Fall 2013
PHYS275: Astrophysics I – Planets
https://learn.uwaterloo.ca

Instructor: James Taylor
Email: taylor@uwaterloo.ca
Office: Physics 256
Office hours: Thursday 2:30-3:30 or email me

Lectures: T 7-9:50, second week of September-last week of November

Text: Foundations of Astrophysics (First Edition) by Ryden & Peterson
(either full or older courseware versions are ok; full version can be reused for PHYS375)

Other Materials: Lecture slides and assignments will be posted on the course web page listed above. Only students registered in the course will be able to see this material. Check the site once a week for announcements and updates.

Course Assignments and Grading: The final grade in the course will be based on a participation mark for regular attendance, weekly assignments, an in-class midterm and a final exam. I will have one or two surprise quizzes to assess attendance/participation. Assignments will be posted on the webpage roughly one week in advance, and solutions will be provided after the due date, usually within a few days. The midterm will be held on October 22nd (the week after Thanksgiving). The final grade will be determined using whichever of the options below gives the highest mark individually.

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<th>Participation</th>
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<td>Assignments</td>
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Course Outline:

1. Introduction: The origins of Astronomy, basic observations [1 lecture]
2. The Discovery of the Solar System: the shape and nature of the Earth, the geometry and scale of planetary orbits, the birth of Physics [1 lectures]
3. Basic Astrophysics: gravity & celestial mechanics, the states of matter, hydrostatic equilibrium, radiation, heat and other forms of energy, observational methods [2 lectures]
4. The Solar System: The Sun, rocky and gaseous planets, planetary surfaces, planetary interiors, planetary atmospheres, minor planets, impacts and dynamics, the formation of the Solar System [3 lectures]
5. Extrasolar planets and Life: Basic properties of other stars, the discovery and properties of extra-solar planets, forms and history of life on Earth, prospects for life elsewhere [2 lectures]
The Fine Print:
The following rules will be repeated and clarified in class as need arises.

**Work expected:** Students are expected to attend lectures, complete assigned readings, complete and submit assignments, sit the midterm and sit the final. No exceptions to these requirements will generally be made in cases where students miss classes and/or tests, or do not complete assignments. The work-load for the course should be 3 hours of lectures, 2-3 hours of reading and 2-3 hours of other work (assignments etc.) a week. Students should also check the course web-site regularly for course announcements.

**Group Work/Discussion of Results:**
* Collaboration and/or discussion with other students are allowed on take-home assignments. Take-home assignments must nonetheless be written up individually; copies are not acceptable. If you are working with others please indicate this on your work.

* **No form of collaboration, copying, discussion or use of notes or aids** other than those provided by the instructor is allowed on the final examination, nor on the tests.

For information on academic offenses and types of penalties, students should refer to Policy # 71, Student Academic Discipline, [http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm](http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm)

**Late Penalties:** Assignments are due in class on the due date, but I will accept them until the end of that day. Late assignments (those received the next day or later) will be accepted with a penalty of -10% until I post/discuss the solutions, and get no marks once I have posted or discussed the solutions.

**Graded Assignments:** Graded assignments will be handed back in class. Uncollected assignments will generally be kept for 1-2 months after the end of the course, but no longer (exams are kept for longer, as per faculty requirements)

**Examinations:** Attendance at examinations is mandatory, and exams will not generally be rescheduled, except in cases of severe illness or personal trauma. Any medical exceptions must be documented by a signed medical note from campus Health Services (note this is a change from previous policy), indicating the date and severity of the illness, and will only be accepted at the instructor’s discretion. Exams will not be excused for minor complaints. Students with chronic health problems should consult with the Office of Disabilities for alternate exam arrangements.

**Note for Students with Disabilities:** The Office for Persons with Disabilities, located in Needles Hall Room 1132, collaborates with all academic departments to arrange appropriate accommodation for students with disabilities; this is done without compromising the academic integrity of the curriculum. If you require academic accommodation to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

**Drop-dates:** Students concerned about the level of the course, course requirements, or their performance should keep in mind cut-off dates for dropping courses without penalty. Please check these with the undergraduate advisor or the Faculty of Science office.