

Astronomy 162 – Introduction to Stars, Galaxies & the Universe

Winter Quarter 2007 Syllabus

Lectures: MTWRF, 9:00-9:48 am, Orton Hall 110

Professor: Jennifer Johnson

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Office Hours: TTh 11:00 am-12:30 pm, or by appointment

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TA: Brian Lacki

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Office Hours: MWF 2:00-3:00 p.m., or by appointment

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Recommended Textbook: *Universe* 7th Edition, by Roger A. Freedman & William J. Kauffmann

Course Web Page: www.astronomy.ohio-state.edu/~jaj/Ast162

Course Objectives

Astronomy 162 is a General Education Curriculum (GEC) Physical Science course in the Natural Science category. The goals for this course include:

- understanding the theories and methods of modern astrophysics, in particular what we know about stars, galaxies and the Universe and how these ideas have been developed and tested.
- investigating the relationship between science and technology
- exploring the effects of astronomical objects on the environment on Earth

Learning Objectives:

- To investigate the basic facts, principles, theories, and methods of modern science as practiced in astrophysics
- To learn important events in the history of astrophysics, particularly the discovery of the size and age of the Universe and our place within it.
- To explain the role of modern technology in the investigation of astrophysical phenomena.

Contacting Your Instructors

You are encouraged to bring questions and concerns to your instructors outside of class time. The contact information for Professor Johnson and the teaching assistant, Brian Lacki, is at the top of the page. The fastest response time will come from attending office hours. I will make every effort to respond promptly to e-mail. However, there may be several hours delay in responding, so this method is not recommended for urgent questions the hour before an exam. Please include “Astro 162” in your subject heading to avoid being ignored as spam.

Homework Assignments

There will be four (4) Homework Assignments, each consisting of a short set of multiple-choice questions. The questions are open-book, open-notes, open-discussion (but copying is not allowed), which you will answer using bubble sheets returned at the beginning of class on the due date. In

addition, there will be an extra credit word problem on each problem set (see below). Collectively the homework will count for 15% of your grade. These are not just practice exams, but instead are an opportunity to ask somewhat more challenging questions than I can on the exams. The lowest homework grade will be dropped.

No late homework will be accepted, except for legitimate, documented emergencies.

In-Class Exams

There will be four (4) in-class quizzes, scheduled for the following days:

Quiz 1: Thursday, January 18

Quiz 2: Thursday, February 1

Quiz 3: Thursday, February 15

Quiz 4: Friday, March 2

The quizzes will be held at the normal class time.

The quizzes will cover the material in the lectures and readings since the previous quiz. The quizzes are **closed-book, closed-notes multiple-choice** tests. I will drop your lowest quiz grade when calculating your course grade.

Makeup quizzes are only offered for legitimate, documentable emergencies. Quizzes may be taken in advance if you are going to be absent on the day of the quiz. Makeups must be completed within five days of the quiz.

Final Exam

The final exam will be held **Monday, March 12** from 7:30-9:18 am. Attendance at the Final Exam is mandatory. The final will be **comprehensive**, covering all lectures, and has the same multiple-choice format as the in-class midterms, only longer. It is worth **40%** of your grade.

No makeup final will be offered. Persons who miss the final exam will be given an incomplete (I) with an alternative grade equal to getting a zero on the final, and have to make it up during Spring Quarter 2006 to avoid the alternative grade.

In keeping with official University policy, early finals will **not** be available for those persons who wish to depart early for spring break. Please plan ahead and make your travel plans accordingly.

Extra Credit

Extra credit will awarded for answering the Extra Credit Problem on the homework (up to 1 point per problem, partial credit will be awarded) or participation in "Roof Nights" (observing sessions, see notes at the end). The extra credit scale is set up such that any student who gets all the available credit is guaranteed to raise his or her grade by at least one increment (for example, from B to B+) unless his or her exam average is far below the cutoff for passing the course (or if he or she is already doing A work).

Grading Policy

- The homeworks collectively account for **15%** of your grade.
- Together, the 3 highest scoring (out of 4) quizzes will account for **45%** of your grade.
- The final exam accounts for **40%** of your grade, and must be taken by all students.
- All grading for the quizzes and the final exam is done on a standard C+ curve.
- The homework scores are not curved. It is hoped that all students will exceed a C+ score on the homework.

