1. **Title of the module**

COMP5590 (CO559) Software Development

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

Division of Computing, Engineering, Mathematical Sciences (CEMS)

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

Level 5

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 or Spring

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

Prerequisite: COMP5200 - Further Object-Oriented Programming

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

BSc Computer Science, including all variants, BSc Business Information Technology, BSc Computing, BSc Software Engineering, BSc Artificial Intelligence all with and without Year in Industry.

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**
2. Understand and discuss the principles and practices employed in the production of a software system using an Agile methodology and its variants. Hence, identify the benefits and drawbacks of adopting an Agile approach to software development when compared to alternative software development paradigms.
3. Determine software requirements and devise a corresponding roadmap.
4. Understand project planning and management including the roles of a project team, cost, quality and risk.
5. Evaluate and use appropriate software engineering tools.
6. Start and complete an agile software development project.
7. Understand and be guided by professional issues in software development, including codes of conduct of professional bodies, intellectual property, ethics, responsible software development and the development of safety critical systems.
8. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
9. Make effective use of IT facilities for scholarship and research.
10. Manage their own time, learning and development.
11. Present and discuss a topic of study.
12. Recognise and be guided by social, professional and ethical issues and guidelines.
13. **A synopsis of the curriculum**

The module studies team-based Agile software development in detail and places it in a wider software development context.

Topics covered include

* Concepts, principles, practice and philosophy of an Agile approach to software development, contrasting with more structured approaches.
* Collaboration: programmer collaboration, team values, customer involvement, project management, standards and reporting.
* Planning: release and sprint planning, risk assessment, user stories and resource estimating
* Development practices: incremental requirements, test-driven development, refactoring, scrum, code review, quality assurance, continuous integration.
* Tools: IDEs, version control, automated code quality evaluation, issue tracking.
* Ethics, Intellectual property, codes of conduct and professional responsibility.

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

* ACM Code of Ethics and Professional Conduct, https://www.acm.org/code-of-ethics
* British Computer Society Code of Conduct, https://www.bcs.org.uk/
* Brooks Jr, F. P. (1995). The mythical man-month (anniversary ed.). Hazzan, O. (2008) Agile Software Engineering, Springer, London
* Loeliger, J. (2012) Version Control with Git: Powerful tools and techniques for collaborative software development, O’Reilly, Boston
* McConnell, S. (2004). Code complete. Pearson Education, London.
* Watts, G. (2013) Scrum Mastery: From Good To Great Servant-Leadership, Inspect & Adapt Ltd, London

1. **Learning and teaching methods**

Total contact hours: 33

Total private study hours: 117

Total module study hours: 150

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

Presentation in small groups (approximately 5 to 15 minutes long) – 10%

Software project developed by small groups (approximately 30 hours work) – 30%

Individual project reports (approximately 5 pages) – 10%

Examination (2 hrs) – 50%

13.2 Reassessment methods

like for like

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 | 8.4 | 8.5 | 8.6 | 9.1 | 9.2 | 9.3 | 9.4 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** | **x** | **x** |  |  |  | **x** |
| Classes | **x** | **x** | **x** | **x** | **x** |  | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| Group Presentation | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Group Software | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  | **x** |
| Individual Report | **x** | **X** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Exam | **x** | **x** | **x** | **x** | **x** | **x** |  |  |  | **x** |

1. **Inclusive module design**

The Division 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.

**DIVISIONAL USE ONLY**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 23/11/2020 | Minor | September 2021 | 7 | No |
|  |  |  |  |  |