Syllabus for Computational Physics Lab

PH 365

**Course Name:** Computational Physics Lab  
**Course Number:** PH 365  
**Course Credits:** 1  
**Prerequisites:** PH 213, This course is expected to be taken alongside the Paradigms.

**Course Catalog Description**

A project-driven laboratory experience in computational physics. Includes the use of basic mathematical and numerical techniques in computer calculations leading to solutions for typical physical problems. Topics to be covered will coordinate with the Paradigms in Physics course sequence.

**Student Learning Outcomes**

Students shall be able to:

- Write functions and entire programs in python  
- Apply the python programming language to solve scientific problems  
- Use the matplotlib and numpy packages  
- Model the physical systems studied in the course

**Course Content**

- Basics of python  
- Verlet method for classical particle  
- Plotting with matplotlib  
- Shooting particle in a box  
- Writing functions  
- Free energy of a liquid

**Learning resources**

There is no required textbook.
Evaluation of Student Performance

Students will be graded on attendance and participation in class.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at \url{http://ds.oregonstate.edu}. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Link to Statement of Expectations for Student Conduct

\url{http://oregonstate.edu/studentconduct/offenses-0}