

PHYSICS 1130-002, Introductory Astronomy

Fall Semester 2009, Instructor: Prof. Benchich (/ben-check/)

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Office Hours: synchronous meetings in Centra, Thursdays 6:00-7:00 pm

****THIS CLASS IS CONSIDERED AN ONLINE COURSE****

COURSE MATERIAL AND HOMEWORK WILL BE PRESENTED ONLINE.
STUDENTS ARE REQUIRED TO BE PHYSICALLY PRESENT ON CAMPUS TO TAKE EXAMS.

****THIS CLASS MEETS ON SELECT THURSDAY NIGHTS TO TAKE EXAMS****

YOU MUST BE PRESENT on the following Thursdays to take exams: September 17, October 15, and November 12.
There is no required class meeting on any of the other Thursdays during the semester.

TEXT AND REQUIRED MATERIAL:

- *Astronomy: A Beginner's Guide to the Universe*, 6th Edition, by Chaisson and McMillan
- Mastering Astronomy for online homework – purchase access online at <http://www.masteringastronomy.com>
- Computer-compatible microphone and speakers for online office hours

Take advantage of the free online resources that accompany a previous edition of the textbook:
<http://cwx.prenhall.com/bookbind/pubbooks/chaisson4/>

GRADING:

Weekly Assigned Homework	15%
(You will have the chance to complete a bonus homework set near the end of the semester. Your grade on the bonus homework can be used to replace your lowest homework grade.)	
Exam 1: Thursday, September 17, 6:00- 8:00 pm	20%
Exam 2: Thursday, October 15, 6:00- 8:00 pm	20%
Exam 3: Thursday, November 12, 6:00- 8:00 pm	20%
Comprehensive Final Exam: Thursday, December 17 th , 8:00 - 10:30 pm	25%

TOTAL	100%
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THERE ARE NO MAKE UP EXAMS OR HOMEWORK EXTENSIONS. NO EXCEPTIONS. PLAN ACCORDINGLY.

- Grades are assigned using a 10-point grading scale: A = 90.0-100.0, B = 80.0-89.9, etc.
- All course announcements, reading assignments, and grades will be posted in Blackboard. Please familiarize yourself with navigating to our course page within Blackboard.
- **YOU ARE RESPONSIBLE FOR ALL MATERIAL COVERED IN HOMEWORK ASSIGNMENTS, IN ONLINE MATERIAL, AND IN ASSIGNED READING.**
- You may work together on homework, as long as your responses are your own.
- Students will be required to show their University ID upon turning in exams.
- There will be **NO MAKE-UP EXAMS**. The final exam is comprehensive.
- You must do your own work on the mid-semester exams and the final exam. Failure to do so will be a violation of academic integrity. There will be consequences. See below.

All UNC Charlotte students have the responsibility to be familiar with and to observe the requirements of The UNC Charlotte Code of Student Academic Integrity (see the Catalog). This Code forbids cheating, fabrication or falsification of information, multiple submission of academic work, plagiarism, abuse of academic materials (such as Library books on reserve), and complicity in academic

dishonesty (helping others to violate the Code). Any further specific requirements or permission regarding academic integrity in this course will be stated by the instructor, and are also binding on the students in this course. Students who violate the Code can be punished to the extent of being permanently expelled from UNC Charlotte and having this fact recorded on their official transcripts. The normal penalty is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases, the course grade is reduced to "F." If you do not have a copy of the Code, you can obtain one from the Dean of Students Office or access it online at <http://www.legal.uncc.edu/policies/ps-105.html>. Standards of academic integrity will be enforced in this course. Students are expected to report cases of academic dishonesty they become aware of to the course instructor who is responsible for dealing with them.

Academic honesty and integrity are essential to the existence and growth of an academic community. Without maintenance of high standards of honesty, members of the instructional faculty are defrauded, students are unfairly treated, and society itself is poorly served. Maintaining the academic standards of honesty and integrity is ultimately the formal responsibility of the instructional faculty; and this responsibility is shared by all members of the academic community.

UNC Charlotte strives to create an academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

PHYS 1130 - INTRODUCTORY ASTRONOMY Tentative Schedule

Part 1: The sky, seasons, phases, eclipses, history of astronomy, how science works, light and telescopes

Lesson 1: scientific notation, scale of the universe, Earth's rotation, time zones, the Celestial Sphere, seasons
Lesson 2: phases of the Moon, eclipses, history of astronomy: the Greeks, Copernicus, Tycho, Kepler
Lesson 3: history of astronomy: Galileo, Newton, tides, how science works; the nature of light, telescopes
Midterm Exam 1: Part 1

Part 2: Earth and the Solar System

Lesson 4: Solar System: introduction, formation, planets around other stars, Earth as a planet
Lesson 5: Venus, Mars, Earth's Moon, Mercury, satellites, asteroids
Lesson 6: Jupiter to Neptune, Pluto, Kuiper belt, Oort cloud, comets
Midterm Exam 2: Part 2

Part 3: Physics of light, stars

Lesson 7: our Sun, how astronomers use spectra to learn about stars
Lesson 8: Stars: distance, luminosity, mass, star formation, the HR diagram, energy generation, main sequence life
Lesson 9: Stars: life from main sequence to white dwarf, death — supernovae, neutron stars, black holes
Midterm Exam 3: Part 3

Part 4: Galaxies, cosmology

Lesson 10: Our Galaxy — the Milky Way, Galaxies: properties, clusters of galaxies, dark matter
Lesson 11: Galaxies: evolution, distances, expansion of Universe, active galaxies, supermassive black holes
Lesson 12: Cosmology: Big Bang, evolution of the Universe, fate of the Universe

Final Exam: Parts 1 – 4, with emphasis on Part 4