WM9QA-15 Supply Chain Digitisation and Data Analytics

26/27

Department
WMG
Level
Taught Postgraduate Level
Module leader
Ibrahim Ali
Credit value
15
Module duration
4 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

In this module, students will learn how digitisation transforms supply chain management, using advanced technologies and analytics to challenge traditional practices. The module fosters critical thinking, innovation, and ethics, equipping students with the skills to enhance supply chain performance, resilience, and ethical practices management through data analytics to optimise operational efficiency and enhance transparency and resilience.

Module aims

The overarching aim of this module is to empower learners to develop expertise in data analytics to analyse and link diverse supply chain data, enabling strategic data-driven decisions to enhance performance, resilience and sustainability. The module is built on practical application and aligned with current and future industry needs; it equips students to harness various data sources, deploy advanced analytical techniques, and leverage cutting-edge digital technologies like AI, blockchain, and IoT. Through experiential learning, students will master decision support tools, develop actionable insights, and communicate them effectively to stakeholders. Ultimately, this learner-centred module will enable students to succeed in complex, dynamic, data-driven supply chain environments. The design has been mapped against the course-level learning outcomes.

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.

- Introduction to data analytics in the supply chain
- Data collection and preparation
- Advanced Data Analytics for Supply Chain Applications (Diagnostic, Predictive, Prescriptive)
- Digital Technologies in Supply Chains (Blockchain, AI, IoT, and Digital Twins)
- Designing Dashboards and Data Visualisation Tools for Supply Chain Decision-Making
- Developing Data-Driven Decision Support Systems and Collaborative Problem-Solving in Supply Chain

Learning outcomes

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

- Demonstrate comprehension of technologies shaping supply chain digitisation, including but not limited to blockchain, artificial intelligence, machine learning, and the Internet of Things (IoT).
- Align digital strategies with organisational goals, manage change effectively, and foster innovation within the supply chain context
- Evaluate the choice of analytical tools depending on the specific needs and scale of the complexity of supply chain analytics tasks
- Apply data analytics techniques to solve complex supply chain challenges to enhance operational efficiency, mitigate risks, and capitalize on emerging opportunities.
- Present and communicate complex data insights and analytical findings and suggest actionable recommendations to diverse stakeholders in a supply chain

Indicative reading list

Reading lists can be found in Talis

Specific reading list for the module

Subject specific skills

Data integration, advanced analytics, technology utilisation, dashboard design, strategic assessment, digital transformation understanding, data-driven decision-making, deep industrial knowledge, awareness of key practices and principles, understanding of industry structure and future challenges

Transferable skills

Critical thinking, problem solving, data handling and analytical proficiency, collaboration and teamwork, effective communication, digital literacy, adaptability, and sustainability awareness.

Study

Study time

Type	Required
Lectures	15 sessions of 1 hour (17%)
Seminars	15 sessions of 1 hour (17%)
Online learning (independent)	30 sessions of 1 hour (33%)
Private study	30 hours (33%)
Total	90 hours

Private study description

Students will be encouraged to explore the reading list which includes essential and recommended reading material. Students will be encouraged to utilise the CPD tools and range of resources from the CILT and CIPS websites as part of their student and affiliate memberships. Students will be encouraged to trial out various data analytics and visualization software.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group A1

	Weighting	Study time	Eligible for self-certification
Assessment component			
Data analytics and visualization case study	30%	18 hours	No

Students will be given a case study with a data set and asked to develop a predictive model and visualise the analysis and results

	Weighting	Study time	Eligible for self-certification
Reassessment component			
Reflection on data analytics case			No
Students will be asked to write a reflection on the tools and techniques developed for the case study.			
Assessment component			
Report analysing supply chain predictive model	70%	42 hours	Yes (extension)
Students will be given a case study specific to an industry with a supply chain data set. They will be asked to prepare data, analyse it, develop a predictive model, and interpret the results linked to supply chain digitisation strategies. The question will have multiple sections, enabling students to develop a deep understanding of predictive analytics linked to supply chain digitisation strategies and their applications in supply chain management.			
Reassessment component			
Report analysing supply chain resilience resub			No
Students will be given a case study specific to an industry with a supply chain data set. They will be asked to prepare data, analyse it, develop a predictive model, and interpret the results linked to supply chain digitisation strategies. The question will have multiple sections, enabling students to develop a deep understanding of predictive analytics linked to supply chain digitisation strategies and their applications in supply chain management.			

Feedback on assessment

Students will receive formative feedback during the 4-week teaching block through scheduled opportunities such as group feedback sessions, individualised support during office hours, and asynchronous feedback via email or discussion forums. Written feedback will be linked to each learning outcome, incorporating clear, constructive, and actionable understandings. Additional tools, such as video or audio feedback options, will accommodate different learner preferences. Students will also be encouraged to reflect on their progress through self-assessment tools and peer feedback activities, fostering a supportive and collaborative learning environment.

Availability

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