

H7BAI: Business and Artificial Intelligence

Module Code:	H7BAI
Long Title	Business and Artificial Intelligence APPROVED
Title	Business and Artificial Intelligence
Module Level:	LEVEL 7
EQF Level:	6
EHEA Level:	First Cycle
Credits:	5
Module Coordinator:	
Module Author:	Alex Courtney
Departments:	School of Computing
Specifications of the qualifications and experience required of staff	MSc and/or PhD degree in computer science or cognate discipline. May have industry experience also.
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
#	Learning Outcome Description
LO1	Describe the theory and concepts underpinning Artificial Intelligence (AI), as well as discuss the seminal and current applications of AI
LO2	Develop a high-level understanding of the key techniques used in AI
LO3	Identify problems in industry which AI can be used to solve, and propose appropriate solutions to these problems
LO4	Review state of the art AI tools, systems and publications
LO5	Assess the implications of implementing AI systems
Dependencies	
Module Recommendations	
No recommendations listed	
Co-requisite Modules	
No Co-requisite modules listed	
Entry requirements	Learners should have attained the knowledge, skills and competence gained from stage 2 of the BSc (Hons) in Computer Science

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Module Content & Assessment			
Indicative Content			
Introduction to AI Foundations of AI: philosophy, maths, psychology, computing, linguistics, logic, probability theory. Historical evolution of the field. Weak vs Strong AI			
Agents Percepts, actions, goals, environment. Simple reflex agents. Reflex agents with state. Goal based agents. Utility based agents			
Search Strategies Uninformed Search strategies: Uniform Cost, Breadth-First, Depth-First. Informed Search strategies: Greedy Best First Search, A* Search, Heuristic functions			
Selected Topics in AI (I) High-level overview and Applications of AI Techniques such as Mathematical Optimization, Machine Learning, Natural Language Processing			
Selected Topics in AI (II) High-level overview and Applications of AI Techniques such as Recommender Systems, Deep Learning, Computer Vision and Knowledge Representation			
Employing AI in Business (I) Embedding AI into business processes: AI in Education, AI in Finance			
Employing AI in Business (II) Embedding AI into business processes: AI in Agriculture, AI in Marketing			
Employing AI in Business (III) Embedding AI into business processes: AI in Manufacturing			
Re-imagining Processes with AI (I) Developing and deploying responsible AI. Improving productivity with AI			
Re-imagining Processes with AI (II) Human and Machine Collaboration			
Implications of AI (I) Ethics of AI. Impact on Decision Making			
Implications of AI (II) Impact on Organisations. Impact on Society (i.e. employment, income, human-computer relationships)			
Assessment Breakdown			%
Coursework			50.00%
End of Module Assessment			50.00%
Assessments			
Full Time			
Coursework			
Assessment Type:	Formative Assessment	% of total:	Non-Marked
Assessment Date:	n/a	Outcome addressed:	1,2,3,4,5
Non-Marked:	Yes		
Assessment Description: Formative assessment will be provided on the in-class individual or group activities.			
Assessment Type:	Project	% of total:	50
Assessment Date:	n/a	Outcome addressed:	3,4
Non-Marked:	No		
Assessment Description: Learners should search for several interesting examples of where AI is being applied, and prepare a report and presentation on these applications. An overview of the techniques, novel contributions, strengths, weaknesses, limitations and opportunities of the technologies applied should be covered. A current opportunity/problem should also be identified, and a strategy for implementing an AI solution is documented. Limitations of proposed solution should also be discussed.			
End of Module Assessment			
Assessment Type:	Terminal Exam	% of total:	50
Assessment Date:	End-of-Semester	Outcome addressed:	1,2,5
Non-Marked:	No		
Assessment Description: The end of semester examination will contain questions on concepts, techniques, applications and implications of AI. Marks will be awarded based on clarity, structure, relevant examples, depth of topic knowledge and an understanding of the potential and limits of solutions.			
No Workplace Assessment			
Reassessment Requirement			
Repeat examination <i>Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.</i>			
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Module Workload				
Module Target Workload Hours 0 Hours				
Workload: Full Time				
Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Lecture	Classroom & Demonstrations (hours)	24	Every Week	24.00
Tutorial	Other hours (Practical/Tutorial)	12	Every Week	12.00
Independent Learning	Independent learning (hours)	89	Every Week	89.00
Total Weekly Contact Hours				36.00

Module Resources	
<i>Recommended Book Resources</i>	
<p>!!!Book Not Found, [ISBN: 978-1633693869].</p> <p>Rajendra Akerkar. (2018), Artificial Intelligence for Business, Springer, p.81, [ISBN: 978-3319974354].</p> <p>Kartik Hosanagar. (2019), A Human's Guide to Machine Intelligence, Penguin, p.272, [ISBN: 9780525560890].</p> <p>Yeonjoo Lee, Miyeon Ha, Sujeong Kwon, Yealin Shim, Jinwoo Kim.. (2019), , Egoistic and altruistic motivation: How to induce users' willingness to help for imperfect AI, Computers in Human Behavior, n/a, https://doi.org/10.1016/j.chb.2019.105988.</p> <p>Roger Clarke.. (2019), , Principles and business processes for responsible AI, Computer Law & Security Review, n/a, https://doi.org/10.1016/j.clsr.2019.101588.</p>	
<i>Supplementary Book Resources</i>	
<p>Stuart Russell, Peter Norvig. (2016), Artificial Intelligence: A Modern Approach, Global Edition, Pearson Higher Ed, p.1152, [ISBN: 1292153970].</p> <p>Article/Paper List.</p> <p>Type.</p> <p>Item.</p>	
<i>This module does not have any article/paper resources</i>	
<i>This module does not have any other resources</i>	
Discussion Note:	