

This is a sample syllabus for AST1002. Students should reference the section syllabus provided at the beginning of the semester for specifics regarding assignments and grade assignments.

## AST1002 – PLANETS, STARS, AND GALAXIES

Instructor: [name]  
Email: [email]  
Office: [office location]

Phone: [phone number]  
Office Hours (in office, online, or via  
phone): [office hours]

Teaching Assistant:  
Email:

### COURSE DESCRIPTION

This course provides general acquaintance with some of the facts, concepts and scientific methods of astronomy. As a liberal study course, the goal is to help you learn some basic facts of astronomy as well as gain an appreciation of astronomy as a science, the universe, and the current scientific ideas about its history and its future.

The classes consist of lectures, movies, slides and (probably) planetarium shows. Unfortunately, our planetarium holds only 70 seats and for this reason, shows require some logistical efforts. The lectures will concentrate on the critical issues and you are expected to study the text to obtain a better understanding of astronomy. The subject matter discussed in class will generally follow the text, with additional (recent) material presented from information not available in the textbooks.

It is in your interest and you are strongly encouraged to study the text as well as attend the classes to obtain a better understanding of astronomy. We highly recommend that you read the relevant chapter **before** the corresponding lecture, in order to familiarize yourself with the material, and make the time spent in class more profitable. The lectures may cover some topics not covered by the text. We provide each week a set of homework questions from the text. This homework should be answered through the Web AstroPortal and will be automatically graded there.

### COURSE OBJECTIVES

To learn something about astronomy! The universe is a wonderful place, we are part of it, and it's a good idea to know something about where you live. You should have the background to read and understand "popular" articles about astronomy and to be able to talk about astronomy with your friends, your parents, and your children (some day, if not now!). Here are some of the questions that we will try to answer in this class:

- What causes the change of the seasons (spring, summer, fall, and winter)?
- Where were the chemical elements that make up carbon-based life forms like us made?
- What energy source fuels the Sun? How much longer will it shine?

- How can we learn important information about stars simply by looking at starlight?
- What are white-dwarfs, neutron stars, black holes, and quasars?
- What killed the dinosaurs 65 millions years ago?
- How likely is Armageddon—the collision of Earth with an asteroid?
- What evidence do we have that life is present on other celestial bodies, e.g. Mars?
- Are we alone in the universe?

By the end of the course, students will demonstrate the ability to:

- think critically and cogently about causal relationships with scientific reasoning.
- assess previous experimentation and published scientific results.
- critically examine and evaluate scientific observation, hypothesis or model construction.
- articulate a variety of issues created by the complex interactions among science, technology, and society.
- use scientific perspectives to evaluate contemporary problems facing society.

## COURSE MATERIALS

### TEXTBOOK AND WEBSITE

This course will use *one* of the following textbooks paired with one website for assignments and other coursework:

- a) Chaisson and McMillan, *Astronomy: A Beginner's Guide to the Universe*, 5<sup>th</sup> or 6<sup>th</sup> Edition
  - MasteringAstronomy (<http://www.masteringastronomy.com>)
- b) Comins and Kauffmann III, *Discovering the Universe*, 10<sup>th</sup> Edition (*LaunchPad* edition)
  - LaunchPad (<http://www.macmillanhighered.com/launchpad/dtu10e/1258453>)
- c) Palen, Kay, Smith, and Blumenthal, *Understanding Our Universe*
  - LON-CAPA (<http://loncapa.fsu.edu>)

### iCLICKER

This course requires an iClicker, which may be purchased at the FSU bookstore or online; register your iClicker at [www.iclicker.com/registration](http://www.iclicker.com/registration).

## COURSE ASSIGNMENTS AND EVALUATION

### ASSIGNMENTS

There will be weekly web-based homework assignments. Details will be found on the course website. In addition to these weekly assignments, there will be one “Current Event Blog” project focusing on the connections and interactions between contemporary society and the topics of this course. **Failure to complete this assignment will result in a final grade reduction of one letter grade.**

## QUIZZES

There will be in-class multiple-choice quizzes administered using iClickers. It is important to bring your iClicker with you to *every* class. There will be an average of one quiz per week. The lowest quiz grade will be dropped. There will be no make-up quizzes for absences.

