

MODULE SPECIFICATION

1. The title of the module

CO542 Fundamentals of Information Technology and Computing

2. The Department which will be responsible for management of the module

Computing Laboratory

3. Start date of module

September 2006

4. Number of students expected to module

20

5. Modules to be withdrawn

None

6. The level of the module

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7. The number of credits which the module represents

15

8. Which term(s) the module is to be taught in (or other teaching pattern)

Autumn (or in special pre Autumn term)

9. Prerequisite and co-requisite modules

FD/HND Information Technology

10. The programmes of study to which the module contributes

BSc Information Technology

11. The intended subject specific learning outcomes and, as appropriate, their relationship to programme learning outcomes

This aim of this module is to enable students who have successfully completed a FD/HND in Information Technology to assimilate material not covered on their programme but considered necessary to progress through Stage 3 of the BSc Information Technology.

Students who successfully complete this module will be able to:

- Use advanced features of an object-oriented programming language, such as inheritance and graphical libraries, to write programs. [A2]
- Use object-oriented analysis, design and implementation with a minimum of guidance, to recognise and solve practical programming problems involving inheritance hierarchies. [A4, C1]
- Design appropriate interfaces between modular components. [B5]
- Evaluate the quality of competing solutions to programming problems. [A4, C2]
- Evaluate possible trade-offs between alternative solutions, for instance those involving time and space differences. [C2]
- know about the components and structures of typical information systems [A4, C3];

- be familiar with the basic principles of data and information, and their presentation, representation and structuring using XML [A2];
- appreciate the wide range of applications of XML, within and without the information systems domain; [A3]
- be familiar with some of the notations used in representing the conceptual design of information systems;
- be able to use standard notations drawn from UML to describe the functionality and components of straightforward information systems; [A2, B2, C2, C4]
- be able to specify simple documents using XML. [A3]

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

Students who successfully complete this module will be able to:

- Make appropriate choices when faced with trade-offs in alternative designs. [B1]
- Recognise and be guided by social, professional and ethical issues and guidelines and the general contexts in which they apply [B6]
- Deploy appropriate theory and practices in their use of methods and tools. [B5]
- Make effective use of IT facilities. [D3]
- Manage their own learning and time. [D5]
- Develop a strategy for solving a problem [D3]
- Develop a strategy for working with others. [D2]
- Monitor progress and modify strategies to achieve agreed objectives [D5]
- Evaluate the realized solution [B9]

13. A synopsis of the curriculum

This module builds on the foundation of object-oriented design and implementation to provide a deeper understanding of and facility with object-oriented program design and implementation. More advanced features of object-orientation, such as inheritance, abstract classes, nested classes, graphical-user interfaces (GUIs), exceptions, input-output are covered. These allow an application-level view of design and implementation to be explored. Throughout the course, the quality of application design and the need for a professional approach to software development is emphasised.

In addition, students will learn about the uses of XML in structuring, transforming and representing data

14. Reading List

E.T.Ray *Learning XML 2nd edition, O-Reilly, 2003*

David J. Barnes and Michael Kölling, *Objects First with Java: A Practical Introduction Using BlueJ*

Pearson Education, 2006

15. 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 that may be offered over one term or may be offered as a pre-sessional basis. The taught component of the module involves 16 lectures. There will be a further 16 supervised practical activity sessions. Students will be required to undertake supplementary reading and develop practical skills.

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

- The module is 100% assessed through coursework. Assessment includes regular exercises, class tests, and projects. Exercises and projects assess the ability to use software development tools and IT facilities. Coursework assesses the ability to design, write and test solutions to practical programming problems and practical problems in structuring and representing information...

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

This module is designed to facilitate the transition of students from further education and foundation degree programmes into the Information Technology programme at Medway. Existing staff, resources and facilities will be used.

18. SENDA

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

19. 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 05 December 2006