

Module Details	
Module Title	Machine Learning
Module Code	COS6026-B
Academic Year	2022/3
Credits	20
School	Department of Computer Science
FHEQ Level	FHEQ Level 6

Contact Hours	
Type	Hours
Lectures	20
Tutorials	4
Laboratories	22
Directed Study	154

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2

Module Aims
To provide knowledge and experience of the creation of machine learning systems for a variety of real-life applications, using supervised or unsupervised learning.

Outline Syllabus
Machine learning principles and applications, fuzzy logic and machine learning, Decision trees, Bayesian networks, instance-based learning, clustering, reinforcement learning, artificial neural networks, deep learning, support vector machines and Dimensionality reduction techniques, Methods for evaluating performance.
Examples will be drawn from simple real-life problems that arise in studies of machine learning.

Learning Outcomes	
Outcome Number	Description
01	Critically review a range of machine learning approaches, their evaluation and model selection
02	Demonstrate critical understanding of machine learning applications and data processing
03	Demonstrate critical understanding of the analysis, design and implementation of machine learning systems
04	Demonstrate problem solving techniques and preparation for further research in the are

Learning, Teaching and Assessment Strategy
The delivery of the module will consist of lectures and lab classes supplemented by students own lab work and directed study. Formal lectures will outline the theoretical principles of machine learning. The coursework will involve students in the practical implementation of machine learning systems on real-life datasets. Supplementary assessment is based on the original assignment.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Coursework	Exercises on the development and creation of machine learning systems	50%
Summative	Coursework	Exercises on the development of machine learning based solution to a real-life problem	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.