

Astronomy 206 - Spring 2011

Astronomy Beyond the Solar System

Instructor	Professor Jimmy Irwin
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Office Hours	2:00 PM – 4:00 PM Monday 2:00 PM – 3:30 PM Wednesday, or by appointment
Web page	http://astronomy.ua.edu/jairwin/AY206.html
Time and Room	Lecture: MWF 10:00 AM - 11:00 AM in 310 Gallalee
Textbook	<i>Astronomy: The Cosmic Perspective: Stars, Galaxies, and Cosmology</i> , by Bennett, Donahue, Schneider, & Voit (6th Edition)

Prerequisites

MA 113 or above or equivalent

Course Description

This course provides (1) an introduction to the physical processes in stars and the evolution of stars that leads to the observed properties of stars; (2) a study of the final endpoints of stellar evolution including the nature and production of white dwarf stars, neutron stars, and black holes; (3) an introduction to the properties of galaxies, galactic dynamics, and star formation in galaxies, and (4) the cosmological model that accounts for the presently observed chemical composition of galaxies and stars, and for the presently observed dynamical structures of the Universe.

Learning Objectives

- o Students will be able to identify key concepts in the sciences, contributing to the development of a broad perspective on the human condition.
- o Students will be able to recognize and explain the scientific method, and evaluate scientific information.
- o Students will understand the relationship between light, matter, and energy in an astronomical context.
- o Students will understand the nature and evolution of stars.
- o Students will understand the nature and evolution of galaxies.

o Students will understand the nature and evolution of the Universe.

Attendance

Some lecture material will not be found in the book, so regular attendance is essential.

Extra Credit

No extra credit will be offered in this course, with the possible exception of extra credit problems on an exam.

Important Dates

The last day to register or add this course is January 20.

The last day to drop this course without a grade of "W" is January 20.

The last day to drop this course with a grade of "W" is March 23. After that date students will receive a letter grade that will appear on the student's official transcript.

Grading

Your final course grade will be determined based on the following point structure:

Exams	30%	2 exams, 15% each
Homework	25%	8-10 assignments
Quizzes	15%	3 quizzes, 5% each
Final Exam	20%	
Presentation	10%	A 15 minute presentation of a recent astronomy press release.

Timetable

Time spent on a given subject is indicative only; as the term advances, you may find we are a little ahead or behind this plan.

Date Topic

W Jan. 12 - Introduction/Overview & Pre-test

F Jan. 14 - Key Results from the 217th American Astronomical Society Meeting/Our Place in the Universe - Chapter 1

M Jan. 17 - Classes Dismissed - Martin Luther King, Jr. Day

W Jan. 19 - Making Sense of the Universe: Understanding Motion, Energy and Gravity - Chapter 4

- F Jan. 21 - Making Sense of the Universe: Understanding Motion, Energy and Gravity - Chapter 4**
- M Jan. 24 - Light and Matter: Reading Messages From the Cosmos - Chapter 5**
- W Jan. 26 - Light and Matter: Reading Messages From the Cosmos - Chapter 5**
- F. Jan. 28 - Telescopes: Portals of Discovery - Chapter 6**
- M Jan. 31 - Space and Time - Chapter S2/Quiz #1**
- W Feb. 2 - Space and Time - Chapter S2**
- F. Feb. 4 - Spacetime and Gravity - Chapter S3**
- M Feb. 7 - Spacetime and Gravity - Chapter S3**
- W Feb. 9 - Building Blocks of the Universe - Chapter S4**
- F Feb. 11 - Study Day - No class**
- M Feb. 14 - Exam #1**
- W Feb. 16 - Our Star - Chapter 14**
- F Feb. 18 - Our Star - Chapter 14**
- M Feb. 21 - Surveying the Stars - Chapter 15**
- W Feb. 23 - Surveying the Stars - Chapter 15**
- F Feb. 25 - Debate on Whether Aliens Have Visited Earth**
- M Feb. 28 - Star Birth - Chapter 16**
- W Mar. 2 - Star Birth - Chapter 16**
- F Mar. 4 - Star Stuff - Chapter 17/Quiz #2**
- M Mar. 7 - Star Stuff - Chapter 17**
- W Mar. 9 - The Bizarre Stellar Graveyard - Chapter 18**
- F Mar. 11 - The Bizarre Stellar Graveyard - Chapter 18**
- M Mar. 14 - F Mar. 18 - Classes Dismissed - Spring Break**

- M Mar. 21 - Our Galaxy - Chapter 19**
- W Mar. 23 - Our Galaxy - Chapter 19**
- F Mar. 25 - Exam #2**
- M Mar. 28 - Galaxies and the Foundation of Modern Cosmology - Chapter 20**
- W Mar. 30 - Galaxies and the Foundation of Modern Cosmology - Chapter 20**
- F Apr. 1 - Galaxies and the Foundation of Modern Cosmology - Chapter 20**
- M Apr. 4 - Galaxy Evolution - Chapter 21**
- W Apr. 6 - Galaxy Evolution - Chapter 21**
- F Apr. 8 - Classes Dismissed - Honors Day**
- M Apr. 11 - Galaxy Evolution - Chapter 21**
- W Apr. 13 - Dark Matter, Dark Energy, and the Fate of the Universe - Chapter 22/Quiz #3**
- F Apr. 15 - Dark Matter, Dark Energy, and the Fate of the Universe - Chapter 22**
- M Apr. 18 - Dark Matter, Dark Energy, and the Fate of the Universe - Chapter 22**
- W Apr. 20 - The Beginning of Time - Chapter 23**
- F Apr. 22 - The Beginning of Time - Chapter 23**
- M Apr. 25 - The Beginning of Time - Chapter 23**
- W Apr. 27 - Finish Up Leftover Material/Current Topics in Astronomy**
- F Apr. 29 - Debate on the Ultimate Fate of the Universe**
- T May 3 - FINAL EXAM 11:30 AM - 2:00 PM 310 Gallalee**