PHYS*1130 Physics with Applications
Winter 2018 Course Outline
University of Guelph
Department of Physics

Important: Please retain this material and consult it regularly during the semester. This information will be important to you as the course progresses.

Course Information

General Information

Prerequisites: (MATH*1080 or MATH*1200), [1 of 4U Physics, OAC Physics (or equivalent), PHYS*1020] 4U or OAC Mathematics

Course Credit Weight: 0.5

Academic Misconduct

The University of Guelph takes a serious view of academic misconduct and will severely penalize students, faculty and staff who are found guilty of offences associated with misappropriation of others' work, misrepresentation of personal performance and fraud, improper access to scholarly resources, and obstructing others in pursuit of their academic endeavors. 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. Each student is assumed to be familiar with the regulations surrounding academic misconducts, as spelled out in the Undergraduate Calendar academic misconduct section.

Course Objectives

1. Improvement of analytical problem-solving skills
2. Ability to communicate (in writing) a logical problem solution
3. Improvement of the proper use of calculus in mathematical problem solving
4. Expansion of breadth of knowledge, particularly in the application of physics to engineering
5. Development of proper experimental and data collection techniques by participation in hands-on laboratory sessions
6. Growth in physical understanding of everyday phenomena
Course Related Information and Contact

**Quiz Room Location:** SSC1101A  
**Laboratory Location:** MacN 304  
**Lost and Found:** "Lost and Found" is in the Quiz Room (SSC1101A).  
**Quiz Room Hours:** Posted on CourseLink – see Quiz Room Operating Hours  
**Lab Room Hours:** Posted on CourseLink – see Lab Room Operating Hours.  
Extra opening times may be added depending on enrolment.

1st Main Course Contact

<table>
<thead>
<tr>
<th>Quiz Room Supervisor</th>
<th>Office</th>
<th>Extension</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cindy Wells</td>
<td>SSC1101A</td>
<td>52445</td>
<td><a href="mailto:cwells@uoguelph.ca">cwells@uoguelph.ca</a></td>
</tr>
</tbody>
</table>

Please contact the Quiz Room Supervisor with all course related inquiries and email to report any illness or errors in your CourseLink record.

CourseLink at Guelph

Students in this course will need to use CourseLink to write **required** Pretests, perform a simulated experiment on radiation (Pretest 9), and check their term marks. **As soon as possible, you should check that you can log in to CourseLink:**

* Use a web browser to go to the [CourseLink website](#)
* Follow the CourseLink login instructions.

Instructors

<table>
<thead>
<tr>
<th>Lecturer</th>
<th>Office</th>
<th>Extension</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Great Orbax</td>
<td>MacN 328</td>
<td>52625</td>
<td><a href="mailto:orbax@uoguelph.ca">orbax@uoguelph.ca</a></td>
</tr>
</tbody>
</table>

Lecture Sections

<table>
<thead>
<tr>
<th>Section</th>
<th>Day</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Monday, Wednesday, Friday</td>
<td>11:30am – 12:20pm</td>
<td>ALEX 200</td>
</tr>
<tr>
<td>02</td>
<td>Thursday</td>
<td>7:00pm – 9:50pm</td>
<td>MACN 105</td>
</tr>
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</table>
## Lecture Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Week of</th>
<th>Topic(s)</th>
<th>Study Guide</th>
</tr>
</thead>
</table>
| 1    | 1-3     | January 8 | - Introduction to Course/SHM  
- Damped harmonic motion | 1 |
| 2    | 4-6     | January 15 | - Traveling waves  
- Superposition and standing waves | 1, 2 |
| 3    | 7-9     | January 22 | - Acoustics I  
- Acoustics II | 2 |
| 4    | 10-12   | January 29 | - Electromagnetic waves - light  
- Blackbody radiation - solar flux | 3 |
| 5    | 13-15   | February 5 | - Optics I - refraction and Snell’s law  
- Optics II - lens systems | 4 |
| 6    | 16-18   | February 12 | - Optics III – Instruments  
- Problem solving in Optics | 4, 5 |
|      |         | February 19 | - WINTER BREAK (FEB. 19-23) | 6 |
| 7    | 19-21   | February 26 | - Wave properties of particles / \(\pi\)-orbitals  
- Energy levels and light absorption | 5 |
| 8    | 22-24   | March 5 | - Fluorescence and phosphorescence  
- Electricity I: Fields and Potentials | 6, 7 |
| 9    | 25-27   | March 12 | - Electricity II: Current, Voltage and Circuits  
- Electricity III: Kirchhoff’s laws | 7, 8 |
| 10   | 28-30   | March 19 | - AC electricity/Power transmission  
- Radioactive decay | 9 |
| 11   | 31-33   | March 26 | - Mass defect and nuclear power  
- Absorption of radiation I | 10 |
| 12   | 34-36   | April 2 | - Absorption of radiation II  
- Review and Evaluation | 11 |

