Course Number: CSC 206
Course Title: Python Programming
Number of Credits: 3
Schedule: Three hours of lecture/discussion per week.
Prerequisite: CSc 210 (can be taken concurrently), or consent of instructor.

Catalog Description

Python language programming, with basic principles of interpretative languages. The use of basic Python constructs and standard libraries (e.g. networking, regular expressions, GUI). Application development such as web servers and games.

Expanded Description

This course is designed: a) to give students a thorough understanding of the Python programming language and it's rich set of libraries; b) to expose students to applications where Python programming is effective (e.g. application development, scripting, systems administration) and c) to introduce students to pros and cons of scripting vs. compiled programming languages. Python is an interpreted, inherently object oriented dynamic language which has been gaining popularity for the past several years. It's widely used by organizations such as NASA, Google and Industrial Light and Magic, among others. It has easy to understand syntax which allows programmers to develop programs faster and be more efficient. Python has proven to be equally as useful for small scripts as well as large scale software systems. The core language will be studied in detail as well as its standard libraries (networking, regular expressions, GUI) and third party extensions. Students will complete number of real-world programming assignments (web crawler, games, testing framework) during the course that will give them a firm grasp of the language. Due to Python's ease of use, students will gain expertise with many details of the language as well as programming fundamentals in a short period of time.

Course Objectives and Role in Program

The objectives of this course include:

- Teach an example of scripting and interpretative language and compare it with classical compiled programming languages
- Introduce the student to Python programming fundamentals
- Expose students to application development and prototyping using Python
- Learn to apply fundamental problem solving techniques

Learning Outcomes

At the end of this course students will

- Understand principles of Python
- Understand the pros and cons on scripting languages vs. classical programming languages (at a high level)
- Understand object oriented programming
- Understand how Python can be used for application development as well as quick networking, QA and game programming

Topics Covered

- Language syntax and fundamentals
- Data types
- Exception handling and events
- Functions and control structures
- Object oriented programming
- Text processing and regular expressions
- Networking
- Graphical user interfaces
- Game development (using 3rd party library)

Method of Evaluation

Student learning will be evaluated on the basis of

- Completeness and quality of programming assignments.
- Grade on midterm examination
- Grade on final examination
- Class participation.

The weight assigned to each element of evaluation will be determined by the instructor of the course on the first day of the class.

Required Textbooks

Core Python Programming (2nd Edition) by Wesley J. Chun

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