



## **SCHOOL OF ARCHITECTURE, COMPUTING AND ENGINEERING**

### **Submission instructions**

- Cover sheet to be attached to the front of the assignment
- Question paper to be attached to assignment
- All pages to be numbered sequentially
- Assignment to be stapled **ONLY ONCE** in the top left-hand corner
- Assignment **NOT** to be placed in a folder, plastic sleeve of any kind or bound in any other form.
- Computer discs to be attached to the work in an envelope or purpose made sleeve adhered to the rear

<b>Module code</b>	<b>SD3048</b>
<b>Module title</b>	<b>Programming Paradigms</b>
<b>Module leader</b>	<b>Mohamed Ismail</b>
<b>Assignment title</b>	<b>Woodpecker Airlines</b>
<b>Weighting</b>	<b>50%</b>
<b>Handout date</b>	<b>February 16<sup>th</sup> 2012</b>
<b>Submission date</b>	<b>May 16<sup>th</sup> 2012</b>
<b>Learning outcomes assessed by this assignment</b>	<b>1, 2, 5</b>



## **Assignment** **SD3048 – Programming Paradigms**

### **Instructions**

This is an individual assignment carrying 50% of the total marks available for the module.

Submit your assignment in hard and soft copies. Make sure name and ID is written on the cover sheet.

Format of the report:

1. Font size: 14 point for title/heading, 12 point for contents and 8-9 point for headers/footers
2. Font face: Arial
3. Line spacing: 1.5
4. Proper alignment of your paragraphs, and necessary page set-up.
5. The Report should not exceed 2000 words.

You are required to write a report completing the task given below (500 words max.) and develop a program for a given case study and its deliverables mentioned below (1500 words max.).

### **Task:**

Compare and contrast the following:

- a. the scripting and imperative programming paradigms. Identify applications for which each of the paradigms that these are particularly strong. **[7 marks]**
  
- b. static typing and dynamic typing. List out which of the programming languages (PLs) fall under each of these typing and briefly explain the concept of typing selecting any one PL from each. **[8 marks]**

### **Case Study:**

A new Airline named 'Woodpecker Airlines' is planning to operate flights to space enthusiasts for a joy ride to outer space. They are at present in the process of developing an online reservation system. This project has been assigned to you.

The automation software should be able to perform the following functions:

1. Booking a flight.
2. Rescheduling a flight to different date/destination.
3. Cancelling a reserved flight.
4. Adding a new flight to service.
5. Removing a flight from the service.

### **Enhancements**

Attempts at enhancing the above will be rewarded but students should be careful to avoid spoiling the implementation by attempting to introduce additional complex features, which do not actually work correctly.

## **Deliverables:**

1. A disc consisting of a running application **[2 marks]**
2. A 1500 words report with the following components
  - a. Comparative evaluation of different/suitable paradigms for the given application **[6 marks]**
  - b. Your choice of paradigm and why you choose that particular paradigm **[6 marks]**
  - c. If you were to choose an alternative programming language other than the one you have chosen for the implementation, which one would that be and why? [Second best choice]. **[4 marks]**
  - d. Algorithm design of your application. **[4 marks]**
  - e. Printed source code of the application with sample screenshots. **[4 marks]**
3. Application has good HCI principles **[2 marks]**
4. Application with good GUI interface **[2 marks]**
5. Proper structuring of the report **[2 marks]**
6. Enhancements **[3 marks]**

## **PLAGIARISM**

Students should read carefully the notice on plagiarism placed on the student notice board.

Any use of materials from other sources/persons should be clearly indicated and references given in the text.

Students are also required to complete the form re: Plagiarism, which is available from the Level 4 Service Counter.



## **MARKING CRITERIA**

**MODULE CODE** : SD3048

**MODULE TITLE** : PROGRAMMING PARADIGMS

**EXAM BAND** : SEMESTER B

### ***COURSEWORK – Marks Breakdown:***

Marks will be awarded based on the following criteria:

1. A disc consisting of a running application **[2 marks]**
2. A 1500 words report with the following components
  - a. Comparative evaluation of different/suitable paradigms for the given application **[6 marks]**
  - b. Your choice of paradigm and why you choose that particular paradigm **[6 marks]**
  - c. If you were to choose an alternative programming language other than the one you have chosen for the implementation, which one would that be and why? [Second best choice]. **[4 marks]**
  - d. Algorithm design of your application **[4 marks]**
  - e. Printed source code of the application **[4 marks]**
3. Application has good HCI principles **[2 marks]**
4. Application with good GUI interface **[2 marks]**
5. Proper structuring of the report **[2 marks]**
6. Enhancements **[3 marks]**