**Note:** The information in the Lecture Schedule “Topic” column is provided as a rough guide for the term. Future announcements about changes to the table or of any kind will be made in class and posted on CourseLink; these announcements take precedence over the original course outline!
Text & Other Materials

1. **Textbook:** *Physics for the Biological Sciences, 5th Edition*, Williams, Sullivan, Renninger, McFarland, Hunt. Available in the Campus Bookstore (1st floor MacNaughton) or the Co-op Bookstore (Johnston Hall).

2. **Study Guide and Laboratory Manual for PHYS*1130, 2017 Printing.** Available in the Quiz Room SSC1101A for $20.00 (*Cash Only* - *exact change required*).

   *Booksale* - The Quiz Room will be open for the sale of manuals Monday - Friday January 8-12 from 9am-3pm. After January 12 this item may be purchased in the Quiz Room during normal Quiz Room daytime hours as posted on Courselink.

3. **i-Clicker Student Response Unit** (optional) – available in the University Bookstore. A Classroom Response System is recommended but not required this semester where students use Personal Response Units (commonly known as “clickers”) to register their responses to questions posed in class.

4. **Calculator** (get one with trig functions, e^x, etc.) *(graphing calculators, programmable calculators, and electronic devices ie. Cell phones, ipods, ipads, laptops, are not allowed at any time while in the quiz room)*.

5. **This Course Outline**: includes important dates and deadlines, lecture schedule, evaluation information, personal record sheet, etc.

6. The following items are available on Courselink;
   - a. **Sample Final Examinations**
   - b. **Sample Quiz** on each study guide
   - c. **Solutions to self-tests**

**Evaluation**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Quizzes (5x10%)</td>
<td>50%</td>
</tr>
<tr>
<td>(see page 6 for information on quiz deadlines and notes)</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>50%</td>
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</tbody>
</table>

**Evaluation of Quiz Marks**

Quizzes are marked out of 10

8/10 or higher receive 10 out of 10 (highest possible mark per unit) between 4.0/10 and 7/10 (inclusive) receive 2 marks per attempt less than 4/10 receive zero
The partial mark of 2 does not add to a mark of 10. It is awarded on the condition you do not receive a “pass” on any attempt on a unit quiz. See the following examples:

**Four examples:**

1. A student earns 4.0/10 on the first quiz attempt, 6.0/10 on the second quiz attempt, and 8.0/10 on the third quiz attempt. Mark received: 10 out of 10.
2. A student earns 4.0/10 on the first quiz attempt, 5.5/10 on the second quiz attempt, and 7.5/10 on the third quiz attempt. Mark received: 6 out of 10.
3. A student earns 2.5/10 on the first quiz attempt, 4.0/10 on the second, and 7.5/10 on the third. Mark received: 4 out of 10.
4. A student earns 7.5/10 on the first quiz attempt and tries no further quizzes. Mark received: 2 out of 10.