Lectures & Readings

The lectures are your primary resource for this course. The textbook is only used as a secondary reference from which I will suggest related readings. We will not (and cannot) cover all of the topics in the second half of the book during a 10-week course. Lecture Notes for each class will be available as of the night before each Lecture. These notes include the suggested readings, bullet points from the slides, some diagrams and references to figures. They are intended to help with your note-taking and many students find it helpful to print them out before class and bring them to class. *They are not a substitute for the lectures.*

Related Readings in *Universe*

Because introductory astronomy textbooks designed for non-majors are rarely organized exactly the same as our courses, we will not strictly follow the order of topics in the book. You can expect to jump around some as the course progresses. As such, instead of specific reading assignments, each section of the course has related reading suggestions from the text. Not all topics in this course are covered by the book, and similarly not all topics covered in the book will be discussed in class. You are only responsible for the contents of my lectures.

Students with Disabilities

Any student who feels that he or she may need an accommodation based on the impact of a disability should contact Professor Johnson to discuss their specific needs. We will rely on the Office of Disability Services at OSU to verify the need for accommodation and to help develop the appropriate strategies. Students with disabilities who have not previously contacted ODS are encouraged to do so, by visiting the ODS website (www.ods.ohio-state.edu) and requesting an appointment. Please take care of this well in advance of the quizzes, as processing the paperwork takes time.

Academic Misconduct

All OSU professors are required to report suspected cases of academic misconduct to the Committee on Academic Misconduct. See the University's Code of Student Conduct for details. The most common forms of misconduct in classes are copying from another student's exam or homework assignment. All cases will be investigated following University guidelines.

Classroom Etiquette

To help establish and maintain a courteous, distraction-free learning environment in our classroom, I ask that all students please observe the following basic rules of behavior during lectures and exams:

Use of cell phones and pagers is prohibited.

This includes using cell phones for instant messaging, email, web, pictures, etc. When in class, all cell phones and pagers must be **turned off** (i.e., not in a standby or "silent ring" mode).

Use of Wireless Laptops or other networked devices is prohibited.

Surfing the web, instant messaging, reading email or typing on a keyboard during class is very distracting to those around you. When in class, all laptop computers and other networked devices (e.g., PDAs, Blackberries, etc.) must be turned off and put away. The only exceptions are approved devices for enhancing sound or vision for the hearing/vision impaired.

Please do not start packing up until class is completely over

Nothing is more rude or distracting than the noise of notebooks closing and jackets and backpacks rustling while the professor is trying to finish up. I'll be very clear when we're done, and I work very hard to stay on time, so please wait until I get to the end.

If you come late or have to leave early, please sit near the back of the room.

This will make your late arrival or early departure less disruptive for your fellow students.

No conversing during lectures.

Please respect the wishes of your fellow students to listen to the lecture, and do not carry on conversations during class.

Your cooperation in these observing these rules is greatly appreciated.

Roof Nights

On Roof nights, the telescopes on the roof of Smith Lab will be opened for you to look at the sky for yourself. These will take place once a week in the evenings, weather permitting. The Roof Night schedule will be available soon at www.astronomy.ohio-state.edu/~headta/roof/. There will be a sign-up sheet for this class at each Roof Night. Attendance is worth 1 extra credit point. This is a one-time credit—you may attend Roof Night as often as you wish, but only once for credit.

Tips on Doing Well in this Course

Attend lectures The lecture notes provide an outline, but they are not a substitute for attending lecture. Lectures also indicate what material I consider to be the most important as well as questions to test your comprehension/retention of material. Experience from previous classes shows that students who regularly attend class earn a full letter grade higher on average.

Ask questions during lectures Thinking about the information being presented is an important part of this course. If it is not making sense, ask! You are probably not the only one confused.

Answer questions during lectures Mentally double-check that you are understanding the material by answering questions posed in class (at least for yourself, though out-loud answers are always appreciated).

Ensure you get a high grade on your homework By consulting with me, Brian, your roommate, the astronomy major across the hall, etc. you can guarantee that you get an A+ for 15% of your grade. That's equivalent to one in-class quiz. Conversely, failing to do any homework will result in a zero for 15% of your grade. The homework assignments are also helpful in studying for the quizzes, because they identify concepts that I think are very important.

Pick up quizzes and homeworks in a timely manner Don't be surprised by your final grade! Make sure you are keeping track of how well you are doing. Merely turning homework does not mean that you are doing well. Also, since the quizzes will be very similar in the *kinds* of questions they contain, adapting your study patterns based on how you do on the previous quizzes may be helpful.

Do not depend on the curve to save you On average, the class does better and better on quizzes as the quarter progresses. Therefore, if you get the same percentage of answers correct for each quiz, you could find your grade slipping from a A- to B-, for example, as the curve moves higher and higher. Do not depend on your fellow students performing poorly to give you a high grade.