

Module Details	
Module Title:	Advanced Machine Learning
Module Code:	COS7045-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	20
Laboratory	24
Directed Study	156

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2 (Feb - May)

Module Aims
To develop an understanding of current theoretical and practical approaches, algorithms and techniques used to enable Machine Learning.
To develop practical skills in applying Machine Learning techniques in specific contexts.

Outline Syllabus
Background and history of Machine Learning; current approaches and sub-fields including data mining, supervised and unsupervised learning algorithms, deep learning, reinforcement learning; data preparation and processing; software and tools for machine learning including R, KNIME, Weka.

Learning Outcomes	
1	Demonstrate mastery of applying relevant machine learning techniques to suitable data and/or software environments
2	Demonstrate practical skills using suitable software tools for data mining and machine learning
3	Conduct research to find, critically analyse and select appropriate techniques and algorithms depending on the context and problem

Learning, Teaching and Assessment Strategy
A combination of lectures and laboratory sessions make up the contact time for this module. Theoretical concepts delivered in lectures will have strong links to practical skills developed in associated lab sessions. Verbal feedback during practical lab exercises will support student learning throughout the module. Assessment is in the form of a coursework exercise that requires students to select and solve problems in the fields of data mining and machine learning using both the knowledge gained in the module as well as independent research conducted during the completion of the coursework.

Mode of Assessment				
Type	Method	Description	Length	Weighting
Summative	Coursework	An exercise in practical machine learning and data mining including a report and code/scripts demonstrating practical work	-5000 words	100%

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.