2024 / 25

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South East Technological University

Module Descriptor

Software Engineering (Computing and Mathematics)

Software Engineering (A07883)

Short Title: Software Engineering
Department: Computing and Mathematics
Credits: 5 **Level:** Intermediate

Description of Module / Aims

The objective of this module is to provide students with the understanding of techniques and methods used to develop reliable quality software. Students will also research and experiment with various tools in order to gain an insight into how they can be utilised in the software engineering process.

Programmes

		stage/semester/status
COMP-0103	BSc (Hons) in Creative Computing (WD_KCRCO_B)	3 / 6 / M
COMP-0103	BSc in Multimedia Applications Development (WD_KMULA_D)	3 / 6 / M
COMP-0103	Higher Diploma in Science in Business Systems Analysis (WD_KBUSY_G)	4 / 1 / M

Indicative Content

- Evolution of the Software Engineering Discipline
- Project Management
- Software Processes and Methodologies
- Requirements Engineering
- Object Oriented Modelling
- Software Testing and Software Quality
- Configuration Management
- Software Evolution

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Analyse the role and responsibilities of the professional software engineer.
2. Justify the importance of project planning and create a project workflow using appropriate tools.
3. Discriminate between different software processes and methodologies and be able to select a suitable process or methodology for the design of a particular software system.
4. Evaluate software requirements and illustrate the processes involved in discovering these requirements.
5. Discriminate between different models and activities in the object oriented design process.
6. Justify the importance of software testing, software quality and configuration management in the development of software systems.
7. Manage the different stages of systems evolution.

Learning and Teaching Methods

- This module will be presented using a combination of lectures and practical classes.
- The lectures will be used to introduce new topics and their related concepts.
- In practical classes students will apply these concepts and engage with project management and DevOps tools in order to gain experience in the software engineering process.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	12
Practical	24	12
Independent Learning	87	111

Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	50%	1,3,4,6,7
Continuous Assessment	50%	
Assignment	50%	2,3,4,5,6

Assessment Criteria

<40%: Unable to interpret and describe key concepts of software engineeing.

40%–49%: Be able to interpret and describe key concepts of software engineering.

50%–59%: Ability to discuss key concepts of software engineering and the ability to discover and integrate related knowledge in other knowledge domains.

60%–69%: Be able to solve problems within the software engineering by experimenting with the appropriate skills and tools.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of appropriate skills and tools.

Supplementary Material(s)

- Pressman, R. and B.R. Maxim. *Software Engineering: A Practitioner's Approach.* 8th ed. New York: McGraw-Hill Higher Education, 2014.
- Sommerville, I. *Software Engineering.* 10th ed. Boston: Pearson, 2015.

Requested Resources

- Room Type: Computer Lab