University of Nicosia, Cyprus

Course Code	**Course Title**	**ECTS Credits**
COMP-213	Visual Programming	6
Department	**Semester**	**Prerequisites**
Computer Science	Fall, Spring	COMP-113
Type of Course	**Field**	**Language of Instruction**
Elective	Computer Science	English
Level of Course	**Year of Study**	**Lecturer(s)**
1st Cycle	2nd	Dr Philippos Pouyioutas
Mode of Delivery	**Work Placement**	**Co-requisites**
Face-to-face	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- develop algorithmic, object-based and event-driven thinking and problem solving skills.
- introduce the concepts of designing a graphical user interface and associate the interface with the program code.
- introduce the concepts and techniques of programming in general and Visual, Object-Oriented, and Event-Driven programming in a specific Visual Integrated Development Environment.
- develop programs that responds to exception conditions raised during execution.
- introduce the concepts of Visual Programming, namely Controls and Constructs, Variable, Decisions, Loops, Arrays, Multi-form applications, File Handling, and integrating components like Web forms, Graphics, Animation, and Sound.

Learning Outcomes:

After completion of the course students are expected to be able to:

1. analyze problems and find abstract solutions
2. apply components based concepts and problem solving techniques
3. critically asses the object-oriented, GUI-based, and event driven programming paradigms
4. translate an abstract solution into an application with the appropriate user interface
5. develop (write/debug/correct) applications using an Integrated Development Environment
6. reuse and integrate components into the solution application

Course Contents:

1. Problem solving techniques; abstract programming
2. Object-oriented, event-driven, GUI application programming concepts
3. The Visual Integrated Development Environment

4. User interface design
5. Linking the program code with the interface
6. Writing and Debugging GUI programs; syntax errors, run-time errors, logic errors
7. Visual controls and user interface design, Variables and constants; types; scope and lifetime of variables and constants, Calculations and formatting of data, Decisions and conditions; selection statements, Procedures and Functions; parameters and arguments, Multiform projects; scope of variables and procedures; modules, Repetition statements
8. Arrays; Single and Multidimensional Arrays
9. Web Applications; designing web forms
10. Data files; file manipulation
11. Integrating components like Graphics, Animation, and Sound

Learning Activities and Teaching Methods:

Lectures, lab presentations, lab tutorials, practical exercises, assignments

Assessment Methods:

Homework, Projects, Final Exam.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Anita C. Millspaugh, Julia Case Bradley	Programming in Visual Basic 2008	McGraw Hill	2008	978-0-07-128089-8

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Anita C. Millspaugh, Julia Case Bradley	Programming in Visual Basic 2008 on-line material http://highered.mcgraw-hill.com/sites/0073517208/student_view0/index.html	McGraw Hill	2010	