

Python for Computing and Visualization (PHY 306)

Credit Hours: 3

Instructor: Muhammad Faryad, Adam Zaman Chaudhry

Schedule: Monday to Friday (10.15 AM – 12.15 PM)

This course will introduce the students to programming with python with focus on solving and visualizing scientific problems in basic sciences and engineering. The course will begin from fundamental programming concepts like iterations, decisions, abstractions, and recursion with emphasis on designing efficient programs. Examples from basic physics, chemistry, and biology as well as engineering will be included to enable students to apply the concepts in practical problems solutions using Anaconda distribution. A significant portion of the course will deal with learning to visualize the problems both using graphics and simulations of actual problems using vpython.

The course will be taught using student-centered approach where hands-on programming will be included in every class under the supervision of the instructors. The students will be taught basic algorithms and would be required to write programs in almost every class. Homework problems will also be assigned every week that will focus on somewhat complex problems than experienced in the class. Prior programming experience is not required for this course.