**Final Examination**

**Final Exam Date: TUESDAY, APRIL 17, 2018 7-9PM**

The final examination will consist of approximately 20-25 questions with multiple-choice answers. Sample final examinations are available through Courselink. Many students have found that the final examination is difficult, even with a perfect mark on the Quizzes. This is because mastery of all of the Study Guides is required in order to achieve a perfect mark on the final examination. A thorough review of all of the course material is highly advisable in preparing for the final examination.

**How the Course Works**

**Introduction**

Students' study schedules at University are often based on a crisis-to-crisis approach (When's my next midterm exam?) rather than on organized learning. To reduce this problem, Physics with Applications is offered using a "Personalized Instruction" method which gives the student some flexibility in scheduling study time.

The central idea of this teaching method is the accommodation of both the student who needs or likes formal lecture teaching and the student who prefers guided self-instruction. Indeed, in this course, any combination of these two extremes may be mixed to the student's own taste.

Many thousands of students have taken this course and almost every semester has seen some modification, usually minor, in the operation of the course. The present version of the study materials incorporates a large number of constructive suggestions made by students. We hope you will continue to point out errors, omissions and weaknesses so that the course and its teaching materials can be regularly upgraded. We are confident that this thoroughly tested learning concept will continue to be met with enthusiastic approval from the majority of our students.

**Lectures**

Formal lectures will be given and you will find a detailed timetable of dates and topics in this course handout. Students may attend all of the lectures or select only those topics
in which they feel they need lecture support. You are strongly advised to attend lectures until you are sure that the self-study method works for you. In any case, the entire course content will be covered in these lectures. Whether you attend lectures or not, it is your responsibility to check Courselink for important weekly notices regarding the course.

**Modules**

The Handbook contains the ten Study Guide modules (SG 1 to 10) for this course. These ten modules cover the entire course and are designed so that you need never actually attend a lecture if you follow their advice scrupulously. (You must, however, do laboratory work.) Each module provides you with:

1. a brief introductory discussion of what the module is about,
2. the educational objectives of the module,
3. a detailed study guide (reading and problem lists, etc.)
4. self tests,
5. answers to problems, and sometimes
6. extra problems.

These self-study modules are your chief help; the Study Guide is a teacher at your side constantly and should be studied with care.

**Quiz Deadlines and Important Notes**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1</td>
<td>Monday, January 8</td>
<td>Quiz Room Opens for Writing</td>
</tr>
<tr>
<td>1</td>
<td>Wednesday, January 12</td>
<td>Lab Room (MacN 302&amp;304) is open</td>
</tr>
<tr>
<td>4</td>
<td>Wednesday, January 31</td>
<td>Last day for Quiz #1</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Requirements:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Pretest 1 (on-line) – minimum 60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Study Guides 1 and 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Experiment 2 Acoustics (MacN 302)</td>
</tr>
<tr>
<td>7</td>
<td>Wednesday, February 28</td>
<td>Last day for Quiz #2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Pretest 2 (on-line) – minimum 60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Study Guides 3 and 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Experiment 4 Optics (MacN 302)</td>
</tr>
<tr>
<td>9</td>
<td>Wednesday, March 14</td>
<td>Last day for Quiz #3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Pretest 3 (on-line) – minimum 60%</td>
</tr>
<tr>
<td>Week</td>
<td>Date</td>
<td>Notes</td>
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</tr>
<tr>
<td>11</td>
<td>Wednesday, March 28</td>
<td>2. Study Guide 5&lt;br&gt;Last day for Quiz #4&lt;br&gt;<strong>Requirements:</strong>&lt;br&gt;1. Pretest 4 (on-line) – minimum 60%&lt;br&gt;2. Study Guides 6, 7 and 8&lt;br&gt;3. Experiment 7 Resistance (MacN 302)&lt;br&gt;Last day Laboratory (MacN 302&amp;304) is open.</td>
</tr>
<tr>
<td>12</td>
<td>Wednesday, April 4</td>
<td>Last day for Quiz #5&lt;br&gt;1. Pretest 9 (Computer Lab) – 100% Pass&lt;br&gt;2. Study Guide 9</td>
</tr>
<tr>
<td>12</td>
<td>Friday, April 6</td>
<td>Quiz Room closes at 3:00pm</td>
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</tbody>
</table>

