ASTR 115: Introduction to Astronomy

Fall 2014

- Professor: Stephen Kane
- Class times: Tuesday, 11:00am-12:15am; Thursday, 11:00am-12:15am
- Class location: Science 201
- Text Book: The Essential Cosmic Perspective, 7th edition
- Office: TH 309
- Office hours: Wednesdays, 2:00pm-4:00pm
- Phone: 415-338-2451
- Email: `skane@sfsu.edu` (write ASTR 115 in subject)
- Course website: `http://physics.sfsu.edu/~skane/teaching/a115/`

Course description:

This is an introductory astronomy class for both science and non-science majors. Topics covered include: our place in the universe, the Solar System, the life and death of stars, galaxies, cosmology, extra-solar planets, and extraterrestrial life. Astronomy is a vibrant and dynamic subject and we will discuss the exciting astronomical discoveries which frequently make news headlines.

The course will make use of basic algebra as a tool to help us understand the size and scope of the universe. Calculators may be used for computations. Advanced mathematics will not be used. One goal of the course is to enable the student to become comfortable thinking critically, and to feel empowered to solve problems applying their own abilities. It is not assumed that the student has any previous knowledge of astronomy, so questions of all kinds are strongly encouraged.

Requirements and Textbook:

- **Attendence:** Attendance is required for every lecture. Exams may contain questions covered in lectures but not elsewhere.
- **Textbook:** The textbook for the course is "The Essential Cosmic Perspective" 7th edition by Bennett et al. These are available both used and new from the SFSU bookstore.
- **Mastering Astronomy:** All homework must be completed online at the Mastering Astronomy site, `http://pearsonmastering.com`. Under Register, click the "Students" button. If you purchased an access card bundled with your textbook, enter the code on the card. If you bought a used book or a book that did not come with an access card, you can also purchase access directly from the registration page. To join the course, you will need to enter your SFSU Student ID number and the course ID: kane86802.

- **Electronic Devices:** In general, the use of electronic devices such as laptops, tablets, and cellphones is not allowed in class. Students are free to purchase the electronic versions of the textbook, but keep in mind that this may mean they cannot be viewed during class.

Course Assessment:

- **Homework (40%):** Homework will be completed online using the Mastering Astronomy website. The homeworks will be approximately every week due on Thursday evening. The first homework is designed to help you become familiar with the Mastering Astronomy interface.
- **Mid-Term Exams (30%):** There will be two mid-term exams, each worth 15%. The first mid-term will cover the first third of the course material and the second will cover the second third of the course material. All exams will be closed book and closed notes, and primarily multiple-choice questions. You will need a #2 pencil and an 882-E Scantron form for each exam, and you are allowed a calculator. Exam dates are listed below in the "Important Dates" section, please take note and arrive on time. If you arrive after someone else has finished the exam, you may not take that exam.
- **Final Exam (45%):** The final exam consists of three parts: each worth 15% and covering one third of the course material. The lowest score from the two mid-terms and the three parts of the final exam will be dropped. Thus the total for the mid-terms and the final exam constitutes $15 + 15 + 15 + 15 = 60\%$ of the total grade.

Final grades will be assigned as follows:

A = 90% to 100%
B = 77% to 89%
C = 65% to 76%
D = 50% to 64%
F = below 50%

Important Dates:

- September 8: Last day to drop without a W
- September 22: Last day to add by exception
- September 25: **FIRST MID-TERM EXAM**
- October 30: **SECOND MID-TERM EXAM**
- November 24-28: Thanksgiving Break (No class)
- December 11: Last class meeting
- December 18: **FINAL EXAM** 10:45am-1:15pm in Science 201

Student Learning Outcomes:

After successfully completing this course, students will be able to:

1. Explain the steps in the scientific method of inquiry, which involves gathering observable, empirical and measurable evidence subject to specific principles of reasoning, and recognizing that reproducible observation of a result is necessary for a theory to be accepted as valid by the scientific community.
2. Analyze specific examples of how the scientific method has been used in the past to collect data through observation and experimentation, and to formulate, test and reformulate hypotheses about the physical universe; evaluate scientific information from a variety of sources and use that information to articulate well-reasoned responses to scientific concerns.
3. Evaluate scientific information from a variety of sources and use that information to articulate well-reasoned responses to scientific concerns.
4. Recognize the utility of alternative scientific hypotheses in the development of scientific theories, research and applications and understand how scientific evidence is used to develop hypotheses and theories.
5. Use scientific theories to explain phenomena observed in laboratory or field settings.
6. Discuss the relevance of major scientific theories and research to their lives.

Wait List:

I am maintaining a waiting list. The list begins with the official university list. Other students who would like to enroll in the course may add their names to the waiting list during class. Students on the waiting list must sign in every day. Priority will be given to students who attend lectures and complete homeworks. Students who miss any classes or homework during the first two weeks will be dropped from the class and replaced with those on the waiting list.

Useful Contacts:

- General Computer problems: SFSU Helpdesk, 338-1420 or `helpdesk@sfsu.edu`
- MasteringAstronomy help: `http://www.masteringsupport.com/MasteringAstronomy/student/topfaqs.htm`
- Tutoring and Help sessions: `http://www.sfsu.edu/~lac/astronomy.html`

Academic Integrity:

SFSU maintains a firm policy on plagiarism and cheating, which can be found in the SFSU Bulletin. The Physics and Astronomy department also maintains a set of guidelines stating specific practices that are prohibited and the procedures for handling cases of academic cheating or plagiarism. This policy can be viewed online at: `http://www.physics.sfsu.edu/policy/plagiarism.pdf`

Students with Disabilities:

Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email (`dprc@sfsu.edu`).