

CSC932 Programming and User Accessibility

Prerequisites

CSC931 or CSC941 (or at the discretion of the Head of Department)

Credits

22 credits at SCQF level 8

Learning outcomes

By the end of the module, the students will:

- Understand the principles of programming in a general-purpose, high level, object-oriented, imperative programming language: Java 1.6.
- Know the steps involved in running a program written in a high-level language.
- Be able to write, compile and test short Java 1.6 applications using the BlueJ integrated development environment.
- Be able to apply 'good practice' in program construction, and internal program documentation.
- Have a practical knowledge of programming graphical user interfaces.
- Understand the basic principles of usability and good design, particularly as applied to program and Web interfaces, but also in more general situations.
- Know and be able to apply practical guidelines for making interfaces more usable.
- Understand the basics of computing accessibility issues for the disabled.

Transferable Skills

The skills set out in the Computing Science Undergraduate Student Handbook are all relevant to this module. In particular, the module will develop skills in seeing how given repertoires of standard techniques and methods, such as the resources of a particular programming language or particular data-types, can be used to solve complex problems and awareness of how information is stored and processed in computers. Students will also have an appreciation of the wider issues of design for accessibility.

Contents

- Basic imperative programming concepts 23 Lectures
 - 'Event driven' applications
 - Graphical user interface components
 - Variables, types, assignment, expressions
 - Control by sequencing, selection and repetition
 - Classes, methods and inheritance
 - Arrays
 - Program construction by incremental development
 - Testing, debugging
- User accessibility 7 Lectures
 - Usability and the basic principles of good design
 - Practical guidelines for program and Web interfaces
 - Accessibility for the disabled: software, equipment, legal and ethical issues

Some of these topics will be covered through directed reading and unsupervised practical work outside formal lectures.

Textbooks

- Java for Students, 5th edition, D Bell & M Parr, Prentice Hall 2006, ISBN 0-13-173579-9 (**this is an essential purchase**). **Note: Editions earlier than the 4th are NOT suitable.**
- *The Design of Everyday Things*, D Norman, Basic Books, 2002, ISBN 0-465-06710-7 (**background reading**).

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Assessment

Practical session checkpoints: 10%; Assignment 1: 20% (Java); Assignment 2: 20% (Java); Examination: 50%

The final grade for the module is obtained from a weighted average of the marks for the four assessment components.

Requirements

In order to be considered for a pass grade for the module you must

- Submit the two programming assignments
- Attend the examination
- Obtain at least 30% of the marks available in the examination (at least grade 4C in the examination)

Coursework assignments submitted late will be accepted up to five days after the submission date (or expiry of any agreed extension) but the grade will be lowered by one grade point per day or part thereof. After five days the piece of work will be deemed a *non-submission*, and will be awarded No Grade. If you obtain No Grade for either of the programming assignments you will be awarded No Grade *for the module as a whole*. This rule may be relaxed for students who can show good cause for failure to meet the requirement. 'Good cause' may include illness (for which a medical certificate or other evidence will be required).

If a student is unable to attend the exam, he/she must apply to the Student Programmes Office for a Deferred exam. The Student Programmes Office has established procedures for this: further information is available via the Student Portal.

If a Repeat examination is taken (First Degree Regulations, Regulation 11), then the final grade is obtained from the mark for that repeat examination together with the original checkpoint and assignment marks. The grade obtained following a repeat examination is limited to 3C at best, and will not be lower than the original grade.