



## **Faculty of Computer Studies**

**MT262 B: Putting Computer Systems to work (Part B)**

### **Course Guide**

## **MT262B: Putting Computer Systems to work (Part B)**

**Credit Points/ Credit Hours:** 15/4

### **Pre-Requisites:**

MT262A

### **Short Description:**

The course tackles the problem of how to implement C++ programs using a graphical interface. It is recommended to learn and use the Borland C++ Builder (or any equivalent C++ compiler with appropriate GUI) in order to carry out visual solutions to particular problems. The course introduces the Builder's visual toolkit and the visual component library with its methods and events. It presents the practical steps to be followed and the corresponding classes to be used in order to build event-driven programs. It introduces computer graphics components and shows how to manipulate these components. Finally, the course presents the development steps on a computer emulator.

### **Aims:**

The aims of this course are:

- To enable students to implement C+ programs using GUI.
- To introduce students to event driven programming.
- To introduce students to computer graphics.

### **Learning outcomes:**

The Learning Outcomes of this course are given below:

#### **A. Knowledge and understanding of:**

- A1. The modified version of the model-view-controller approach to program development.
- A2. The use of an object toolkit for GUI programming.
- A3. Techniques of debugging for detection of semantic mistakes in code.
- A4. The use of software emulation of physical systems.

#### **B. Cognitive skills:**

- B1. To be able to analyze specifications of small software tasks
- B2. To be able to select suitable software components for a task and adapt them if necessary
- B3. To be able to extract information from sources such as object toolkit documentation

**C. Key skills:**

- C1. To be able to apply software engineering process used to develop code;
- C2. To be able to improve own learning and performance.
- C3. To be able to develop event driven programs.

**D. Practical and professional skills:**

- D1. To be able to apply the principles, concepts and techniques of the course in the development of programs given a tight specification.
- D2. To be able to extend the concepts and techniques of the course to more open-ended problems.
- D3. To be able to build and test emulators.

**Course Structure:**

The MT262A course consists of 2 blocks of study consisting of 4 units each.

**Table of Contents:**

**Block III Developing Visual Programs**

- Unit 1 Graphical User Interfaces
- Unit 2 Designing Interfaces
- Unit 3 Graphical Output
- Unit 4 Flexible Classes

**Block IV Applications**

- Unit 1 Introduction to Computer Graphics
- Unit 2 Graphing Stability
- Unit 3 Emulation
- Unit 4 Where Next? (includes summary of blocks and omissions and pointers)

**Assessment:**

- Tutor-marked assignments: 2 TMAs
- Quiz/Mid-term Assessment: 1 MTA
- Final Exam: 1 Final Exam

**Grade Distribution:**

- Tutor-marked assignments: 35%
- Quiz/MTA: 15%
- Final Exam: 50%

**Course Calendar** (Indicative Version):

There are 2 Tutor Marked Assignments, 1 Midterm Assessment and 1 Final Exam associated with this course. Course result is determined on the basis of student's scores in TMAs, Midterm Assessment and the Final Exam. To be sure of passing the course, the student needs to score at least 40% (at least 20% in TMA and Quiz/MTA and at least 20% in the final exam) in the above 3 components and achieve an overall average score of 50%.

<b>Study Week</b>	<b>Course Material</b>	<b>Assignment / Assessments</b>
0	Welcome	
1	Block III Unit 1, Graphic User Interfaces	
2		
3	Unit 2, Designing Interfaces	
4		
5	Unit 3, Graphical Output	
7	Unit 4, Flexible Classes	
8		Quiz / MTA
9	Block IV Unit 1, Introduction to Computer Graphics. Unit 2, Graphing Stability	TMA01 due date
10		
11	Unit 3, Emulation	
13	Unit 4, Where Next?	
15	Revision	TMA02 due date
16	Final Exam Period	