

| Module Details | |
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| Module Title | Fundamentals of Artificial Intelligence and Data Analytics |
| Module Code | OIM4012-B |
| Academic Year | 2024/5 |
| Credits | 20 |
| School | School of Management |
| FHEQ Level | FHEQ Level 4 |

| Contact Hours | |
|------------------------------|-------|
| Type | Hours |
| Lectures | 8 |
| Directed Study | 158 |
| Online Lecture (Synchronous) | 4 |
| Seminars | 12 |
| Online Seminar (Synchronous) | 6 |
| Laboratories | 12 |

| Availability | |
|--------------|--|
| Occurrence | Location / Period |
| BDA | University of Bradford / Academic Year |

| Module Aims |
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| <p>This module introduces you to the concepts of Artificial Intelligence (AI) and Data Analytics and how they can be applied to improve organisational performance and generate competitive advantage. It will provide you with opportunities to critically reflect on the significance of AI and Data Analytics within the workplace.</p> <p>Please note: you will need to study this module to be eligible to take later modules in this area beginning with OIM5015-B (Big Data Analytics for Business) at Stage 2.</p> <p>OIM4012-B will deepen your understanding of key AI and Data Analytics techniques, tools and methods currently being used by organisations. You will become familiar with the societal impact of AI and the ethical dilemmas this creates, enabling you to develop your own ethical stance on the use of AI. You will also develop an awareness of skills and the fundamental data analysis techniques that are utilised in AI systems.</p> |

Outline Syllabus

- An Introduction to AI and Data Analytics in the 21st Century
- The Opportunities and Challenges of AI and Data Analytics for organisations and society.
- The origins and development of AI and Data Analytics
- The relationship between Data Analytics and AI.
- The fundamentals of Data Analytics
- Basic AI methods and tools - e.g. Machine Learning, Neural Networks
- Real-world applications of AI - e.g. Healthcare, Manufacturing, Engineering, Social care
- Ethical Data Handling
- The ethical dilemmas of AI
- The future of AI

Learning Outcomes

| Outcome Number | Description |
|----------------|---|
| 01 | You will be able to understand the basic concepts of AI and Data Analytics its importance within organisations and its impact upon society. |
| 02 | You will be able to identify and critically evaluate the application of AI and Data Analytics within organisations. |
| 03 | You will understand the fundamentals of data analytics that underpin many AI applications and have the practical skills to manipulate and interrogate rich data sets. |
| 04 | You will be able to critically discuss the positive and negative impacts of AI and Data Analytics for organisations, society and the individual. |

Learning, Teaching and Assessment Strategy

Learning will be directed, supported and reinforced through technology enhanced learning, online collaboration such as online discussion boards and multimedia and a combination of creative seminars, computer workshops, lectures, and directed and self-directed study.

More specifically, students will attend a combination of lectures, labs and seminars across alternative weeks. The alternative sessions rotate between fortnightly online lectures (1 hr) and face to face / online labs sessions (1 hr) in one week, followed by either a face to face or online seminar session (2 hr) during the following week. This alternating timetabling schedule is designed to not only develop students understanding of theory relating to AI and data analytics, but also to equip them with basics analytics skills during their lab sessions, whilst also allowing them to explore the implications of these technologies during the seminar sessions.

Students are expected to prepare for their fortnightly seminar sessions, in which they work individually and also in smaller groups to undertake various activities, such as preparing and researching secondary sources, engaging in topical debates with other groups as well as preparing for their group presentations.

Through a combination of lectures, labs and seminars, students will learn to conduct literature reviews, research secondary sources, critically analyse the application of AI as well as gain analytics skills. The assessments will assess against learning outcomes as follows; LO1, LO2 and LO4 will be assessed through the Creative Group Presentation (Assessment 1) LO1, LO2, LO3, LO4 will be assessed through the Critical Evaluation Coursework (Assessment 2) Appropriate feedback will be given for both elements of the assessment in accordance to the Faculty of Management, Law and Social Sciences required standards. Formative feedback will be provided throughout the course through on-line discussion and within seminars, tutorials and workshops. Discrete formative tasks will help students prepare for the summative assignments.

| Mode of Assessment | | | |
|--------------------|----------------------|--|-----------|
| Type | Method | Description | Weighting |
| Summative | Coursework - Written | A Critical Evaluation of Artificial Intelligence and Data Analytics | 70% |
| Summative | Presentation | Creative Group Presentation (15 Mins); Supplementary will take the form of an individual digital presentation. | 30% |
| Formative | Not assessed | Feedback on presentation offered during seminar | N/A |
| Formative | Not assessed | Plan of summative coursework indicating the key discussions, areas of literature and an overview of the key arguments to be included in the final submission (300 words) | N/A |

| Reading List |
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| To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html |

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

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