CS 201 Introduction to Programming with Python: SYLLABUS

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Course Description

The course provides introduction to programming basics, problem-solving methods and algorithm development. The course includes procedural and data abstractions program design, debugging and testing. The course covers data types, control structures, functions, parameter passing, library functions, collectors, inheritance and object oriented design. Examples and home assignments implemented in Python.

Course Objectives and Learning Goals

The students should be able to

- Understand basic principles of computers
- Understand the programming basics
- Readily use the Python programming language
- Apply various data types and control structure
- Understand the object-oriented program design and development
- Understand and begin to implement code

Resources

Contemporary programming languages like Python enjoy rich online documentation. Indeed, they are built on the premise that programmers are continually in contact with such documentation, and are not expected to memorize any but a small fraction of it. The textbook for the course is below.

"Starting Out with Python plus MyProgrammingLab with Pearson eText --Access Card Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256"

Week-by-Week Topics

Weekly Activities

Each week you will need to:

- Attend the lectures
- Read recommended pages in the textbook (listed below)
- Take the module quiz
- Complete the homework assignment

Date	Topic	Readings	Deliverables
05/23	Introduction to Computers and Programming: - Introduction - Hardware and Software - How Computers Store Data - How a Program Works Input, Processing, and Output - Designing a Program - Input, Processing, and Output - Variables - Reading Input from the Keyboard - Performing Calculations	Chapter 1 and 2	
5/25	The if Statement - The if-else Statement - Comparing Strings - Logical Operators	Chapter 3	Assignment #1
5/30	Repetition Structures - The while Loop - The for Loop	Chapter 4	Quiz #1 Assignment #2
6/01	Functions - Defining and Calling a Function - Designing a Program to Use Functions - Local Variables - Passing Arguments to Functions - Global Variables and Global Constants	Chapter 5	
6/06	Files and Exceptions - Introduction to File Input and Output - Processing Files - Exceptions	Chapter 6	Quiz #2 Assignment #3
6/08	Lists, Tuples and Strings - Sequences - Introduction to Lists and Tuples - Slicing - Finding Items in Sequences with the in Operator - Sequences Methods and Functions - Lists specific Methods - String specific Methods	Chapter 7 and 8	
6/13	Dictionaries and Sets - Dictionaries - Sets - Serializing Objects	Chapter 9	Quiz #3 Assignment #4
6/15	Classes and Object-Oriented Programming - Procedural and Object-Oriented Programming - Classes - Working with Instances	Chapter 10	

	- Techniques for Designing Classes		
6/20	Inheritance - Introduction to Inheritance - Polymorphism	Chapter 11	Quiz #4 Assignment #5
6/22	Recursion - Introduction to Recursion - Problem Solving with Recursion	Chapter 12	
6/27	GUI Programming - Graphical User Interfaces - Using the tkinter Module - Display Text with Label Widgets - Organizing Widgets with Frames - Button Widgets and Info Dialog Boxes - Getting Input with the Entry Widget - Radio and CheckButtons	Chapter 13	Quiz #5 Assignment #6
6/29	Final Exam		

GRADING:
Programming assignments/Homework - 35%
Quizzes   - 35%
Final   - 30%

PROGRAM EVALUATION CRITERIA
Program correctness - 80%
Documentation - 10%
Readability - 10%