72.0%, C+ > 78.0%)
Presentation	20%	$60.0\% \leq D \leq 69.9\%$	
Proposal and Review	20%	$F \leq 59.9\%$	

There is a final project for this class in lieu of a final exam. Students will write observing proposals and participate in peer-review of those proposals, similar to the reviews undertaken by Telescope Allocation Committees. Students enrolled in 6100 will meet during the last scheduled class period (4/28) to review proposals. Students enrolled in 4100 will meet during the University's scheduled final exam period (1:30pm Wed 4/30) to review proposals. More details will be given in the second half of the semester.

Astronomy 4100 / 6100
Spring 2014

This schedule is tentative and subject to modification.

Week	Monday	Wednesday
1	1/13: <i>Dr. Bentz away</i> , No Class	1/15: <i>Dr. Bentz away</i> , No Class
2	1/20: <i>MLK Jr Day</i> , No Class	1/22: HW 1 Due , Telescopes
3	1/27: Telescopes	1/29: Detector Basics, CCDs
4	2/3: HW 2 Due , CCDs	2/5: Optical system characteristics
5	2/10: Magnitudes	2/12: Filters, colors, zeropoints
6	2/17: HW 3 Due , Uncertainties	2/19: Signal-to-noise
7	2/24: Signal-to-noise	2/26: HW 4 Due , Data reduction basics
8	3/3: Atmospheric effects & weather	3/5: Spectroscopy
9	3/10: Spectroscopy	3/12: HW 5 Due, Midterm
10	3/17: <i>Spring Break</i> , No Class	3/19: <i>Spring Break</i> , No Class
11	3/24: Student Presentations	3/26: Student Presentations
12	3/31: Student Presentations	4/2: Student Presentations
13	4/7: Lab Work	4/9: Lab Work
14	4/14: Labs Due , Interferometry	4/16: Adaptive Optics
15	4/21: Dark Matter Detection (?)	4/23: Proposals Due , Gravitational Radiation(?)
16	4/28: 6100 TAC (last scheduled class)	4/30: 4100 TAC (1:30, final exam period)

Assignments are always due at the **beginning** of class on the scheduled day. The late period begins immediately after an assignment has been collected.

Additional course materials, including this syllabus, homework assignments, and supplemental reading, can be found at: <http://www.chara.gsu.edu/~bentz/astr.4100.6100.html>