

MODULE SYNOPSIS

Post-Diploma Certificate (PDC 1) in Fundamentals of Data Science

MS9001 Introduction to Statistics for Data Science

This module provides students with an introduction to elementary probability theory and statistical concepts and principles that lay the foundation to understand and learn the statistical procedures and methods in the subsequent modules. The topics covered include descriptive statistics, rules of probability, probability distributions of discrete and continuous random variables, sampling distributions, statistical estimation and hypothesis testing.

IT8701 Introduction to Programming for Data Science

This module provides students with the fundamental skills to code applications to retrieve, clean and visualize data using the Python programming language. Students learn key concepts such as what structured and unstructured data are, and how they can create and manipulate relational and NoSQL databases to explore data and to create visualizations that can help them gain useful insights from it.

Post-Diploma Certificate (PDC 2) in Artificial Intelligence

IT8302 Applied Machine Learning

Applied Machine Learning aims to provide students with hands-on experience in building machine learning systems using advanced algorithms. Students will learn to use common Python machine learning libraries such as Scikit-learn. They will also apply the Python libraries such as Numpy, Pandas and Seaborn.

Business needs analysis, AI Application skills and Computational Modelling will be taught. Data Design (or Feature Engineering), Data Governance and Data Strategy will be taught. Students will be made aware of AI Governance and Ethics challenges in the use of data. Industry case-studies and use-cases would be used. AI application skills and business needs analysis would be incorporated into the case studies and use-cases.

As part of this module's assessment, students will have to complete 2 practical assignment projects that would require them to integrate the knowledge acquired in this module and apply it to a problem.

IT8303 AI Human Interface

AI-Human Interface aims to equip students with skills to build human to AI interfaces. Students will learn deep learning (e.g. using Keras/PyTorch) which is a key technology for Intelligent Reasoning, Computer Vision and Natural Language Processing/Text Processing and Analysis. Students will learn Intelligent Reasoning for recommenders and question answering. In addition, students will learn about generative AI and ChatGPT.

As part of this module's assessment, students will have to complete 2 practical assignment projects that would require them to integrate the knowledge acquired in this module and apply it to a problem.