**Note:** Study Guide 10 and experiment 10 (Spectroscopy MacN304) will be tested on the final exam.

**Obtaining Help in the Course**

a) Help may be obtained from the lecturer before and after lectures, or in his office.
b) **LIB370** – Beginning in week 2 to week 12 Mon, Tues, Wed, Thurs 12noon-4pm.
c) **Note:** LIB370 is for help in physics courses PHYS*1070, PHYS*1080 and PHYS*1130. Help will be available in the quiz room during week 1 10-11am and 2-3pm.
d) Help may be obtained in rooms MacN 302 or 304 or 304a. These are the lab rooms for this course PHYS*1070 & 1080. When these rooms are open you may obtain help with course-related problems from the instructors, but remember that their first priority is to help students who are doing experiments.
e) The Solutions to the Self-Tests (which are on reserve in the Library) and the set of 3 sample final examinations will be helpful (see page 4). These are available on Courselink.
f) The following can be accessed from Courselink:

a. Dimensional analysis  
b. Trigonometry  
c. Logarithms  
d. Graphing simple functions  
e. Graphing log paper  
f. Oscillating functions  
g. Graphing  
h. Exponential growth and decay  
i. Solutions to the Self-Tests
Laboratory

Laboratory Protocol

- **Lab experiment sign up is done on-line via CourseLink.** Begin your labs as soon as possible. Labs can be done in any order being sure that specific labs are complete by quiz deadlines. It is recommended that you start the lab portion of this course during the first couple of weeks of the semester. It is mandatory that you sign up for all your labs and create your own personal lab schedule early in the semester to ensure that all labs can be completed by the lab quiz deadline dates (plan carefully). Print a copy of your lab schedule and staple it inside your lab manual as your lab TA may ask for it if more than the maximum number of students show up for a booked station. Only those signed up to a station will be allowed in the lab. You must attend all of your scheduled labs.

- **Please note:** lab sign-up is restricted to 1.5 hour time slots which is sufficient time to collect the required data and complete your calculations. You are required to be familiar with the lab material before arriving to ensure completion within the 1.5 hour session. A completion TA signature and seal is mandatory prior to leaving the lab. Once you have completed the lab data and calculations and obtained a TA signature/seal you will tear out the signed/sealed page and hand it at the Quiz Room when making your first attempt at the related quiz.
Quiz Room Protocol

- Students must show their U of G photo ID card in order to write a quiz.
- Only **1 quiz attempt per day** allowed on same quiz group.
- Your 1st attempt should be at least 3 days before the deadline to allow for a possible 2nd or 3rd attempt. **NOTE: evening sessions take a max. of 250 students and will close when that number is reached.** All quizzes are available from week 1 and they can be written as early as you want. The dates above only reflect the last possible date that particular quiz is available to write.
- No credit will be granted for labs or quizzes completed during a previous semester.
- If you absolutely cannot stay to have your quiz marked, you may leave it. It will be marked at the end of the quiz period and the mark posted. It will be available for you to look at for two further quiz periods.
- **Book Bag Lock (optional)** – Book bags are **not** allowed to be taken to your quiz writing station in the quiz room. The designated area for book bags is equipped with cables for locking ([you must bring your own lock](#)).
- Pretests must be passed with a minimum of 60% before the required quiz is attempted. Allow at least 1 hour for your Pretest grade to be processed.
- All electronic devices must be concealed while in the quiz and lab rooms ie, cell phones, lap tops, ipods, tablets etc.
- All quizzes remain in the quiz room.
- Wait quietly to have your quiz graded by the TA's. If you miss hearing your name your quiz will be graded in your absence.

The Pretests

Before any quiz can be written for credit, a Pretest must be taken and passed at the level of 60%. Allow at least **1 hour** prior to attempting the related quiz. These Pretests are designed to permit a self-examination of the basic concepts and objectives of the modules in question. Each Pretest consists of a variety of simple questions in one of 4 formats:

1. multiple choice
2. true or false
3. pairwise matching
4. enter a number or symbol

The Pretests are delivered using Courselink and so can be taken from any location which has computers connected to the internet.

