

Module code: MOD010296	Version: 3 Date Amended: 05/Mar/2025
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1. Module Title
Analytics Essentials: Transforming Business with Big Data

2a. Module Leader
Wei Kang

2b. School
School of Economics, Finance and Law

2c. Faculty
Faculty of Business and Law

3a. Level
7

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions			
Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	MBA Fintech and Data Analytics MBA Fintech and Data Analytics (with Professional Experience) MSc Innovative and Sustainable Finance MSc Innovative and Sustainable Finance (with Professional Experience) MSc International Business with Business analytics MSc International Business with Business analytics (with Professional Experience) MSc Finance and Financial Technologies MSc Finance and Financial Technologies (with Professional Experience)		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description
The module, 'Analytics Essentials: Transforming Business with Big Data' offers a comprehensive exploration of cutting-edge advancements in big data analytics and their transformative impact on business operations and strategy. Throughout the course, you'll delve into key topics such as data mining techniques, machine learning fundamentals, real-time data analytics, and advanced analytics techniques. Emphasis is placed on the practical application of these concepts through case studies highlighting innovative business applications across various industries, including finance, healthcare, retail, manufacturing, and telecommunications. Additionally, the module addresses ethical considerations, privacy protection, infrastructure, and future trends in big data analytics. By the end of the module, you'll have gained a deep understanding of how big data analytics drives innovation and competitive advantage in the evolving landscape of business

6b. Outline Content

1. Introduction to Big Data Analytics and Business Innovation: Gain an understanding of the fundamentals of big data analytics and its pivotal role in driving innovation across various industries.
 2. Leveraging Data Mining Techniques for Business Insights: Explore the power of data mining techniques in extracting valuable insights from large datasets to inform strategic business decisions.
 3. Machine Learning Fundamentals for Business Innovation: Dive into the foundational principles of machine learning and learn how to apply them to solve real-world business challenges and foster innovation.
 4. Data Visualization Strategies for Communicating Innovations: Master data visualization techniques to effectively communicate complex insights and innovative ideas to stakeholders and decision-makers.
 5. Real-time Data Analytics for Agile Business Innovation: Discover how real-time data analytics can enable agile decision-making and foster innovation in dynamic business environments.
 6. Ethical Considerations and Privacy Protection in Innovative Data Analytics: Explore the ethical implications of big data analytics and learn best practices for ensuring privacy protection and ethical use of data in innovative analytics initiatives.
 7. Infrastructure and Technologies for Innovative Data Management: Understand the essential infrastructure and technologies required to manage and process large volumes of data effectively for innovative business applications.
 8. Innovative Business Applications of Big Data Analytics: Explore case studies and examples of innovative business applications of big data analytics across various industries to inspire and inform your own innovative initiatives.
 9. Advanced Analytics Techniques for Innovative Decision-Making: Delve into advanced analytics techniques such as predictive modeling, optimization, and prescriptive analytics to drive innovative decision-making and business outcomes.
 10. Security, Governance, and Future Innovations in Big Data Analytics: Explore the critical aspects of security and governance in big data analytics initiatives and gain insights into emerging trends and future innovations shaping the field.
- Through this comprehensive curriculum, you'll acquire the necessary knowledge and skills to harness the transformative power of big data analytics and drive innovation in today's dynamic business landscape.

6c. Key Texts/Literature

The reading list to support this module is available at: <https://readinglists.aru.ac.uk/>

6d. Specialist Learning Resources

Bloomberg

7. Learning Outcomes (threshold standards)		
No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Demonstrate an advanced and critical understanding of key concepts, theories, and methodologies in big data analytics, encompassing data mining techniques, machine learning algorithms, and real-time processing technologies, while evaluating their intricate relationships and practical implications for business practice.
2	Knowledge and Understanding	Analyze and critically evaluate the diverse applications of big data analytics across various business domains, including marketing, finance, operations, and human resources, by synthesizing insights from real-world case studies and industry examples, demonstrating an exceptional grasp of their nuanced complexities and implications.
3	Intellectual, practical, affective and transferrable skills	Develop an outstanding ability to critically assess and apply advanced analytics techniques in innovative business contexts, demonstrating proficiency in evaluating, interpreting, and applying complex data insights to address multifaceted business challenges effectively, while exhibiting a proactive and independent approach to learning and problem-solving
4	Intellectual, practical, affective and transferrable skills	Cultivate exceptional communication and collaboration skills through engaging in group projects and case studies, facilitating the clear and persuasive articulation and presentation of findings derived from big data analytics to diverse stakeholders within the business environment, integrating theory and practice seamlessly while embracing uncertainty and complexity.

8a. Module Occurrence to which this MDF Refers				
Year	Occurrence	Period	Location	Mode of Delivery
2026/7	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	0	None	None
Other teacher managed learning	26	1-4	1 hour Tutor-led Workshop (1hr x 11 weeks) 1 hour Student-led Workshop (1hr x 12 weeks) Screencast or equivalent (20 minute maximum) x 10 weeks minimum.
Student managed learning	124	1-4	Learning activities provided and explained on Canvas.
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	1-4	100 (%)	Fine Grade	40 (%)
Coursework (2500 words)					

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*). In addition, students are required to: (a) achieve the qualifying mark for each element of fine graded assessment as specified above (b) pass any pass/fail elements [* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]
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