University of Waterloo

Spring 2012

SCIENCE 238: INTRODUCTORY ASTRONOMY

(Tues. Thurs. 7- 8:50 in Physics 145)

Instructor: Mike Hudson

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Office: PHY 252 (ext. 32212)

Office Hours: Tue. 3:00 – 4:00 pm or by appointment (e-mail me)

TA: Heather Pickup (hpickup@uwaterloo.ca) Office hours: Wed 3-5 P.M. PHY 208.

Textbook: Cosmic Perspective (Sixth Edition) by J. Bennett, et al. Looseleaf version also available at the bookstore. We will not be using the online Mastering Astronomy for credit. Earlier editions of Cosmic Perspective contain most but possibly not all of the material. They may also have different chapter and problem numbering. A copy will be held on one-hour reserve at Davis, call number UWD 1465.

Course Outline (# lectures is approximate)

1. Introduction to the Universe (1 lecture)

2. Naked-eye astronomy, motions of the earth and the moon, the historical development of astronomy (2 lectures)

3. Gravity, nuclear physics, time, physics of light, telescopes (3 lectures)

4. The Solar System (3 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, black holes) (1 lecture)

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

9. Extragalactic astronomy - galaxies, quasars, etc. (2 lectures)

10. Cosmology - theories of the Universe (e.g. big bang) (2 lectures)

11. Extraterrestrial life (1 lecture)

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 D2L page as we go along. There will be multiple-choice quizzes conducted via the D2L based on the 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, as well as an observing project to do over the course of the term. More info on assignment standards

Observing the Night Sky: In addition to the observing projects, 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:

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<tr>
<td>Quizzes</td>
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<tr>
<td>Assignments and Project</td>
<td>25</td>
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<tr>
<td>Tests/Exams</td>
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<td><strong>Total</strong></td>
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**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:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy #70, Student Petitions and Grievances, Section 4. [http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm)

** Discipline:** A student is expected to know what constitutes academic integrity, to avoid committing academic offenses, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. For information on categories of offenses and types of penalties, students should refer to Policy #71, Student Discipline, [http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm)

**Appeals:** Concerning a decision made under Policy #70 (Student Petitions and Grievances) (other than petitions) or Policy #71 (Student Discipline) a student may appeal the finding, the penalty, or both. A student who believes he/she has a ground for an appeal should refer to Policy #72 (Student Appeals) [http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm)

**Note for students with disabilities:** The Office for Persons with Disabilities (OPD), 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 you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Revised: 30 April, 2012