WM9A9-15 Big Data, Analytics & Optimisation

26/27

Department
WMG
Level
Taught Postgraduate Level
Module leader
Liping Zheng
Credit value
15
Module duration
4 weeks
Assessment
Multiple
Study locations
University of Warwick main campus, Coventry Primary
Distance or Online Delivery

Description

Introductory description

Advanced eCommerce and Digital Analytics involve the utilisation of many of the newer, and more sophisticated technologies and techniques for optimising digital assets and business processes. This module introduces some of the most important of these, and gives participants practical experience of their uses.

Module aims

The module aims to expose students to essential skills in building and managing big data pipelines and navigating the big data analytics lifecycle from raw data to actionable insights. Students will master data visualisation techniques to effectively communicate findings and drive decision-making. For eCommerce specialists, the module incorporates data-driven website optimisation to enhance digital visibility and performance. Through hands-on experience in cloud-based environments, participants will develop the ability to critically analyse a range of business scenarios and implement sophisticated big data and digital analytics solutions that address real-world business challenges. This comprehensive approach prepares students to leverage data at scale, optimising digital platforms and strategies for competitive advantage in the rapidly evolving

eCommerce and digital operations landscape.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Big data architecture

- Cloud computing
- Big data collection - Web crawling & API
- Big data storage - Relational database (SQL) & Non-relational database (NoSQL), data lake & data warehouse
- Big data processing - ELT & ETL

Note: The main aim of these sessions is to expose you to the cutting-edge technologies in big data area.

Big data analytics

- Big data for web optimisation (e.g. technical SEO)
- Artificial intelligence and machine learning
- Natural language processing

Data visualisation

- Best practice of data visualisation
- Dashboards
- Data story

A practical data simulation
You will have chances to apply all the analytics and visualisation techniques to complete a group data project.

Learning outcomes

By the end of the module, students should be able to:

- Critically analyse and evaluate the limitations of traditional data approaches and the key drivers of applying big data technologies.
- Critically evaluate digital business scenarios and devise appropriate big data solutions
- Demonstrate a comprehensive understanding of the core concepts of visual communication and data visualisation.
- Collaboratively analyse digital business requirements and practically implement analytics and optimisation techniques in real-world settings.

Indicative reading list

Specific reading list for the module

Interdisciplinary

A mixture of technology/computing topics and business topics

International

Topics are of high international demand

Subject specific skills

Big data, analytics, visualisation, technical SEO, AI, machine learning, NLP

Transferable skills

Presentation skills, research, teamwork and working effectively with others, software development, critical thinking, problem-solving, communication, professionalism, organisational awareness

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Study

Study time

Type	Required
Lectures	20 sessions of 1 hour (13%)
Seminars	10 sessions of 1 hour (7%)
Online learning (independent)	30 sessions of 1 hour (20%)
Private study	30 hours (20%)
Assessment	60 hours (40%)
Total	150 hours

Private study description

Private study will include preparing for lectures and seminars, reviewing lecture notes, and engaging with required readings and multimedia resources.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A4

	Weighting	Study time	Eligible for self-certification
Big Data Analytics Presentation	30%	18 hours	No
A presentation of analyses of various datasets with visualisation and recommendations on business actions from them. Peer Marking Process will be adopted in this assessment			
Assignment	70%	42 hours	Yes (extension)
A business-style report discussing core topics in big data, optimisation and visualisation			

Assessment group R4

	Weighting	Study time	Eligible for self-certification
Big Data Analytics Presentation	30%		No
A presentation of analyses of various datasets and recommendations on business actions from them. This reassessment for the presentation will be a video submission.			
Assignment	70%	42 hours	No

Feedback on assessment

Verbal feedback will be provided for the group assessment. Written feedback will be provided for the individual assignment.

Availability

There is currently no information about the courses for which this module is core or optional.