1. **Title of the module**

COMP8710 (CO871) - Advanced Java for Programmers

1. **School or partner institution which will be responsible for management of the module**

School of Computing

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

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

Autumn

1. **Prerequisite and co-requisite modules**

A good working knowledge of imperative programming and of the fundamentals of structured software development is assumed.

1. **The programmes of study to which the module contributes**

Portfolio of Taught Postgraduate Programmes in Computing

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Apply the principles of the object-oriented paradigm and understand its relationship to 'traditional' methods.

8.2 Develop (design, implement and test) OO applications in Java using encapsulation, data hiding, inheritance and polymorphism to write compact, reusable, distributable code, and reuse existing class libraries to implement more complex and substantial programs.

8.3 Use online and library resources to research topics in this area, and to be able to communicate programming concepts and design ideas to other programmers.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1 Time management and organisation.

9.2 Effective information retrieval skills and ability to undertake online research.

9.3 Communications skills.

9.4 Problem solving.

9.5 Ability to plan, work and study independently and to use relevant resources in a manner that reflects good practice.

9.6 Appreciation of the importance of continued professional development as part of lifelong learning.

1. **A synopsis of the curriculum**

This module provides for well-qualified computer science students entering the MSc programme from a range of backgrounds. These students will have good programming skills but will not necessarily have used Java or another object-oriented language extensively. This module seeks to ensure that students have the Java and object-oriented design skills necessary for the rest of their programme.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

David J. Barnes & Michael Kölling, Objects First with Java, Prentice Hall /Pearson Education, 2008 (although much of this is introductory, the book is excellent at encouraging reflective design.)

Joshua Bloch, Effective Java: Second Edition, Addison Wesley, 2008.

Eric Freeman, Elisabeth Freeman, Bert Bates,Kathy Sierra, Head First Design Patterns, O'Reilly, 2004.

Java 8 in action: lambdas, streams, and functional-style programming - Raoul-Gabriel Urma, Mario Fusco, Alan Mycroft 2014

1. **Learning and teaching methods**

Total contact hours: 30

Private study hours: 120

Total study hours: 150

1. **Assessment methods**
   1. Main assessment methods

Two programming assessments, 30 hours (50%) each

13.2 Reassessment methods

100% coursework.

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | *8.1* | *8.2* | *8.3* | *9.1* | *9.2* | *9.3* | *9.4* | *9.5* | *9.6* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |
| Lectures | **x** | **x** |  |  |  |  |  |  | **x** |
| Classes | **x** | **x** | **x** |  |  |  | **x** | **x** | **x** |
|  |  |  |  |  |  |  |  |  |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Programming assessments | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **x** | **x** |
|  |  |  |  |  |  |  |  |  |  |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of computers in today's technological innovation.  The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language.

**FACULTIES SUPPORT OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

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| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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Revised FSO Jan 2018