University of Waterloo
Winter 2014

SCIENCE 238: INTRODUCTORY ASTRONOMY
(Tues and Thurs, 2:30-3:50 in PHY 145)

Instructor: Mike Hudson
email: mjhudson@uwaterloo.ca (please put SCI238 on subject line)
Office: PHY 252 (ext. 32212)
Office Hours: Wed. 3:00 – 4:00 pm or by appointment (e-mail me)

TAs:
1. Katherine White: k22white@uwaterloo.ca
2. Robert Main: ramain@uwaterloo.ca. Office Hours: Wed 2-3 PM, PHY 207
3. Farbod Kamiab: fkamiab@uwaterloo.ca

Resources:

Text: Cosmic Perspective (Seventh Edition) by J. Bennett, et al.

- We will NOT be using the online Mastering Astronomy for credit, so you need not purchase a text with this component (although the difference in price is small).

- Earlier editions of Cosmic Perspective contain most but possibly not all of the material. They may also have different chapter and problem numbering. If you use one of these earlier editions, you are responsible for any missing material. Versions labelled "Essential" are missing some material and are not recommended.
• One copy of the 7th edition will be held on one-hour reserve at Davis, call number UWD ? (TBA).

**Course Outline** (# lectures is approximate, approximately 1 textbook Chapter per lecture)

1. Introduction to the Universe (1.5 lectures)

2. Naked-eye astronomy : Motions of the earth, moon and planets; the historical development of astronomy (2.5 lectures)

3. Physics overview : Gravity, nuclear, time, light, telescopes (2.5 lectures)

4. The Solar System (2.5 lectures)

5. Extra-solar planets (1 lecture)

6. Stars: the Sun, observational properties, the structure of a star, stellar evolution (2 lectures)

7. Death of Stars : supernovae and black holes (2 lectures)

8. Our Galaxy, the Milky Way : structure, the interstellar medium, star formation, dark matter halo (1 lecture)

9. Beyond our Galaxy : galaxies, quasars, etc. (2 lectures)

10. Cosmology : theories of the Universe (e.g. big bang) (3 lectures)

11. Extraterrestrial life (1 lecture, if time permits)

**Grading:**

*Reading Assignments and Quizzes*: There will be reading assignments from the course textbook; these will be given in class and posted on the SCI 238 LEARN page as we go along. There will be multiple-choice quizzes conducted via the D2L based on this reading material. Deadlines for completing these quizzes will be given in class and posted on D2L.
Many of the multiple-choice questions will be “recycled” in the mid-term and final exams.

Films: There will be some films shown in this course. Material presented in films is part of the course and there WILL be questions asked in in-class quizzes and on the exams on this material.

Assignments: There will be several problem sets to do over the course of the term. More info on assignment standards

Observing Project: Optional (see grading schemes below).

Observing the Night Sky: I will try to arrange for observing sessions using the telescopes on the roof of the Physics building. At present, it is intended that these sessions will be optional. Note that there are also public observing nights.

Marking scheme:

The higher of Scheme 1 or Scheme 2 will be your final grade. This means that the Observing Project is optional.

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<th>Scheme 1</th>
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<tr>
<td>Online quizzes and in-class activities</td>
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<td>Approx weekly</td>
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<tr>
<td>Assignments</td>
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<tr>
<td>Observing Project</td>
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<td>Due at end of term</td>
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Course Rules

- **Late submission:** Penalty for assignments up to 1 day late: 25%. No credit for assignments later than a day.

- **Missed assignments, midterms or exams:** Bring Verification of Illness Forms (VIF) within 48 hours of the end of illness to Science Undergraduate Office (SUO) for verification and filing. The SUO will then notify me automatically.

- **Assignments will be returned in class.** Assignments not picked up in class will be left for collection outside PHY 252 for two weeks. If you do not wish your uncollected assignment(s) left for collection, please contact me in advance.

**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.

**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 department’s/school’s administrative assistant who will provide further assistance.

**Discipline:** Students are expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for their actions. Students who are unsure whether an action constitutes an offense, or who need help in learning how to avoid offenses (e.g., plagiarism, cheating) or about ‘rules’ for group work/collaboration should seek guidance from the course instructor, academic advisor, or the Associate Dean of Science for Undergraduate Studies. For information on categories of offenses and types of penalties, students should refer to Policy #71 (Student
Discipline). For information on typical penalties, students should check Guidelines for the Assessment of Penalties.

**Appeals:** A decision or penalty imposed under Policy 33 (Ethical Behavior), Policy #70 (Student Petitions and Grievances) or Policy #71 (Student Discipline) may be appealed, if there is a ground. Students, who believe they have a ground for an appeal, should refer to Policy #72 (Student Appeals).

**Students with Disabilities:** AccessAbility Services, located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If students require academic accommodations to lessen the impact of their disability, they should register with AccessAbility Services at the beginning of each academic term.

*Revised: Jan 7, 2014*