Course Description
This course will cover three important topics in physics; electromagnetism, optics and modern physics. At the beginning of the semester, we will explore the physics of waves, a familiar concept from PHYS 130, and apply it to electromagnetic waves. This will enable us to appreciate the field of optics, and learn the details of reflection, refraction, interference and diffraction. These topics will motivate us to delve into special relativity and quantum physics, two spectacular developments in the 20th century. We will learn some intriguing ideas such as, in some experiments, why we should consider light as particles and electrons as waves, culminating in the idea of wave-particle duality. In addition, we will also learn why hydrogen has discrete energy levels, and examine the basic concepts behind solid state physics, nuclear physics, and elementary particle physics.

Text Book
Physics by Giambattista, Richardson & Richardson (2nd edition)

Homework
Homework assignments will be posted on the web page every Wednesday, and will be due on Wednesday of the following week at the beginning of class. Late homework will be accepted but will be penalized 20%, and homework handed to me 48 hours after the due date will not be accepted. In solving the homework problems, you are encouraged to collaborate with your colleagues but the final solution should be entirely yours. If you have had difficulty with any of the graded homework problems, it would be to your advantage to re-work these. There will be a tutorial sessions held every Tuesday (7-9PM) at MSSC to address issues related to the homework that is due on the following Wednesday.

Exams
There will be a total of three exams (including the final exam) in this class. The final exam will be comprehensive. The following is the schedule for the exams.

- Exam 1 : Thursday, 24rd February 2011, 7.00-9.00 pm
- Exam 2 : Thursday, 14th April 2011, 7.00-9.00 pm
- Final : Monday, 9th May 2011, 8.30 -11.30 am

Pre/Post-Class Questions
In order to benefit fully from in-class lectures, you will be expected to read the material ahead of time. You will find the reading requirement for a specific lecture on the course web page. After you finish the required reading, you will be expected to answer a couple of questions pertaining to the material. You will do this using WebAssign, which can be accessed by going to http://www.webassign.net/login.html. Please read the handout on how to use this tool before you start using it. The answers have to be submitted before 9 am on the day of the lecture. Since I receive the graded results immediately, this will allow me to fine-tune my lecture by knowing your difficulties. Late submissions will not be accepted.

Grading
The final grade will be determined not on a curve, and will be weighted as follows.
Homework – 25%, Pre/Post-class questions – 10%,
Exam 1 – 20%, Exam 2 – 20%, Final – 25%

Disabilities
If some accommodations are needed due to some disabilities, please consult the Coordinator of Disability Services, Erin Salva (5453, salvae@kenyon.edu) for assistance.