

Module Details	
Module Title	Software Engineering
Module Code	BIC4012-B
Academic Year	2022/3
Credits	20
School	UoB International College
FHEQ Level	FHEQ Level 4

Contact Hours	
Type	Hours
Directed Study	140
Lectures	50
Practical Classes or Workshops	10

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Non-Standard Academic Year
BDA	University of Bradford / Semester 3

Module Aims
Provides students with a theoretical and practical introduction to Software Engineering. Enables students to learn about the methodologies and approaches adopted in software development. Places software development in the context of client requirements and demonstrates how these might be met. Places such development in a wider context by introducing issues around commercial viability, sustainability, legal frameworks, ethical and safety considerations.

Outline Syllabus
Software Life Cycle: Analysis, Design, Implementation, Testing, Deployment. Models of software development; use of SCRUM in agile software development. Programme analysis and specifications; functional and non-functional requirements; identification of Use Cases. Use of UML to produce static and dynamic models of a proposed software system. Testing methodologies: Black and White Box. System dependability; reliability, safety, security and resilience. Working within time and cost constraints. Team structures and version control. Legal and ethical issues, for example, copyright, data protection, privacy, piracy, sustainability, security, environmental impact, safety. Communication between specialist and non-specialist audiences: identifying and meeting requirements, negotiations skills, team-building and working as a member of a group, building professional relationships.

Learning Outcomes	
Outcome Number	Description
01	Demonstrate an understanding of the Software Life Cycle.
02	Explain the nature and advantages of different design, development and testing methodologies; including agile software development.
03	Explain the use of UML in software design and visualisation.
04	Analyse customer requirements and produce requirement documentation, demonstrating use of technical language and vocabulary for specialist and non-specialist audiences.
05	Outline legal and ethical issues pertinent to software development in context.

Learning, Teaching and Assessment Strategy

Teaching and learning on this module can be divided up in the following ways:

50 hours - Small class tuition in an interactive environment; tutor-led sessions followed by whole-class discussion or group work

10 hours - practical workshop sessions in an IT suite or computer lab

140 hours - directed learning, including class preparation, assignments, assessment preparation and independent learning.

Formative assessment takes place through the regular setting of assignments during the course, encouraging students to respond to and develop ideas and information conveyed in the classes and practical sessions. Tutors provide detailed and supportive feedback, encouraging students to reflect on their performance, their progress on the course to date and their strengths and weaknesses. The feedback and reflection are used to help students devise clearly expressed steps towards improvement.

Summative assessment consists of a coursework task set during the course with a focus on a real life problem/scenario, and an unseen examination, sat at the end of the course.

Mode of Assessment

Type	Method	Description	Weighting
Summative	Coursework - Written	Design a software solution to meet a client's needs, testing	50%
Summative	Examination - Closed Book	Covers all topics studied during the course	50%

Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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