UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title:	Big Data Systems and Analytics
Module Code:	COS7006-B
Academic Year:	2019-20
Credit Rating:	20
School:	Department of Computer Science
Subject Area:	Computer Science
FHEQ Level:	FHEQ Level 7 (Masters)
Pre-requisites:	
Co-requisites:	

Contact Hours	
Type	**Hours**
Lectures	24
Tutorials	6
Laboratory	24
Directed Study	146

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

Module Aims

To enable you to gain advanced knowledge and develop skills on big data topics, concerning architectures of big data systems, management of big data projects, and computational approaches for big data analytics. To equip and enhance the understanding and application of intellectual property, and legal and ethical issues within the general context of digital economy and big data.

Outline Syllabus

1. Introduction to a variety of Systems Architectures for big data, study of different architectures and the associated functions.
2. The design of big data systems to enable the effective analytics of big data.
3. Study of a variety of approaches for big data analytics.
4. Study of a variety of cases on big data product design and innovation.
5. Study of a variety of applications of big data analytics in different domains.
6. Introduction to intellectual property, legal and ethical issues applied to big data resources.

Learning Outcomes

1	Evaluate the design of system architectures and data analytics approaches for big data projects.
2	a) Design and implement suitable architectures for organising and analysing big data. b) Discuss contemporary issues in big data project management including intellectual property, legal and ethical aspects. c) Apply skills and techniques for problem solving in big data analytics.
3	Demonstrate effective communication, team work, self-management and problem solving skills.

Learning, Teaching and Assessment Strategy

A series of lectures will provide the essential theories and concepts. Laboratory sessions will provide you with opportunities to implement the systems architecture and test the difference of performance. Tutorials will facilitate identification and discussion of relevant case studies and will be organised for you to discuss and present your understanding of the selected topics. Oral feedback is given during the practical classes as appropriate. Module assessment consists of two coursework components - one for group work and another one for individual work. The assessment is to test skills, knowledge and understanding for solving relevant practical problems on big data systems. The supplementary assessment follows the coursework format to address deficiencies encountered at the first attempt.

This module satisfies the Learning Outcomes as specified by the Accreditation of Higher Education Programmes: Third Edition (AHEP3) as published by The Engineering Council in-line with the UK Standard for Professional Engineering Competence (UK-SPEC). These outcomes specify six key areas of learning: Science and Mathematics (SM), Engineering Analysis (EA), Design (D), Economic, Legal, Social, Ethical and Environmental Context (EL), Engineering Practice (P) and Additional General Skills (G).
SM7M, SM8M, SM9M, EA6M, EA7M, D9M, EL8M, EL11M, P9m, P10m, P11m, G1.
Further details of these learning outcomes can be found at https://www.engc.org.uk/.

Mode of Assessment

Type	Method	Description	Length	Weighting
Summative	Coursework	Coursework 1 (Group): Exercises on the design of system architectures.	-2000 words	50%

Referral	Coursework	Supplementary coursework assessment (Individual)	-4000 words	100%
Summative	Coursework	Coursework 2 (Individual): Exercises on data analytics.	-2000 words	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.