Module Specification

Big Data Analytics

Version: 2021-22, v1.0, 24 Jul 2019

Contents

Part 1: Information

Module title: Big Data Analytics

Module code: UFCFJP-15-3

Level: Level 6

For implementation from: 2021-22

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: None

Delivery locations: Frenchay Campus, School for Higher and Professional Education

Field: Computer Science and Creative Technologies

Module type: Standard

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module will provide you with an insight into concepts, theories and developments associated with data analytics and big data. You will be introduced to knowledge discovery, analysis and assessment of data extracted from structured and unstructured big data sets, visualisation and communication of results. You will

develop practical skills through using tools and techniques from the forefront of the emerging field of data analytics and big data.

Features: Not applicable

Educational aims: See Learning Outcomes

Outline syllabus: Indicative content:

Introduction to Big Data:

Defining Big Data

Big Data and Data Warehousing

Storing Big Data:

Analysing Data Characteristics

Overview of Big Data Stores

Selecting Big Data Store

Processing Big Data:

Integrating Disparate Data Stores

Employing Hadoop MapReduce

Tools and Techniques to Analyse Big Data:

Creating business value from extracted data

Recognizing Patterns and Trends with queries

Creating business value from extracted data

Ethical, privacy and security issues with respect to big data

Part 3: Teaching and learning methods

Teaching and learning methods: The module is delivered through weekly lectures and lab sessions. Each lecture will direct the course and introduce the new ideas and skills required. Then small group lab sessions will enable each student to carry out the practical exercises described in the associated worksheet under the guidance of a Lab Tutor.

Scheduled learning includes lectures, tutorials and practical lab classes.

Independent learning includes time engaged with essential reading and assignment preparation and completion.

Module Learning outcomes:

MO1 Define what Big Data is in general outline and explain those aspects that are important in any Big Data Solution

MO2 Compare and contrast the different frameworks that provide tools for performing Big Data tasks and be able to determine the best solution for a given business scenario

MO3 Demonstrate the ability to define a set of requirements for an ideal Big Data Solution given real-world business scenario

MO4 Construct a design, implement and evaluate a working Big Data Solution based on a given set of requirements

MO5 Describe security and privacy issues and other ethical considerations with respect to Big Data

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ufcfjp-15-3.html

Part 4: Assessment

Assessment strategy: Module assessment will be divided into:-

Component A – 2 hour exam that is summative and assesses students' understanding of concepts of big data and data analytics, the security, privacy and ethical implications of using big data technologies as well as comparing the different frameworks available to implement big data solutions.

Component B – An individual project involving the investigation of a problem area and the development of a potential solution. Contextual evidence and/or sample datasets will be provided as guidance. The deliverables will consist of (i) a report (which will detail the research into their given topics, the techniques used to develop the proposed solution and an analysis of the results obtained) and (ii) the artefact developed to demonstrate the proposed solution.

There will be opportunities for formative assessment in the form of regular in-class presentations of research/implementation completed as part of tutorial work completed and subsequent group discussions.

Assessment components:

Examination (Online) - Component A (First Sit)

Description: Online examination

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO5

Portfolio - Component B (First Sit)

Description: Individual assignment: report (1500 words) and artefact

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Examination (Online) - Component A (Resit)

Description: Online examination

Weighting: 25 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Portfolio - Component B (Resit)

Description: Individual assignment: report (1500 words) and artefact

Weighting: 75 %

Final assessment: No

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Information Technology {Top-Up} [Sep][FT][Frenchay][1yr] BSc (Hons) 2021-22