


Welcome to PHYA11F
“Introduction to Physics - IB”



Instructors: & Course Coordinator: Prof. Salam Tawfiq

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- High Energy Phys.** (PHYA11F & PHYB56F)

Prerequisite: Grade 12 Advanced Functions (MHF4U) and Grade 12 Calculus and Vectors (MCV4U)

Corequisite: (MATA29H3) or MATA30H3 or MATA31H3

- (Elective or already Graduated are Ok)
- Course Description:** The course covers fundamental concepts of classical physics and its applications to macroscopic systems in one and three dimensions. It deals with two main themes; which are Particle and Fluid Mechanics and Waves and Oscillations. The approach will be phenomenological with applications related to life and biological sciences.

Who can help you!


- ◆ TAs in Practicals
- ◆ PHYSICS AID CENTER
- ◆ Facilitated Study Groups (FSG)
Harsh Parikh
- ◆ Instructor (during office hours)

Facilitated Study Groups (FSG)

Facilitator:
Harsh Parikh, 4th Year Student


Some of the Things You'll Learn...

- To study smarter, not longer, for exams
- To read the textbook/other materials strategically
- To learn and apply key terminology and concepts
- How to organize your lecture notes more effectively



FSGs:

- Weekly study sessions
- Meet new peers
- Improve your understanding of course material
- Increase your grades!
- Judgment-free zone!



Year	FSG Average Grade	Non-FSG Average Grade
2009	73.24	68.20
2010	73.04	67.31
2011	74.00	69.06
2012	74.20	68.56
2013	72.67	64.79
2014	72.79	68.55

Administration & Syllabus

- Office hours: *(Tuesday 13.30-14.30 and Friday 11.30-12.30 or by appointment)*
- E-mails: **Use U of T e-mail. Answer in 48h** (Weekdays).
- **Students with a disability: Register with the AccessAbilities Center (volunteer note takers)**
- **We use iClickers:3% Bonus** (Need to answer at least 75% of questions in class) {enter your **UTORID** & name as on ROSI to register your clicker on **iClicker website** }
- **Drop Out! (See Coordinator)**

Syllabus

- Text Book: **Physics for Scientists & Engineers 3rd ed, Randall Knight + Student Workbook** + Mastering Physics (optional)
- Homework (about 10 Assignments)
 - **On Blackboard BB & on line (Mastering Physics) for more practice.**
 - **Course ID: MPTAWFIQ05076** (enter your UTOR id)
 - **No late Assignment accepted**
- web site: (Admin, **Notes, Quizzes & Tests....etc**) on **Blackboard (BB)**

Syllabus Cont...

- Practical: Run weekly. (*Check schedule* , *start MO 12*)
 - **Mandatory! You are encouraged to attend!**
 - **Go to your practical group!**
- Labs
 - **Three practical sessions** will be dedicated as Labs ...
 - **You will submit TWO Lab reports** (one as a group & one individual)
 - **Missing Lab (with acceptable written reason) make up arrangement within one week!**

Syllabus cont....

Marking Scheme:

- **Practical: 25%** (2 reports 8%, Practical Notebook 15%, TA impression 2%)
- **Term test: 30%** (2 term tests; 15% each)
- **Final exam: 45%**

PHYA11-2015 Grades

Original Grade Distribution

A	11%	B	12.5%	C	25.5%	D	33.5%
A+	3.5%	B+	2%	C+	3.5%	D+	11.5%
A-	3.5%	B-	5.5%	C-	8%	D-	11%
F	16.5%	OTH	0%	Average	60.30%	Median	60%
F	16.5%	OTH	0%				

Class average excluding exam no shows: 61.92%
Falls excluding exam no shows: 12.11%

Syllabus Cont...

- **Exam & Tests (Don't memorize equations)**
 - You will prepare a *One page Formulae Sheet*
 - 2 Tests & Final Exam
 - Quizzes: multiple choice questions + short answer
 - Tests: multiple choice questions + short open response + Problem solving
- **Final Exam: (Cumulative)**
multiple choice + short open response + problems

Syllabus Cont...

- To succeed: Integration of Lecture/Textbook/Practical
- Extra Help: Tutors, FSG & Instructor . Also PHYSICS AID CENTER
- Coverage (Topics from):

Tentative Schedule !

- Mechanics:
 - Ch 1-4 Kinematics 2 week
 - Ch 4-8 : Dynamics 2.5 weeks
- Conservation Laws: Ch 9-11 2.5 weeks
- Applications:
 - Ch 12 Rotation 2 weeks
 - Ch 15 Fluid & Elasticity 2 weeks

Syllabus Cont...

- Answering Questions
 - Answer in complete sentences
 - "Yes" or "No" is never a complete answer (only if you are asked to do so)
 - Explain why
- Extra Marks: (Be creative!)
Original (new) solutions!

Is this course Difficult ?

- YES & NO!!!
 - IT IS CHALLENGING!
- Foundation+***
Problem Solving Skills

Syllabus Cont...

- **Solving Problems (Check the textbook)**
 - Show basic equation
 - Include drawing and units
 - Solve algebraically
 - Show substitution of numbers (at the end)
 - Use words & be Organized
 - Only 80% points for correct answer and minimal work
 - Communicate!

Role of Mathematics

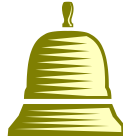
- Crucial for advancing frontiers of Physics
- Crucial for developing a facility for using Physics
- *Must know algebra very well & basic Calculus !*
- (MATA29H3) *MATA30H3 or MATA31H3 is a co-requisite*
 - Will review some basics (if needed) in practical as we go along

Questions?

Survey (Large Classes)

Survey was performed in a large university lecture class.

When a bell rang, students were asked to write down what they were thinking or doing.



Survey

Approximately one-third are paying attention.




Survey

Approximately one-third are sleeping.




Survey

Approximately one-third are thinking about



Survey

- **Your first mission** (should you choose to accept it!) is to be awake get your minds off and onto physics.



Learning at the University Level

High School Level	University Level
<input type="checkbox"/> Reproduce Class	<input type="checkbox"/> Apply what is learned to new situations
<input type="checkbox"/> Class is everything	<input type="checkbox"/> Much learning occurs outside classroom
<input type="checkbox"/> Instructor programs students	<input type="checkbox"/> Instructor guides students
<input type="checkbox"/> Almost no readings	<input type="checkbox"/> Read for comprehension. Many hours
<input type="checkbox"/> Slow-paced style	<input type="checkbox"/> Fast-paced style