*IMPORTANT NOTE: - If you open a pretest to look at it you must either continue the test or if you are not ready go directly to the bottom - “submit for grading-view results”. Once cleared, another version of this pretest will be available immediately to you. If you fail to submit a pretest for
**marking, that version will stay open and will not allow you to make another attempt.**

Upon completion it will be marked and an explanation provided for every question for which you selected the wrong answer. These should be studied carefully.

When you obtain at least 60% on the Pretest, you may proceed to the Quiz Room to write a quiz for credit. (Allow at least 1 hour for your mark to process before attempting related quiz).

If you failed to get 60%, you must repeat the Pretest until 60% is obtained. A new version of the pretest will be available immediately.

Of course, you get the maximum advantage from these Pretests if you do them without help and, as much as possible, without aids (textbook, etc.).

**It is a serious academic offence to copy, print or otherwise store the Pretests or to attempt to alter them in any way.**

Also available on Courselink are Sample Quizzes for each Study Guide, similar to quizzes that you will write in the Quiz Room.

**Diagnostic Quizzes**

You can in principle try quizzes in any order. However, note that quizzes are withdrawn on specific dates (see pages 6 & 7), so these should be attempted as appropriate. Also, note that some quizzes may require knowledge of material from previous quizzes. A non-credit Pretest must be completed before its Quiz for credit can be written. The Pretests are available on Courselink. See page 9 for details. Pretests are available for study guide modules 10 even though there are no quizzes. These are strongly recommended for study purposes.

Each Pretest is an aid to help you learn the material contained in the associated Study Guide. When you have passed the Pretest (min. 60%), you should have acquired a basic understanding of the material in the Study Guide (see pages 6 & 7). The format of the Pretest is different from that of the quiz. A sample of each quiz is provided on Courselink for you to look at. The quiz tests mastery of that material, and so you may find that you do not pass the quiz on the first attempt (see below for detailed information).

Regardless of the combination of formal lectures and/or self-study you use to acquire knowledge in the course, the question is "how do you demonstrate this knowledge and receive credit for it?" When you think you have mastered the contents of the required modules, and have passed (60%) the associated Pretest, you should go to the Quiz Room where you may request a Diagnostic Quiz. This quiz is designed to test your mastery of the material. **It is therefore very important that you come prepared for both. Allow 1 hour for a Pretest mark to process before attempting the related quiz. You will need your University of Guelph photo ID card in order to write a quiz.** The time allotted for each quiz is **20 minutes**. When you have completed the quiz, it is marked immediately by a tutor in your presence. In this way, no time is wasted teaching you things you already know, but the quiz will isolate those things (if
any) you don’t know. The tutor will give you help on the spot when time permits. It is important to emphasize the diagnostic aspect of this quiz; diagnosis is its prime purpose. It is of no value to write one if you are not prepared; you are wasting everyone’s time. The level at which you are considered to have “mastered” the material is 80%, i.e., the "pass mark" is 8 out of 10.

Each quiz that is mastered contributes 10% toward your course mark. (See evaluation on page 5) If you do not get 80% on your first attempt (and you may not), it doesn't matter. There is no stigma attached to failing this quiz; that is not its purpose. You may go away, study, and try again. The quiz will have served to show you what you must study for that module. Obviously there must be a limit to the number of times you may write quizzes on a single group, and this has been set at three. **Also, you may not attempt more than one quiz for each group in a single day.**

During quizzes (and the final examination), you may use a pocket calculator (graphing calculators and/or any electronic devices, ie, cell phones, ipods, ipads, notepads etc., are not allowed during the exam or in the quiz room). In the quiz room, each desk is provided with a sheet of formulae. A copy of this sheet will be included in the final exam. **No material in the form of quizzes or paper may be taken from the Quiz Room and all paper used when writing a quiz must be turned in.** You should visit the Quiz Room during the first week of the semester to see how the system operates.

