

LAKEHEAD UNIVERSITY

COURSE OUTLINE

INTRODUCTORY PHYSICS I: PHYSICS 1211 FALL 2017

LECTURE HOURS: M/W/F 10:30 am - 11:30 am ROOM BB 1075

CREDIT WEIGHT: Half Course (3-3, 0-0)

CO-REQUISITE: Mathematics 1151 or 1171

This course is a prerequisite for Introductory Physics II (Physics 1212)

COURSE DESCRIPTION:

A **calculus-based course** intended for students in the physical sciences, applied sciences and mathematics which includes the study of Newtonian mechanics for particles and rigid bodies, gravitation, accompanied by related laboratory work.

COURSE OBJECTIVES:

To develop a conceptual understanding of physical principles, develop reasoning and problem-solving abilities, and relate physical principles to real-life applications.

INSTRUCTOR: Apichart Linhananta

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E-mail: apichart.linhananta@lakeheadu.ca

Teaching Webpage: <http://alinhana.lakeheadu.ca>

[click on **Teaching Webpage** then on **Phys1211** for on-line course material]

OFFICE HOURS: M/W/F 1:00 PM to 4:00 PM; T/TH 1:00 PM to 5:00 PM

Additional consultation time may be arranged with your instructor. Please see instructor after class or contact by phone, e-mail or by calling the Physics Department at 343-8461

LABS:

Students are required to register in one of three lab sections: F1, F2, and F3. Sections F1 will be divided into sections F1A and F2A. Some students will be reassigned to different sections. However, efforts will be made to preserve the original time slots. **The first labs will begin on Tuesday 12 September. There will be a calculus tutorial on Tuesday 7 September in CB2010 during the lab section.**

SECTION	DAY	TIME	LABS
F1(A and B)	T	8:30 a.m. - 11:30 a.m.	Room CB-2010
F2(A and B)	T	2:30 p.m. - 5:30 p.m.	Room CB-2010
F3	T	7:00 p.m. - 10:00 p.m.	Room CB-2010

TEXTBOOKS (REQUIRED) :

Fundamental of Physics (10th edition, Extended), Halliday and Resnick, and Walker. **Available at the university's bookstore** (choice of hardcover or binder ready).

WileyPLUS Media Package required for **Online Assignments** and **Tutorials**.

This package is included with the purchase of the textbook.

Experimental Investigations in Introductory Physics, Lakehead University.

Available Online.

SUPPLEMENTARY MATERIALS:

A **hard-cover notebook**, with graph paper on the left-hand pages, is **required** for laboratory reports and can be obtained at the Lakehead University Alumni Bookstore.

A **scientific calculator** is required for tests and examinations.

SYLLABUS:

Kinematics of Particles (3.5 weeks) Chapter 1 to 4

Vectors, position, displacement, velocity and acceleration, uniformly accelerated motion, free-fall motion, projectile motion, relative motion, and uniform circular motion.

Particle Dynamics (4 weeks) Chapter 5 to 9

Force, mass, weight, Newton's Laws, friction, kinetic energy, work, potential energy and conservation of energy, systems of particles, linear momentum, collisions.

Rotational Kinematics and Dynamics (3.5 weeks) Chapter 10 to 12

