

## ASTRONOMY 5, EXPLORING THE COSMOS - Fall '21

John Perry; Innovation 203

Office hours: 1 hour before each class

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Course materials will be posted on UVM Blackboard (Bb) throughout the semester.

**Brief Course Outline** (This fall the course may be In-person, Hybrid or Remote; details later)  
Math is limited to basic arithmetic, appropriate for non-science majors. But scientific logic is important, and some students may find the material challenging for that reason. Help sessions and office hours are available on a regular basis.

<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: the Big Bang, dark matter, dark energy; exobiology

**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:** (Could change with Covid rules; more details later)

12 weekly assignments worth 5% each, plus three 75-minute tests, worth 13.3% each. All numerical scores will be added together and a curve applied to the totals for the whole class to determine final letter grades. Approximate letter grades for each assignment and test will also be derived from curves and posted on Bb the day after each due date. Everyone's lowest assignment score will be dropped, not including the tests, to account for absences. There will be **no makeup** assignments or tests.