Course Syllabus

1. Course number and name: 020IF2NI3 Programming 2

2. Credits and contact hours: 4 ECTS credits, 2x1:15 course hours

3. Instructor's or course coordinator's name: Maroun BOULOS

4. Text book, title, author, and year
   a. other supplemental materials:
      Professor textbook and course material

5. Specific course information
   a. catalog description :
      This course covers the problem of creating graphical interfaces for simple programs by introducing the most commonly used widgets in stand alone applications.
      It also covers the basic concepts of object-oriented programming and their application to data abstraction by introducing the concepts of object instantiation, public/private/static attributes and methods, inheritance, and polymorphism.

   b. prerequisites : 020IF1NI2 Programming 1

   c. Required/Elective/Selected Elective: Required

6. Specific goals for the course
   a. specific outcomes of instruction
      - Recognize the specific role of different widgets in graphical user interfaces (GUIs)
      - Label some events in GUIs
      - Write code for event handling in GUI s
      - Sketch a simple GUI for a given problem
      - Write code for simple GUI programs
      - Employ error handling in programs
      - Use classes for data abstraction
      - Explain and apply class constructors
      - Modify the states of class attributes
      - Explain the role of static members and programmatically modify their states
      - Distinguish the roles of private members from public ones
      - Apply operator overloading
      - Recognize inheritance from a defined design of classes
      - Apply inheritance when needed

- Employ polymorphism

b. KPIs addressed by the course.

KPI	c2	k2			
Covered	x	x			
Assessed	x	x			
Give Feedback	x	x			

7. Topics and approximate lecture hours :

- 4 Lab sessions that cover advanced drills from the course's prerequisite material (4 Lectures)
- Introduction to Graphical User Interfaces (GUI) (1 Lecture)
- Windows, widgets, callbacks (4 Lectures)
- Layouts in GUIs (2 Lectures)
- Advanced GUI : menus and multiple windows (3 Lectures)
- Error handling in programs (2 Lectures)
- Introduction to Object Oriented Programming (1 Lecture)
- Methods and attributes (3 Lectures)
- Constructors (1 Lecture)
- Encapsulation (2 Lectures)
- Operator Overloading (1 Lecture)
- Inheritance (3 Lectures)
- Polymorphism (1 Lecture)