

# ASTRONOMY 309R – SPRING 2012

## GALAXIES, QUASARS, AND THE UNIVERSE

Unique No. 47655

Course Web Page:

<http://www.as.utexas.edu/astrometry/education/spring12/komatsu/309r.html>

### **Instructor**

Dr. Eiichiro Komatsu

Office: RLM 16.210

Hours: TTh 5-6; Other times by appointment

Phone: 471-1483

Email: [komatsu@astro.as.utexas.edu](mailto:komatsu@astro.as.utexas.edu)

### **Teaching Assistant**

Chi-Ting Chiang

Office: RLM 16.208

Hours: MW 11-12; Other times by appointment

Phone: 471-2785

Email: [chiang@astro.as.utexas.edu](mailto:chiang@astro.as.utexas.edu)

## **COURSE OBJECTIVES**

This course provides an overview of modern cosmology. We will meet to discuss the expansion of the universe, redshifts, scientific models of the universe, cosmic microwave background, neutrinos, origin of elements in the universe, the early universe, cosmic inflation, as well as dark matter and energy. You will also be introduced to Einstein's special and general theory of relativity and their application to black holes.

### **PREREQUISITES**

AST301, 302, or 303, or an equivalent descriptive introduction to astronomy of one semester or more.

### **TEXTBOOK**

*YOUR COSMIC CONTEXT*

Author: Todd Duncan and Craig Tyler

Publisher: Pearson Addison-Wesley

## **CLASS**

- Class meets at PAI 3.02 on TTh 9:30-11

## **EXAMS**

- There will be no exams.

## HOMEWORK

- There will be **12 homework assignments** in the form of crossword puzzles given at the end of each chapter from Chapter 1 through Chapter 12 of the textbook, “*Your Cosmic Context*.”
- Please make sure to write your answers in a legible form. No matter how accurate your answers might be, you do not get credits if we cannot read them! When you turn in your homework, **please put a cover sheet on the front page with your name, and staple it together with your work.**

## GRADING

- The course grade will be evaluated on the basis of homework assignments and attendance. **The homework contributes to 50%** of the final grade, and **class attendance contributes to 50%** of the final grade.
- The following grading scale will be used: **85+=A; 75-84=B; 65-74=C; 55-64=D**. Any average below 55 is failing.

## CLASS ATTENDANCE

- I will check your attendance by asking you to sign in a class-attendance sheet at every class. The class attendance will be counted towards the final grade, as described above. Notice that a large weight (50% of the final grade) will be given to the class attendance – if you miss one class it can damage your grade much more than you might think!
- Please sit on the front seats – do not sit in the back! I will often use chalkboard, and the lecture room is too large for you to read what I write on the chalkboard if you sit far in the back. Also, please let me know if you cannot read things on the chalkboard.

## CLASS PARTICIPATION

- This course will be based on discussions, rather than traditional lectures.
- I intend to make classes as interactive as possible. I am in class not only to teach you the materials covered in the book, but also answer your questions and make sure that you understand what is being taught. Please participate in class actively. It will benefit all of us.
- Feel free to ask questions during or after class. Sometimes I do not notice that you are raising your hand, so please call my name when I do not seem to recognize you.

## **BASIC MANNERS IN CLASS – IMPORTANT!!**

- Please do not leave the classroom (PAI 3.02) until lecture ends, unless you have valid excuses. Let the lecturer or TA know **before** class begins if you have to leave the classroom early.
- Do not read any newspapers or magazines.
- Do not read any books that are unrelated to the course.
- Do not use your mobile phone/smart phone for **any purposes**. Put your phone away during the lecture – **do not touch it until the end of class**. If you feel unrest because you have not checked your phone for whatever reasons (emails; facebook; twitter; etc) for merely 90 minutes, realize that you are addicted to internet. Go get treated for your addiction.
- You may use your laptop to take notes, but **absolutely turn off wireless internet connection**. Do not ever use it for computer games, facebook, twitter, web surfing, emails, chat, or any other unrelated things during the lecture. It's easy to tell if you are using laptops for note-taking or other unrelated things, so be aware – we will penalize your grade if we find that you are just playing with your laptop. If you feel unrest because you are not connected to internet, well, you are addicted, so go get treated for your addiction.
- If any of these bad behaviors are identified from you during the class, your grade will be severely penalized.