

## Educational Goals for Physics Students

There are several general goals that students completing a physics course should have. Among these general goals are

- (a) ability to perform a mathematical formulation of a physical system
- (b) ability to discuss (mathematically and linguistically) a physical system drawing upon a well-developed foundation built upon physical fundamentals.
- (c) ability to formulate complex arguments based upon physical foundations and which are testable by experimentation.
- (d) ability to produce technologically enabled students with an understanding of the basis for experimental design.

There are several rather specific goals that students completing a physics course should have. A non-inclusive topical course by course list primary outcomes is shown below.

### Phy390

#### **Phy 390 SEMINAR IN PHYSICS / 1 credit**

Students research areas from advanced physics and deliver oral presentations supported by a formal paper.

Prerequisite: MTH 220 and either PHY 220 or PHY 250 or permission of instructor. Course may be repeated for credit once.

This is the physics seminar course, introduced in the Spring of 2005 and taught for the first time in Fall 2005. As such, this course is in development. It is a one-hour course with a primary intention of providing students with the opportunity to discuss in detail physics problems.

#### **A non-exhaustive listing of primary learning outcomes follows:**

- (a) increased ability to provide short presentations of problems and topics which they have covered in previous physics courses.
- (b) ability to actively participate in intellectual discussions based upon their physics background at the conclusion of each presentation.
- (c) ability to perform independent research over one topic from advanced physics.
- (d) ability to write a technical paper covering the particular advanced topic.
- (e) ability to provide an extended presentation covering their advanced topic.
- (f) ability to actively participate in an intellectual discussion of advanced topics presented.