THOMPSON RIVERS UNIVERSITY

Course Outline

Department of Computing Science
Faculty of Science

COMP 2210
Programming Methods (3, 1, 0)
Fall 2015

Instructor: **Phone/Voice Mail**:
Office: **E-Mail**:

Calendar Description

Students are introduced to the programming environments of visual and scripting language along with tools and techniques of software development process. Students learn a combination of visual programing using C# and scripting language using Python in this course. Students learn the techniques of event driven visual application development, database and web connectivity, scripts, functions, strings, tuples and text file handling.

Learning Outcomes:

Upon successful completion of the course, the student will demonstrate the ability to:

1. Explain a clear description of the software development process.

2. Develop event-driven Graphical User Interface application.

3. Construct solutions for small- to medium-sized problems using Python.

4. Understand and describe the concept of designing, writing, debugging and testing software applications.

Prerequisites

Texts/Materials

Text Books:

B-1:   Dietal and Dietal, *Visual C# 2012 How to Program,* Pearson 5th Ed. ISBN-10: 0-13-337933-7

B-2:   *http://www.greenteapress.com/thinkpython/thinkCSpy.pdf*

Syllabus - Lecture Topics:

Topics	Book	Week
Introduction to modular program development, Scripts and functions in python	1-3 (B-2)	1
Functions and iterations	4-6 (B-2)	2-3
Strings & Lists handling	7-8 (B-2)	4
Tuples and Dictionaries	9-10 (B-2)	5-6
Managing text files	11 (B-2)	7
GUI application development with windows forms	14-15 (B-1)	8-9
Web connectivity	23 (B-1)	10
Files and streams	17 (B-1)	11
Connecting to database	22 (B-1)	12
Testing and documenting the software, developing user and system document	Instructor Notes	13

Syllabus - Lab Topics:

Lab #	Topics	Tool	Week
1	Working with Python environment	Python	1
2	Making python scripts and functions	Python	2
3	String handling	Python	3
4	Tuples management	Python	4
5	Developing file based application by using text files	Python	5
6	Combination of text files and functions	Python	6
7	Working with Visual Studio to make event driven console application	C#/Visual Studio	7
8	Working with Visual Studio to make event driven console application	C#/Visual Studio	8
9	Visual form development Web controls	C#/Visual Studio	9
10	Database connectivity	C#/Visual Studio	10

11	File handling	C#/Visual Studio	11
12	Connecting all together	C#/Visual Studio	12

ACM / IEEE Knowledge Area Coverage

Knowledge Areas that contain topics and learning outcomes covered in the course

Knowledge Area	Total Hours of Coverage
Algorithm and design	4
Fundamental programming constructs	4
Fundamental programming concepts	4
Visual Software Development	6
Project Development Concepts	6
Database Connectivity	6
Testing and documentation	6

Body of Knowledge coverage

KA	Knowledge Unit	Topics Covered	T1 hours	T2 hours	Elective hours
	Algorithm and Design	[Core-Tier1] • Role and purpose of algorithms • Functionality of a typical OS • Mechanism to support client/server model, hand-held devices • Design Issues • Influence of security, networking, multimedia, windowing systems	3	0	0
	Developing Console Applications	[Core-Tier1] • Lists • Arrays • Python Implementation	3	0	0
	Fundamental Programming Concepts	*Topics:* • Python shell files • Tuples and Dictionaries	6	0	0
	Visual Software Development	[Core-Tier2] • Basics of Event Driven Programming • Web Controls implementation	0	6	0

		• Visual software development using Visual Studio • Deadlines and real-time issues			
	Project Development Concepts	[Core-Tier2] • Review of project development life cycle • Development of the required documentation	2	4	0
	Database Connectivity	• Need of databases • Connecting with database • Transferring data amongst databases		6	0
	Testing and documentation	• Test cases • Making documentations – project proposal & Technical document • Testing/Test cases • Software maintenance		6	