CSE1309X : Introduction to Programming Using Python

Course start date: Jan. 10, 2016

Course end date: Mar. 17, 2016

This nine week course is an introduction to Python programming language. The course is open to all learners who hope to gain an understanding of the basic components of computer programming. No previous knowledge of programming is required.

You will learn basic concepts and terminologies such as variables, operators, expressions, conditional statements, loops, and functions. Lessons include videos, notes, solutions, references, tables, and exercises.The exercises in each lesson are based on interactive hands-on questions and programming practices. These exercises are designed to help you understand the components of Python language while incrementally improving your analytical and programming skills. **Exercises are not graded,** they do not have due dates, and they are available at all times.

There are also graded modules which include 4 assignments, 6 quizzes, a midterm exam, and a final exam. **Graded modules have release dates and due dates**. In order to earn a certificate you must have a score greater than **60%** in the graded modules.

Grading Policy

Module(s)	Percent (Weight)	Comment
Assignments (4)	25%	The lowest assignment grade will be dropped
Quizzes (6)	25%	The two lowest quiz grades will be dropped
Midterm Exam.	25%	
Final Exam.	25%	

Due Dates

All graded modules are due on the specified date at **23:59 UTC**. There will be no extension (grace period) for the graded modules.

(UTC, which is also known as the Greenwich Mean Time is the Coordinated Universal Time. Please make sure that you convert your local time to UTC.)

Course Schedule

	Lesson	**Unit**
Week 1	Python Installation and Environment	Installing Python on Windows
		Installing Python on Mac
		Installing Python on Linux
		Python Shell & IDLE
	Getting Started	Python Basics
		Algorithms and Programs
		Your First Program
		Using the Text Editor
Week 2	Variables and Identifiers	Variables and Identifiers
		How to Name Your Identifiers
		Use Descriptive Identifiers and Comments
		Variable Types
		Get Input from User
	Statements	Equal Sign
		Statements, Assignments, and Expressions
	List Basics	Lists
		List Basics Exercise 1
Quiz 1	Release: Jan. 24, 2016 (00:01 UTC)	Due: Jan. 31, 2016 (23:59 UTC)
Week 3	Operators	Operators
		Arithmetic Operators and Precedence
		Relational Operators
		Logical Operators
		Membership Operators
	Conditionals	Conditionals if else
		Conditionals if elif else

Quiz 2:		Release: Jan. 31, 2016 (00:01 UTC)	Due: Feb. 7, 2016 (23:59 UTC)
Week 4	Loops	While Loop	
		For Loop	
		Continue and Break	
		Nested Loops	
	Functions	Functions	
		Functions Analogy	
		Modules	

Assignment 1	Release: Feb. 7, 2016 (00:01 UTC)	Due: Feb. 14, 2016 (23:59 UTC)

Quiz 3	Release: Feb. 7, 2016 (00:01 UTC)	Due: Feb. 14, 2016 (23:59 UTC)

Week 5	List Manipulation	List Methods
	List slicing	List Slicing
		List Slicing Negative Index
		List Slicing with Step
		List Slicing Default Index

Midterm Exam	Release: Feb. 14, 2016 (00:01 UTC)	Due: Feb. 21, 2016 (23:59 UTC)

Week 6	Strings	Strings
		Character Encoding
	String Methods	String Methods
		Strings Practice 1
		Strings Practice 2

Assignment 2	Release: Feb. 21, 2016 (00:01 UTC)	Due: Feb. 28, 2016 (23:59 UTC)

Quiz 4	Release: Feb. 21, 2016 (00:01 UTC)	Due: Feb. 28, 2016 (23:59 UTC)

Week 7	Using another IDLE	Why Use Another IDLE
		Step by step guide to install Wing IDE 101
	Multi-Dimensional Lists	Multidimensional Lists
	Dictionaries	Dictionaries
		Dictionary Methods

Assignment 3	Release: Feb. 28, 2016 (00:01 UTC)	Due: Mar. 6, 2016 (23:59 UTC)

Quiz 5	Release: Feb. 28, 2016 (00:01 UTC)	Due: Mar. 6, 2016 (23:59 UTC)

Week 8	File I/O	File IO
		File Acess Modes
		File Position
	Tuples	Tuples
		Tuples in Function Returns
	Formatting	Formatting

		Formatting Positional
		Formatting Width Precision Type
		Formatting Practice
		Formatting Fill Align
		Formatting Sign
Assignment 4　Release:　Mar. 6, 2016 (00:01 UTC) Due: Mar. 13, 2016 (23:59 UTC)		
Quiz 6　　　Release:　Mar. 6, 2016 (00:01 UTC) Due: Mar. 13, 2016 (23:59 UTC)		
Week 9	More about Functions	Namespaces
		Scope
		Recursive Functions
	Error Handling	Errors and Exceptions
		Exception Handling
Final Exam.　Release:　Mar. 10, 2016 (00:01 UTC) Due: Mar. 17, 2016 (23:59 UTC)		

Learning Outcomes

Upon completing this course you will be able to:

- Understand Python expressions and statements
- Get user-input data and manipulate it.
- Understand simple and compound data types such as integers, floats, strings, lists, dictionaries, and tuples.
- Implement structures such as if statements and loops
- Read from and write to external data files using Python.
- Implement functions and call built-in Python functions.
- Import and use library function modules from the Python library.
- Handle programming errors and exceptions.
- Implement useful and fun programs such as searching, sorting, and solving Sudoku and crossword puzzles.