

PHYS*2310 – Mechanics W16

Instructor:

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Teaching Assistant:

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Lectures:

MCKN 115: Monday, Wednesday, Friday 9:30 am – 10:20 am

Tutorials:

MCKN 115: Thursday, 7:00 pm – 8:30 pm

Final Exam:

Friday, April 22, 7:00 pm – 9:00 pm
Location TBA

Course description:

This course continues building the foundation in mechanics begun in the first year. Topics include, one, two and three dimensional motion, damped and forced harmonic oscillator, gravitation and orbital motion, special relativity, non-inertial reference frames, and rigid body dynamics.

Lecture Content:

Topics include:

- Coordinate systems, velocity and acceleration
- Motion in resistive media
- Center of mass, momentum, angular momentum, and energy
- Harmonic oscillators and damped oscillators
- Driven oscillators, resonances, and Fourier series
- Coupled oscillators and normal modes
- Central force motion
- Gravitational systems
- Rotations
- Non-inertial reference frames
- Moment of inertia tensor and rigid body motion
- Special relativity and space time diagrams
- Lorentz transformations
- Relativistic kinematics and 4-vectors

Textbook:

The lecture notes will be posted on Courselink. The textbook for the course is *Classical Mechanics*, John R. Taylor, University Science Books, 2005, ISBN-13: 978-1-891389-22-1

Evaluation:

30% Assignments

30% Midterm, Thursday, Mar. 3, MCKN115

40% Final Exam

There will be 6 assignments for this course that will be handed out and submitted in class, and returned in the tutorial periods. No assignments will be accepted after the posting of the solutions on the course webpage. Submitted assignment solutions must show calculational details, be legible, and written with a logical flow. Marks on assignments will rapidly trend to zero if not presented well.

(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. The assignments are not group projects. It is important that you do not show your final written solutions to other students.

Office hours:

Monday, Wednesday, Friday 1:00 pm – 2:00 pm. While I will make every attempt to be in my office for these posted times, my duties as Department Chair will at times preclude my honouring these commitments. I apologize in advance for any inconvenience.

Other times can be arranged via email (garrettp@uoguelph.ca)

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. [See the undergraduate calendar for information on regulations and procedures for Academic Consideration.](#)

Drop Date

The last date to drop one-semester courses, without academic penalty, is Friday, March 11, 2016. For [regulations and procedures for Dropping Courses, see the Undergraduate Calendar.](#)

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all assignments and midterm exam: you may be asked to resubmit work at any time.

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible. For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.uoguelph.ca/csd/>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

[The Academic Misconduct Policy is detailed in the Undergraduate Calendar.](#)

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

Course Evaluation Information

The Department of Physics requires student assessment of all courses taught by the Department. These assessments provide essential feedback to faculty on their teaching by identifying both strengths and possible areas of improvement. In addition, annual student assessment of teaching provides part of the information used by the Department Tenure and Promotion Committee in evaluating the faculty member's contribution in the area of teaching. The Department's teaching evaluation questionnaire invites student response both through numerically quantifiable data, and written student comments. In conformity with University of Guelph Faculty Policy, the Department Tenure and Promotions Committee only considers comments signed by students. Your instructor will see all signed and unsigned comments after final grades are submitted. Written student comments may also be used in support of a nomination for internal and external teaching awards.

NOTE: No information will be passed on to the instructor until after the final grades have been submitted.