

## **TEESSIDE UNIVERSITY**

**Name of course: Master of Science Artificial Intelligence with Data Analytics**

### **Module Description**

#### **[CIS4057--N] ARTIFICIAL INTELLIGENCE ETHICS AND APPLICATIONS**

This module will provide students with a deep insight into the business, applications of Artificial Intelligence (AI) and Data Science (DS). The module will explore a range of AI and DS applications, such as chatbots, virtual assistants, medical diagnosis, biometric recognition, personalisation, fraud detection and autonomous machines. Students will analyse both the risks and opportunities of applying AI and DS techniques in these areas.

#### **[CIS4064-N] INTELLIGENT DECISION SUPPORT SYSTEM**

This module offers an opportunity to the students to understand fundamentals of tackling decisions of increasing difficulty in technology, health, and business decision. This will provide an understanding about the need for, and the effectiveness of, computerised methods for supporting decisions. This includes classifications, data mining and knowledge management-based decision methods with examples of various application domains.

#### **[CIS4027-N] STATISTICAL METHODS FOR DATA ANALYTICS**

By taking this module you will develop necessary knowledge and practical understanding of the main statistical techniques. Both Quantitative and Qualitative data analysis techniques will be covered, reflecting scientific and social science methods. It will specifically focus on correlation testing, regression, data categories, normalization i.e., the tools needed, rather than the philosophical approaches. You will understand how to apply valid techniques and interpret the results in preparation for experimental work.

#### **[CIS4035-N] MACHINE LEARNING**

This module is a subfield of computer science concerned with computational techniques rather than performing explicit programmed instructions. The methodology involves building a model of a given task based on observations to make predictions about unseen data. Such techniques are useful when the desired output is known but an algorithm is unknown, or when a system needs to adapt to unforeseen circumstances.

#### **[CIS4011-N] RESEARCH METHODS**

This module will provide students with the knowledge and skills to understand the research process in the computing discipline and will provide them with the necessary skills to undertake their master's project. They will learn how to use and critically evaluate previous academic research, and to generate good evidence material to justify their professional practice. This will involve students learning about different research strategies and data generation methods and how they fit into primary research, the development lifecycle and the evaluation of the user experience, the use of the academic research literature, and research ethics.

**Updated on 28 July 2023**

### **[CIS4008-N] ARTIFICIAL INTELLIGENCE FOUNDATIONS**

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.

### **[CIS4055-N] COMPUTING MASTERS PROJECT**

This module provides students with the opportunity to undertake a major, in-depth, individual study in an aspect of computing, IT, computer science or digital technology. Normally the master's project will be drawn from commercial, industrial or research-based problem areas. The project involves the student in researching and investigating aspects of their specific computing discipline and then producing a major deliverable (e.g., software package or tool, design, prototype, website, model, research findings, results of an experiment, datasets etc.). The student also carries out a critical evaluation of their major deliverable, including obtaining third party evaluation where appropriate.