

AMITY GLOBAL INSTITUTE

MODULE SYLLABUS

Course	Master of Science Artificial intelligence Awarded by Teesside University
Module Title	Data Analytics
Module Syllabus No. (if any)	CIS4008-N
Content	This module will provide students with the core principles and practical skills to apply state-of-the-art computational methods to perform data analytics. The skills are very important in the new horizon of data analysis where existing massive amount of data contains valuable knowledge, which is critical for prediction and decision making. Due to its characters (3V: volume, velocity, and variety), computational methods are required to extract such knowledge. By taking this module, students will form a solid foundation of 1) predictive analytics, 2) data-driven decision making which refers to tools and techniques for building statistical or machine learning models to make predictions and decisions based on data. Practical guidance about how to handle unlabelled, noisy, incomplete, large-scale data will be discussed. The students will also learn how to select the best technique to handle different type of data in different scenarios.
No. of Teaching Hours	36 hours
Teaching Methods	Lectures
Assessment Methods and Weightages	The module assessment is comprised of an open book exam (50%) and an ICA (50%). The open book exam will require the understanding of core principles of computational methods introduced during this module. The ICA report will comprise the algorithmic design, process and results for a case study.
Skills for Maximising Learning Outcomes	Reading and Research
Dates of Examinations, Major Assessments and Assignments	See University Academic Calendar
Recommended Text	Pattern recognition and machine learning 9781493938438 Bishop, Christopher M. 2006
Additional Reference Texts (if any)	
Additional Remarks (if any)	

No.	Learning Outcomes/Aims
1	Analyse personal workload, identifying risks and unknowns, and adapt plans to mitigate for failures to ensure specified deadlines are met.
2	Collaborate effectively as a team member, minimising conflict, to apply the right data analytics pipeline to a business scenario and present findings with justifications.
3	Analyse client specifications/requirements and design a data analytics project utilising appropriately selected data analysis approaches, methods, techniques and tools with justifications.
4	Analyse complex datasets with a range of algorithms/techniques and critically evaluate their effectiveness
5	Autonomously plan and undertake a data analytics project.
6	Incorporate and justify professional, social, ethical and legal practices when undertaking and presenting findings of a data analytics project.
7	Elaborate computational modelling concepts in data analytics. Design and perform statistical and machine learning algorithms for analysis of data.
8	Use computational tools to carry out real-world case studies.

Note: All Information provided to Amity will be kept strictly confidential except for those required under statutory requirements and by government authorities and relevant university partners and accreditation bodies as part of the regulatory or course requirements.