

# ASTRONOMY 5 - EXPLORING THE COSMOS

John Perry; Innovation 203

Office hours: 1 hour before each class

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Keep checking UVM Blackboard for course materials, including a detailed course outline, the possible questions and diagrams for upcoming quizzes, and a schedule of help sessions.

## **Brief Course Outline**

Topics are covered in a mostly non-mathematical format, appropriate for non-science majors.

<u># classes</u>	<u>Subjects</u>
1	Course Introduction
1	Definitions of basic terms in physics
2	Optical and radio telescopes
1	Gravity and orbits
2	Earth motions, time, calendar, seasons and celestial Coordinates
2	Moon motions, eclipses, tides, surface and formation
1	Light and atomic structure, basic spectroscopy
3	Planets and their moons
2	Comets, meteors, solar wind, northern lights, solar system formation
1	Relativity and space-time
2	Stellar measurements, distance, magnitudes, H-R diagram
1	Stellar models and evolution: birth and prime of life
2	Death of low mass stars: white dwarfs and pulsars
2	Death of the high mass stars: stellar, galactic and cosmic black holes
1	Galaxies, spiral structure and Hubble's law; quasars
3	Cosmology: nature of our universe, dark matter, dark energy

**Recommended Text:** Neil F. Comins, Discovering the Essential Universe, Edition 5 or 6. Sections are noted on the extended outline. Not required - there are no assigned readings or problems drawn from the text. 2 copies will be on reserve at Bailey-Howe.

## **Grade Structure:**

Weekly tests - 75% (5 tests, in the last 30 minutes of alternating Tue classes)

Final exam - 25% time TBA

- Tests will each consist of 2 short essay questions. A list of about 8 possible questions will be posted 12 days in advance of each test. At the test, students will find out which 2 of these they must answer. Each question consists of several parts, and a few parts will NOT be posted in advance. An additional, short-answer extra credit question on each test will be drawn from the website *Astronomy Picture of the Day (APOD)*. A few sample answers will be posted before the first test.
- The final exam will be in the same format, with 2 questions from the final weeks of class material, plus 2 more drawn from a selection of the earlier lists of questions.
- Preparing for the tests constitutes the homework. The answers will not be handed in, except the ones appearing on the tests. No other problems or readings will be assigned.
- You must print out and fill in the request form on Blackboard to get a test re-grade.
- We drop your lowest regular test grade (not the final), but there are NO makeup tests.
- Copying answers from other students, written notes, recording devices or any other form of cheating will be reported to the Center for Student Ethics and Standards.