

DEPARTMENT OF PHYSICS

**PHYS*2310 Fall 2009
Mechanics I**

The objective of this course is to continue the development of a strong foundation in classical mechanics for students in the various physics-related majors. This foundation will be strengthened further in the subsequent courses.

Prerequisites: One of MATH*1210[†], MATH*2080, IPS*1210[†]. (†preferred)
One of PHYS*1000[†], PHYS*1080, PHYS*1110, IPS*1220[†]. (†preferred)

Professor: Jason Thomas aka the Great Orbax Office: MacN 404
E-mail: orbax@physics.uoguelph.ca

Tutorial Instructors:

Paul Finlay Office: MacN 406 E-mail: pfinlay@physics.uoguelph.ca
Ryan Massey Office: MacN 415B E-mail: rmassey@physics.uoguelph.ca

Lectures: Monday, Wednesday, Friday 12:30 to 1:20 pm THRN 1307

Tutorials: 2 hours per week, alternating weeks
1 tutorial section: Thurs 7:00 to 8:50 pm MacK 115

Required Textbooks:

J.R. Taylor, *An Introduction to Error Analysis -- The Study of Uncertainties in Physical Measurements (2nd Edition)*, University Science Books, 1997.

G.R. Fowles and G.L. Cassiday, *Analytical Mechanics (7th Edition)*, Saunders College Publishing, 2005.

Course Content:

- * Error Analysis (approx. 2 weeks) [ref. Taylor, Ch. 1-5, 11]
- * One-dimensional Motion (approx. 1-2 weeks) [ref. Fowles & Cassiday, Ch. 2]
- * Oscillations -- Including Complex Numbers (approx. 2-4 weeks)
[ref. Fowles & Cassiday, Ch. 3 & App. B]
- * Gravitation and Central Forces (approx. 2-3 weeks)
[ref. Fowles & Cassiday, Ch. 6]
- * Two- and Three-dimensional Motion (approx. 1-2 weeks)
[ref. Fowles & Cassiday, Ch. 4]

<u>Evaluation:</u>	Assignments (approx. 3-4)	30%
	Midterm Exam (Thurs. Oct. 16, 7:00-9:00 p.m., MacK 115)	30%
	Final exam (Tues. Dec. 15, 8:30-10:30 a.m.)	40%

Illness, etc.:

If you miss an assignment due-date or the midterm exam, please see your course professor, and if you miss the final exam, please see your Program Counsellor.

For more details, refer to the Undergraduate Calendar (<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/>) -- go to "Section VIII Undergraduate Degree Regulations and Procedures", and click on the heading "Academic Consideration, Appeals and Petitions."

(Not) Working With Other Students:

All work submitted for grading in this course must be each individual student's own work. While students are encouraged to share thoughts and ideas, it is not acceptable to share assignment solutions, etc. **The assignments are not group projects.** It is suggested that you do not show your written solutions, etc., to other students.

Help:

One of your best sources of help is your tutorial instructor.

In addition, Orbax is happy to answer questions in his office (MacN 404) during his office hours:
Mon. 1:30-2:30 p.m.; Wed. 1:30-2:30 p.m.; Fri. 1:30-2:30 p.m

If you wish to obtain help from Orbax at another time, please see him before or after lectures to arrange a mutually convenient time to see him in his office. Short questions can often be handled in the lecture room just before or after lectures. Also feel free to email him to arrange a meeting.

Tutorials:

The bi-weekly tutorials are co-ordinated with those in PHYS*2330 (Electricity & Magnetism I). If you are registered in both courses, in a given week you will have a tutorial in one of the two courses (2330 or 2310), but not a tutorial in both.

Tutorials are held in MacK 115 (usually) for both courses.

Tentative Laboratory & Tutorial Schedule for PHYS*2310 & 2330 Fall 2009

Tutorials: usually MacK 115 on Thursdays 19:00-20:50

Microcomputer Lab: MacN 315-317 & SCIE 1305

Week	Mechanics I (2440)	Electricity & Magnetism I (2460)
Sept. 7-11	<i>No tutorial.</i>	<i>No tutorial.</i>
Sept. 14-18	<i>Tutorial (MacK 115) — Stats & Errors</i>	<i>No tutorial.</i>
Sept. 21-25	<i>Tutorial (MacK 115) — Stats & Errors</i>	<i>No tutorial.</i>
Sept. 28 – Oct. 2	<i>No tutorial.</i>	<i>Tutorial (MacK 115)</i>
Oct. 5-9	<i>Tutorial (MacK 115)</i>	<i>No tutorial.</i>
Oct. 12-16	<i>Tutorial in Lab Room (MacN 414) during lab times, drop in help</i>	<i>Tutorial (MacK 115)</i>
Oct. 19-23	Midterm Exam (MacK 115) Thurs. Oct. 22, 7:00-9:00 p.m.	<i>No tutorial.</i>
Oct. 26-30	<i>No tutorial.</i>	Midterm Exam (MacK 115, Thursday Oct. 29, 7:00-9:00 p.m.)
Nov. 2-6	<i>Tutorial (MacK 115)</i>	<i>No tutorial.</i>
Nov. 9-13	<i>No tutorial.</i>	<i>Tutorial (MacK 115)</i>
Nov. 16-20	<i>Tutorial (MacK 115)</i>	<i>No tutorial.</i>
Nov. 23-27	<i>No tutorial.</i>	<i>Tutorial (MacK 115)</i>
Nov. 30- Dec. 4	<i>No lab, no tutorial.</i>	<i>No lab, no tutorial.</i>