

MODULE SPECIFICATION

- 1. The title of the module**
CO331 Visual Programming
- 2. The Department which will be responsible for management of the module**
Computing Laboratory
- 3. Start date of module**
September 2005
- 4. The cohort of students (onwards) to which the module will be applicable.**
2009/10
- 5. Number of students expected to take the module**
60
- 6. Modules to be withdrawn**
None
- 7. The level of the module**
C
- 8. The number of credits which the module represents**
15
- 9. Which term(s) the module is to be taught in (or other teaching pattern)**
This module may be delivered in Term 1 of the first year.
- 10. Prerequisite and co-requisite modules**
There are no specific pre- or co-requisite module requirements
- 11. The programmes of study to which the module contributes**
BSc Information Technology
BSc Business Information Technology and their associated Year in Industry programmes
- 12. The intended subject specific learning outcomes and, as appropriate, their relationship to programme learning outcomes**
This module introduces students to a range of elementary programming skills necessary to exploit the potential of a number of PC packages.
It introduces a visual programming language and gives students the experience of creating a simple graphical user interface. It also aims to develop design and

coding skills necessary to create basic programs within an applications environment.

Students who successfully complete this module will be able to:

- a. Use a visual programming language to write event-driven programs [A2, B5]
- b. Write programs with the support of an integrated development environment. [A2]
- c. Structure data and information as class definitions. [A2]
- d. Use the basic programming language elements and constructs available in a visual programming language [A2]
- e. With guidance, use object-oriented analysis, design and implementation to identify and solve practical programming problems. [A4, C1]
- f. Test solutions to programming problems. [A4, C2]
- g. Use a range of software development tools.[C4]

13. The intended generic learning outcomes and, as appropriate, their relationship to programme learning outcomes

Students who successfully complete this module will be able to:

- a. Recognise the trade-offs involved in design-choices. [B1]
- b. Recognise and be guided by basic professional issues and guidelines. [B6]
- c. Make use of IT facilities for solving problems. [C3]
- d. Be able to manage their own learning and development, through self-directed study and working on continuous assessment. [D5]
- e. Make effective use of a range of tools, such as a web browser and email client. [D3]

14. A synopsis of the curriculum

This module provides an introduction to visual and event-driven programming using an object-oriented paradigm. Fundamentals of classes and objects are introduced, and key features of class descriptions: constructors, methods and instance variables. Method implementation through assignment, selection control structures, iterative control structures and other statements is introduced. Topics covered include

- A Program Development Environment; compile time and run time
- Project structure –modules and classes
- Forms class and controls – command buttons, text boxes, labels; list and combo boxes; option buttons and frames; scroll bars; system clock and timer control; naming conventions; common control properties; changing the control focus
- Creating simple user interfaces based on one or more forms
- Event-driven programming – methods and functions; use of library classes
- Data types for constants and variables
- Assignment; simple arithmetic calculations; Selection and looping statements
- Class definitions – parameter passing, passing by reference and value
- Scope and lifetime - Local, Private and Public
- Arrays - declarations; dynamic arrays
- Simple file i/o - opening and closing, reading and writing
- Error handling and debugging –breakpoints, step into/over code
- Testing – test data design for procedures and functions

15. Indicative Reading List

Bell, D & Parr, M, Visual Basic.Net for Students, Addison Wesley, 2003

McBride, P K, Introduction to Visual Basic.Net, Thomson, 2005
Deitel, H M, Deitel, P J, & Nieto, T R, Visual Basic.Net How to Program, 2e
Prentice Hall, 2002

16. Learning and Teaching Methods, including the nature and number of contact hours and the total study hours which will be expected of students, and how these relate to achievement of the intended learning outcomes

The module comprises 150 hours of study over one term. The taught component of the module includes 22 lectures, in which concepts are presented and illustrated by examples and case studies. This is supported by 11 supervised practical activity sessions. Students will be required to undertake supplementary reading and practical exercises to further develop their conceptual understanding and practical skills. Specifically the aim is to develop program design and coding skills in an object based programming language at an introductory level.

17. Assessment methods and how these relate to testing achievement of the intended learning outcomes

The module will be assessed by 50% course work and 50% examination.

The course work assessment could take the form of two practical exercises:

- The first exercise will require students to create and run a simple VB application based on single form user interface.
- The second exercise will require students to design, write and test an event-driven application to a stated specification. The application will involve the design of a reasonably sophisticated user interface and event-driven implementation based on more than one form and a range of controls.

Successful completion of both exercises will demonstrate that the student understands and can carry out the steps involved in developing an application involving the use of a graphical user interface. Carrying out these exercises will ensure that a student has achieved the generic learning outcomes mentioned in Section 12.

The examination will assess the subject specific learning outcomes.

18. Implications for learning resources, including staff, library, IT Space

This module forms part of the BSc Information Technology to commence September 2005 at Medway.

19. A statement confirming that, as far as can be reasonably anticipated, the curriculum, learning and teaching methods and forms of assessment do not present any non-justifiable disadvantage to students with disabilities.

As far as can be reasonably anticipated, the curriculum, learning and teaching methods and forms of assessment do not present any non-justifiable disadvantage to students with disabilities.

Statement by the Director of Learning and Teaching:

"I confirm I have been consulted on the above module proposal and have given advice on the correct procedures and required content of module proposals"

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Director of Learning and Teaching

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Date

Statement by the Head of Department: "I confirm that the Department has approved the introduction of the module and will be responsible for its resourcing"

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Head of Department

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Date

Revised 23 January 2007
August 2009