

Astronomy 201: COSMOLOGY

Professor: Dr. Jill Bechtold
TA: Mr. Stéphane Herbert-Fort

Lectures: TTh 9:30-10:45am
Steward Observatory, N210

CLASS WEB PAGE: <http://boojum.as.arizona.edu/~jill/astro201.html>

DESCRIPTION: Extragalactic astronomy and cosmology are among the fastest developing fields in astronomy. This course presents cosmology as a modern, quantitative science. It describes what we know about galaxies, the large-scale structure of the Universe and the beginnings and evolution of the Universe. (3 units)

PREREQUISITES: Two courses from Tier One, Natural Sciences (NATS 101, 102, 104). Math at the High School algebra level will be used, so the student should be familiar with basic algebra, trigonometry, and fractional powers. For a review of math concepts required for the course, see the "Math Toolkit" on the class web page.

TEXTS and Other Readings:

1. *Your Cosmic Context: An Introduction to Modern Cosmology*, by Todd Duncan and Craig Tyler. 2009. Paperback, required.
2. Many lectures and labs will be about special topics not covered in the textbook. Lecture notes will be available through the class web page.
3. Images and animations shown in the lectures will be posted on the class web site.

GRADES AND COURSE REQUIREMENTS:

There will be 3 Midterm Exams. The lowest grade will be dropped. There will therefore be **NO MAKEUP** exams. If you miss more than one midterm exam, you will receive a zero for the second and subsequent exams missed. Communication with the instructor is encouraged -- let us know if you are missing class or falling behind for a valid reason, and we will try to help.

Grading will be as follows:

- 20% : Homework and Class Participation**
- 10% : Telescope Lab**
- 35% : Midterms**
- 35% : Final**

Although attendance will not be routinely taken, experience shows that the A students are those who attend all classes. Although we will be following the textbook, don't think that reading the textbook and web page alone will be sufficient for learning the material. There is significantly more information in this course than in any high school science course; the lectures will enable you to synthesize and LEARN the material. Technical

information can often be terse, and therefore is deceptively simple: we may be able to state in a single sentence the topic of a particular lecture, but most students will need the 90 minute explanation to understand that sentence.

There will be class activities for which you must attend class (e.g. the 10 micron camera lab), and for which we will not be able to schedule make-ups. If you have a valid reason to miss class at any time, please email the professor IN ADVANCE.

To encourage questions and discussions in class, I will hand out cards to students asking questions or volunteering answers in class. Write your name on these and hand them in to me or the TA at the end of class to get "participation points."

CLASSROOM POLICIES: From the University of Arizona policy on disruptive classroom behavior:

"The University seeks to promote a teaching and learning environment free from material and substantial classroom disruptions. Faculty members and teaching staff have the authority and responsibility to effectively manage their classroom environments."

Here are the rules for our class:

1. **No Laptops in Class.** Laptops and computers may NOT be used in class.
2. **Cell phones must be turned off** while in class as ring-tones can be highly disruptive. Texting during class is also disruptive and not allowed.
3. Do not leave trash in the classroom.
4. Arrive on time, and plan on staying through the end of class. We will make sure that class ends on time and we expect you to give us your full attention to the class until the end. If you must arrive late or leave early, please inform Prof. Bechtold in advance.
5. Talking to another student, reading the newspaper, or other disruptive behavior is not allowed.

CONTACTING THE PROFESSOR and TA:

Prof. Bechtold's office is in Steward Observatory, Room 328 (second floor), phone 621-6533. Mr. Herbert-Fort's office is in Steward Observatory, Room 309 (second floor), phone 621-0086.

Office hours are immediately after class, or by appointment. When not in the office, we are often in email contact.

Arranging appointments via email is recommended: bechtold@email.arizona.edu or s.herbertfort@gmail.com.

ACADEMIC INTEGRITY:

We believe very strongly in upholding the Code of Academic Integrity as established by the Dean of Students of this University. Copies of this code are available from the Dean of Students Office. It states that "The guiding principle of academic integrity is that a student's submitted work must be the student's own... Conduct prohibited by the Code consists of all forms of academic dishonesty, including, but not limited to: cheating, fabrication, facilitating academic dishonesty, and plagiarism..."

modifying any academic work for the purpose of obtaining additional credit after such work has been submitted... and attempting to commit an act prohibited by this Code."

Examples of violation of the Code of Academic Integrity include: having another student take an exam for you; changing an answer on a scantron sheet after it has been graded and returned, and claiming the machine made an error; copying lab data or reports from another student; allowing another student to copy your lab data or report; copying lab data or reports from students in other classes, or previous classes; turning in work that is not your own; using unauthorized notes or other aids during exams; plagiarizing a term paper or lab report in total or in part.

You are allowed to discuss assignments with other students, but the written work you hand in must be your own. Copying, including cut-and-paste on your computer, or consulting the graded work of another student, constitutes cheating. The best way to avoid a violation of academic integrity is to write up your homework *by yourself*.

Any violation of the code will be dealt with harshly, since all violations diminish the integrity of this class as a whole and the University. If you violate the code in any part of this class or lab, you will receive an E for the course, and your name will be submitted to the Dean of Students so that a notation will be attached to your permanent record that you cheated in this course. Note that this policy is harsher than what is typical in other courses in the College of Science; however, the department chair and Deans have always supported my actions in cases of code violations.

More information on the UA academic code of conduct can be found at <http://deanofstudents.arizona.edu/academicintegrity/>

LECTURE AND EXAM SCHEDULE:

Lecture topics and reading assignments will be posted on the web page as we go along. Key concepts for each lecture will be posted on the web page.

EXAMS will be on the day scheduled. We have made an effort to avoid religious holidays, but if you must miss an exam for religious reasons please let Prof. Bechtold know as soon as possible. If you qualify for disability services, please submit the paperwork to Prof. Bechtold as early as possible.

MIDTERMS: in class. Sample test questions will be handed out in class. Dates will be announced in class, and posted on the web site.

FINAL EXAM: Thursday, December 17, 2009. 8am to 10am, Steward Observatory N210.

The final must be given at this time, there are no exceptions.