SCIENCE 237: Exploring the Universe
A general survey of all of astronomy, intended for students in Arts, AHS, and Environments
web site on UW-Learn
(Wed. 6:30 - 9:30 in Physics 145)

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Office: 255 Physics (ext 32725)
Office Hours: Tues. 3:00 – 5:00pm
Textbook: 21st Century Astronomy: (Fourth Edition) by Kay, Palen, Smith, and Blumenthal
Grading:
   Scheme 1: Assignments = 30%, Midterm = 30%, Final Exam = 40%
   OR:   Scheme 2: Assignments = 15%, Midterm = 15%, Final Exam = 70%

Assignments: there will be some assignments to be done while watching the films (and handed in at
the end of the lecture). Some other assignments will require observing the sky during a few evenings.
The observing assignments will require a telescope: Note that all assignments are not of equal value;
the value of each assignment will be given on the bottom left corner of each assignment sheet.

Observatory: The Observatory will be made available to SCI 237 students several times during the
Term. Note that it is always open for public viewing on the first Wed of each month – two of these
“open evenings” will be after lectures in this course on 7 October and 2 November. Of course, if the
sky is cloudy the Observatory is not open!

TELESCOPES WILL BE AVAILABLE FOR SHORT TERM LOAN FROM CHEM STORES!

MIDTERM EXAM: 21 October in class

There will be many videos and a few shorter films shown in this course. Material presented in films
is part of the course and there WILL be questions asked in the exams on this material.
The course lecture plan and the schedule of due dates given below will be followed as closely as possible, but some changes
may occur. Any changes in assignment due dates or test dates will be discussed and announced in class and posted on the
course webpage. However, the grading scheme will remain the same.

Course Outline
(Three hour lectures, with a ~ten minute break. There may be a film following the break.)

1) The development of astronomy. historical development: constellations, motions of the earth and
   the moon, eclipses, naked-eye viewing of the planets, time and the calendar, scientific
   development: gravity, physics, orbits, light, telescopes  (2 lectures: 16 & 23 Sept.)
2) Planets: the Solar System and Exoplanets  (3 lectures: 30 Sept, 7 & 14 Oct.)
3) Stars - our Sun, observed properties of stars, the structure of a star, stellar evolution from birth
to death, end-points of stars (e.g. supernovae, black holes)  (2 lectures: 28 Oct. & 4 Nov.)
4) Galaxies: our Galaxy, the Milky Way - structure of the Galaxy, the interstellar medium, the
   nearby Universe, other galaxies, quasars, the expanding Universe  (2 lecture: 11 & 18 Nov.)
5) cosmology - theories of the Universe (e.g. big bang)  (1 lecture: 25 Nov.)
6) extraterrestrial life  (1 lecture: 2 Dec.)

Copies of the Lecture notes, as .pdf files will be available on UW-Learn. It is the instructor’s intention to provide these at
least 48 hours before the class but last minute changes always occur on a few of the slides.
• **Academic Integrity**: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. The [Office of Academic Integrity](#) provides relevant information for students, faculty and staff. Students are expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for their actions. Completion of the [Orientation to Academic Integrity Tutorial](#) is encouraged and familiarity with [Policy #71](#) (Student Discipline) is expected. Students who are unsure whether an action constitutes an offence, or need help in learning how to avoid offences (e.g., plagiarism, cheating) or understand ‘rules’ for group work/collaboration should seek guidance from their course instructor, academic advisor, or the Associate Dean of Science for Undergraduate Studies. For information on typical Policy 71 penalties, students should check [Guidelines for the Assessment of Penalties](#).

• **Grievance**: Students, who believe that a decision affecting some aspect of their university life has been unfair or unreasonable, may have grounds for initiating a grievance. Students should read [Policy #70](#), Student Petitions and Grievances, Section 4. When in doubt, students must contact the departmental/school administrative assistant who will provide further assistance.

• **Appeals**: A decision or penalty imposed under Policy 33 (Ethical Behavior), grievances under Policy #70 (Student Petitions and Grievances) or Policy #71 (Student Discipline) may be appealed, if there is a ground. Petitions may not be appealed. Students who believe they have a ground for an appeal should refer to [Policy #72](#) (Student Appeals).

Revised: 26 August, 2015