Self-paced study is a new experience for most students. **At best, it permits you to work ahead in physics early in the semester, freeing study time for other courses during heavy weeks.** At worst, there is a temptation to leave things too late. To help pace students, deadlines are placed on quizzes. (Refer to page 6 & 7)

**Experiments**

There are 5 experiments to be done, associated with Study Guide units 2, 4, 7, 9 and 10 (see page 7 & 8 of the outline). Four of these experiments are done in the lab rooms (MacN 302 & 304) and they may be performed in any order, at any time the lab is open (see Courselink for available session – Lab Scheduling Program). The laboratory operates as an open lab, but you must reserve a space (sign up on Courselink). It is mandatory to sign-up for all required labs and create your own personal lab schedule at the start of the semester. You **cannot** just show up and join a group without being assigned to a station. **If you miss your lab you may have a difficult time rescheduling.** Print this schedule and staple it inside your lab manual. Each station can be reserved for 1.5 hours. There is also one computer simulation (Pretest 9) which can be done from any location which is connected to the internet. Once your lab is complete (data and calculations) you must have the lab TA stamp your lab to allow you to write the related quiz. When you make your 1st attempt at that quiz you will tear out the signed/stamped portion and hand it in as proof of completion. Notice that the lab instructor does not assign a mark to your lab work, although he/she may refuse to accept it if he/she judges the work to be inadequate. Your understanding of the material is tested in the quiz on the associated Study Guide.
Pretest 9 is a computer simulation, which can be done anywhere there is a computer connected to the internet; home, library, etc. You can access Pretest 9 from Courselink. When you have completed the experiment, this information will automatically be transferred to your record (allow at least 1 hour).

Remember that some quizzes require labs to be complete prior to writing them.

No lab exemptions will be granted for labs completed in another semester.

Course and University Policies

Academic Misconduct

The University of Guelph takes a serious view of academic misconduct and will severely penalize students, faculty and staff who are found guilty of offences associated with misappropriation of others' work, misrepresentation of personal performance and fraud, improper access to scholarly resources, and obstructing others in pursuit of their academic endeavors. 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. Each student is assumed to be familiar with the regulations surrounding academic misconducts, as spelled out in the Undergraduate Calendar academic misconduct section.

Final Examination Conflicts

The University’s policy regarding examination conflicts, as stated in the Undergraduate Calendar, is as follows: “Students who drop and add courses are required to consult the examination timetable in order to avoid conflicts in examination times. Written approval must be obtained from the dean or director and the instructor-in-charge of the course to register in courses that have conflicting examination times.”

Accuracy of Records

It is your responsibility to use Courselink to check that your marks are recorded correctly. Please check your record often and report any discrepancies immediately to the Quiz Room Supervisor Cindy Wells (cwells@uoguelph.ca). As an aid, a ‘Personal Record Form’ is provided on Courselink. You should use this form to record your quiz attempts, etc., and from time to time check the computer record against your personal record.
Illness
If you are away for brief periods of time due to medical, psychological or compassionate reasons, see or email the Quiz Room Supervisor Cindy Wells (cwells@uoguelph.ca) immediately about consideration of extension of deadlines, etc. (Do not wait until the end of the semester to submit your documentation). For an extended illness, etc. (> 1 week), you should obtain a medical certificate or similar documentation and consult the Quiz Room Supervisor cwells@uoguelph.ca. If you miss the final examination because of illness or for other reasons, consult regulations in the current Undergraduate Calendar.

Course Notices
From time to time, notices pertaining to the course will be posted on Courselink as a news item, and/or given in lectures. **It is your responsibility** to keep yourself informed regarding these special announcements.

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.

Drop Date
The last date to drop one-semester courses, without academic penalty, is **Friday, March 9**. For regulations and procedures for Dropping Courses, see the Undergraduate Calendar “Dropping Courses” section.

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 Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email sas@uoguelph.ca or refer to the SAS website.
**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.

**Course Evaluation**

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.