

Module Details	
Module Title:	Technical and Professional Skills
Module Code:	COS4015-B
Academic Year:	2019-20
Credit Rating:	20
School:	Department of Computer Science
Subject Area:	Computer Science
FHEQ Level:	FHEQ Level 4
Pre-requisites:	
Co-requisites:	

Contact Hours	
Type	Hours
Lectures	12
Laboratory	24
Directed Study	164

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims
To raise awareness of, and interest in, legal, social, ethical, and professional issues; to equip students with a range of academic, professional, personal and technical skills; to introduce the basics of shell programming; to improve analytical skills essential to design algorithms for solving various computing problems; to provide an understanding of the techniques and skills required to develop more usable interactive secure computer systems; to provide fundamental subject specific concepts, e.g. artificial intelligence, cyber security and mobile application development.

Outline Syllabus
A broad introduction to, and overview of, the discipline of computing. Basic Linux shell

programming. Algorithm development for solving various computing problems and computational complexity analysis. Design and implementation of computer applications as a team-based exercise. Introduction to artificial intelligence and machine learning. Basic principles of mobile application development. Introduction to cyber security and ethical hacking. Library and information skills using suitable tools. Reflective and scientific academic writing and referencing. Plagiarism awareness. Aspects of code of ethics, professional conduct, copyright, open source, patents, piracy, privacy and GDPR.

Learning Outcomes

1	Demonstrate a broad knowledge and overview of your specific field of study. Outline the importance of key skills for professionals from a subject specific point of view.
2	Develop algorithmic problem solving skills; design and develop software programmes and computer applications; analyse the computational complexity.
3	Identify and describe basic principles, techniques and concepts underpinning artificial intelligence, cyber security and mobile application development.
4	Understand legal, social, ethical, and professional issues within the context of computer science and IT and responsibilities around these issues.
5	Apply a range of communication skills including collaborative working, report writing and presenting.

Learning, Teaching and Assessment Strategy

Lecture sessions present the concepts, principles and theories underpinning the design and development of interactive computer systems. Lectures provide guidance on the availability of supporting resources within the University for individual professional development. Labs incorporate both tutorials and practical exercises aimed at introducing and improving key skills. Activities in labs range from problem solving to interactive sessions. Directed reading enables the development of study skills and support the material covered in lecture sessions. Assessment is done by 2 coursework and weekly lab exercises. You must pass the Library plagiarism awareness online course (assessment 0) to pass the module. Supplementary Assessment as original with the group element substituted by individual.

Mode of Assessment

Type	Method	Description	Length	Weighting
Summative	Coursework	Case study and report on legal, social, ethical, and professional issues	-1500 words	30%
Summative	Coursework	Online programme on plagiarism avoidance provided by the Library. This assessment must be passed to pass the module (Pass/Fail)	0 hours	%

Summative	Coursework	A group based development of a prototype		45%
Summative	Coursework	Weekly lab and PAT tasks		25%

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.