Module 9: HCI & GUI Programming

Stage	1
Semester	2
Module Title	HCI and GUI Programming
Module Number/Reference	9
Module Status (Mandatory/Elective)	Mandatory
Module ECTS credit	5
Module NFQ level (only if applicable)	8
Pre-requisite Module Titles	None
Co-requisite Module Titles	None
Is this a capstone module? (Yes or No)	No
List of Module Teaching Personnel	Mr Barry Denby Mr Paddy Fahy

Contact Hours				Non-contact Hours			Total Effort (Hours)
Lecture	Practical	Tutorial	Seminar	Assignment	Placement	Independent work	
24		12		32		32	100

Allocation of Marks (Within the Module)					
	Continuous Assessment	Project	Practical	Final Examination	Total
Percentage contribution	50%			50%	**100%**

Intended Module Learning Outcomes

On successful completion of this module the learner will be able to:

1. write programs for a GUI based environment
2. explain how programs interact with the GUI based environment
3. discuss aspects of good interface design
4. identify the need for custom controls and demonstrate their implementation
5. demonstrate the application of correct HCI concepts when designing computer interfaces.
6. demonstrate the features of event-driven programming.

Module Objectives

This module enables the learner to critically evaluate the importance of the human aspect of system development. The learners learn about the key issues involved in designing computer interfaces. The learner experiences the skills needed to program for a GUI based environment.

Module Curriculum

Introduction and motivation
- Overview of the subject
- Why do we need HCI?
- How do we evaluate the usability of systems?

Event-driven programming overview
- Principles of event-driven programming
- Procedure types
- Passing by reference verses passing by value.

Presentation of information to the user
- Layout guidelines
- Flow of information
- Principles of colour theory
- Methods for displaying different categories of information

Accepting information from the user
- Field entry
- Validation of data
- Multiple inputs
- Gathering information for the mouse
- Restricting input options

Testing and verification
- Principles of testing
- Different testable aspects of an application
- User testing

- QA testing

Third party software
- Allowing applications to communicate
- Creating links between applications

Reading Lists and other learning materials

Recommended Reading

Dix, A., Human-Computer Interaction (3rd edition), Prentice-hall, 2003
Itten, J., Design and Form, Wiley, 1975
Johnson, J., Human computer Interaction, McGraw-Hill, 1992

Secondary Reading

Additional reading as recommended by lecturer, appropriate to topic and to each learner's area of research.

Module Learning Environment

Lectures are carried out in class rooms / lecture halls in the College. Lab tutorials are carried out in computer labs throughout the Campus. All have the software required to deliver the programme.

Library

All learners have access to an extensive range of physical and electronic (remotely accessible) library resources. The library monitors and updates its resources on an on-going basis, in line with the College's Library Acquisition Policy. Lecturers update reading lists for this course on an annual basis as is the norm with all courses run by Griffith College.

Module Teaching and Learning Strategy

Learners are taught using a combination of classes and practicals. Classes are used to explain the concepts, and show examples of theory covered being done correctly and incorrectly. The module is though through explanation of he topics covered and an investigation of case studies to illustrate the idea being discussed.

Practicals give the learners the opportunity to implement the ideas what are discussed in class and to practice the principles of good HCI.

In addition to classes and practicals, learners need to put in at least two hours homework each week.

Module Assessment Strategy

The module assessment consists of a short assignment, a group project and a final examination.

Element No	Weighting	Type	Description	Learning Outcome Assessed
1	25%	Assignment 1	A practical assignment to asses understanding in User Interface design and construction	1,2,4
2	25%	Assignment 2	A practical assignment to asses advanced understanding in User Interface design and construction	1,2,3,4
	50%	Closed Book Examination	End of Module Examination	1-6