COURSE SYLLABUS

PHYS 117/1.0 - Introductory Physics (Fall {PHYS 117A} & Winter {PHYS 117B} terms)
Instructors: M. A. Singh (course coordinator) and **A. K. Topper** (lab coordinator)

PHYS 117 is a 6.0 unit course taking place in the Fall and Winter academic terms. This course is intended primarily for students in the biological and life sciences. It satisfies the physics requirement for the Life Sciences degree program and for the Faculty of Medicine; it is recommended but not required for Biology degree programs; it can serve as the required physics course for some Environmental Science degree programs. It is recommended that students check the calendar for details about their Degree Plan options. This course is algebra-based and includes a required laboratory component.

PREREQUISITE: OAC Physics or equivalent is recommended but not required. An OAC or equivalent in Mathematics is required.

LEARNING OUTCOMES:

By the end of the course successful students will be able to

- **identify** and **interpret** the laws of nature as summarized by the fundamental concepts that constitute the foundation of classical physics

- **relate** nature's basic laws describing forces, motion, energy, momentum, thermodynamics, electromagnetism, and the conservation rules that constrain these laws to real world applications
- **interpret** and **apply** basic experiment methodologies designed to test fundamental concepts through direct observation
- quantitatively **analyze** measurement results with effective **evaluation** of experimental uncertainties
- **analyze** the information contained in various hypothetical problem scenarios within the context of recognizable physics laws and **apply** systematic problem-solving strategies to **solve** for unknown quantities

A lecture plan is available for all lecture sections (001, 002, and 003) with recommended readings from the recommended textbook (College Physics, 10th edition of College Physics, by Serway & Vuille). Note that all PHYS117 students will complete the same material for grading (ie. labs, homework, exams) regardless of their lecture section. Organization into lab sections (004, 005 … 011) is independent of lecture section.

Required/recommended for the course:

- Physics 117 Lab Manual, 2014-2015 (available from Physics Stores, STI 125, 8 am – noon, 1 pm – 4 pm, cash $15; a binder and graph paper is included and no other lab material is **required**)
- Casio 991 calculator (no other type of calculator will be allowed for use during examinations)
- Enhanced WebAssign (EWA) access for **recommended** online homework, available from the Campus Bookstore. EWA access can be obtained by purchasing one of 3 available package options:
  - i) 100% digital option consisting of EWA access + e-book (College Physics, 10th edition by Serway & Vuille, containing all of the end-of-chapter material to be found in the full textbook) for $94.95
  - ii) EWA access + e-book + custom soft cover printed text (Introductory Physics, adapted from the full text and limited to material relevant to the course with all end-of-chapter material included) for $129.95
  - iii) EWA access + e-book + original soft cover print hybrid text (the hybrid text contains all of the material in the full text but without end-of-chapter questions) for $129.95
- i>clicker (**recommended** for in-class participation, available from the Campus Bookstore)

GRADING SCHEME:

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale:

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

Course Grade Components:

Homework (completed online via Enhanced WebAssign, included with the recommended course text)	7%	due approximately weekly
Labs (a minimum grade of 50% on the laboratory component is required in order to receive credit for the course)	15%	approximately every two weeks, 4 labs per term, total of 8 labs
In class participation (i>clicker) (recommended)	3%	a maximum grade of 1.5% per term is achieved by attending at least 20 lectures per term and using a Moodle-registered i>clicker
Midterm Exams	20%	Fall Midterm usually set in week 6 or 7 of the Fall term, worth 10% of the total grade Winter Midterm usually set in week 6 or 7 of the Winter term, worth 10% of the total grade
December Term Exam	20%	December (date set by the Exams Office)
Final Exam	35%	April (date set by the Exams Office)

Note that students have the **option of opting out** of one or both of the homework and in-class participation grades. If opting out of either or both of these grade components, the missed component (3% for in-class participation, 7% for homework) is incorporated into the overall exam grade according to the existing relative weighting of midterms and term exams noted above. The lab component is **required** (weighting fixed at 15% of the total course grade) and a passing grade in the labs is required in order to receive credit for PHYS117.

DISABILITY ACCOMODATIONS

Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Disability Services Office (DSO) and register as early as possible. For more information, including important deadlines, please visit the DSO website at: http://www.queensu.ca/hcds/ds/

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ACADEMIC INTEGRITY

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility. These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities). Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1), on the Arts and Science website (see http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity), and from the instructors of this course.

Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Note that the **misuse of i>clickers** or the **online homework system (EWA)** to obtain marks fraudulently is a violation of academic integrity. Given the seriousness of these matters, actions which contravene the regulations on academic integrity carry sanctions that can range from a warning or the loss of grades on a course component to the failure of a course to a requirement to withdraw from the university.