## CLASS PARTICIPATION

The class participation points is earned by answering questions using the iClicker. Details of exactly how the point system will work will be outlined on the first day of class.

## EXAMS

There will be mid-term exams and one final exam. The second exam will be cumulative, with an emphasis on the material covered since the first exam. The final exam will be cumulative, with an emphasis on material covered since the second exam. The exams will be multiple-choice tests, and these will be more concerned with conceptual understanding than with memorization. For example, you should know what it means for the axis of a planet's rotation to be tilted, have an idea of what the tilt of the Earth's axis is and what the consequences are, and be able to discuss which planets are very different (e.g., Uranus rotates on its side, which causes dramatically different days and seasons than we have on Earth). However, I do not expect you to remember how much each planet is tilted or how far it is from the Sun (except very generally). There will be no need for equations beyond "common knowledge" (e.g., knowing that distance is equal to speed times time, or that there are 365 days in a year).

## GRADING

### GRADE CALCULATION

<b>Assignments</b> .....	<b>20%</b>
web-based assignments.....	15%
current events project.....	5%
<b>Quizzes</b> .....	<b>15%</b>
<b>Class Participation</b> .....	<b>5%</b>
<b>Exams</b> .....	<b>60%</b>
Midterm Exam 1.....	15%
Midterm Exam 2.....	15%
Final Exam.....	30%

## ATTENDANCE

You are required to attend all the lectures in class. The lectures will primarily be used to present new concepts and experimental demonstrations to illustrate key ideas. There is a *strong* correlation between lecture attendance and student performance. During each lecture 3 to 5 questions will be presented where you will be expected to answer the questions via the iClicker.

## FINAL GRADES

A	91–100%
B	81–90%

C            71–80%  
D and F      70% and below

## COURSE SCHEDULE

Week	Topics to be Covered
1	Introduction
2	Laws of Motion
3	Light and Telescopes
4	Formation of Stars
5	Terrestrial Worlds
6	Atmospheres of Terrestrial Worlds
7	The Giant Planets
8	Small Bodies of the Solar System
9	The Sun
10	Measuring the Stars
11	Low-Mass Stars
12	High-Mass Stars
13	Expansion of Space and the Realm of Galaxies
14	The Milky Way
15	Modern Cosmology

## UNIVERSITY POLICIES

### UNIVERSITY ATTENDANCE POLICY

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

### ACADEMIC HONOR POLICY

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>.)

N.B. – It is a violation of the University Honor Policy to use any iClicker other than the one registered to you in class.

### **AMERICANS WITH DISABILITIES ACT**

Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. This should be done during the first week of class. This syllabus and other class materials are available in alternative format upon request. For more information about services available to FSU students with disabilities, contact the: Student Disability Resource Center 874 Traditions Way 108 Student Services Building Florida State University Tallahassee, FL 32306-4167 (850) 644-9566 (voice) (850) 644-8504 (TDD) [sdrc@admin.fsu.edu](mailto:sdrc@admin.fsu.edu) <http://www.disabilitycenter.fsu.edu/>

### **FREE TUTORING FROM FSU**

On-campus tutoring and writing assistance is available for many courses at Florida State University. For more information, visit the Academic Center for Excellence (ACE) Tutoring Services' comprehensive list of on-campus tutoring options at <http://ace.fsu.edu/tutoring> or [tutor@fsu.edu](mailto:tutor@fsu.edu). High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

### **LIBERAL STUDIES FOR THE 21<sup>ST</sup> CENTURY**

The *Liberal Studies for the 21<sup>st</sup> Century* Program at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families, and their communities through a broad and critical engagement with the world in which they live and work. Liberal Studies thus offers a transformative experience. This course has been approved as meeting the **Liberal Studies** requirements for **Natural Sciences** and thus is designed to help you become a critical appraiser of the theories of the natural sciences and the facts that support them.

### **SYLLABUS CHANGE POLICY**

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.