<u>**COURSE SPECIFICATION DOCUMENT**</u>

Academic School / Department: School of Liberal Arts

Programme: Computer Science

FHEQ **Level:**   6

Course Title: Artificial Intelligence

Course Code: DGT 6103

Student Engagement Hours: 160 (Standard 4- credit BA Course)

Lectures: 15
Lab: 30
Supervision: 40
Independent / Guided Learning: 75

Semester: Fall, Spring

Credits: 16 UK CATS credits
                                      8 ECTS credits
                                      4 US credits

Course Description:
This course provides students with the skills necessary to respond to Artificial Intelligent (AI) problems with search, logic and probabilistic reasoning. The course will also introduce some current advanced applications such as deep learning and natural language processing in the context of AI.

Prerequisites:
MTH 4140 Maths of Argument and Reasoning OR
DGT 5101 Programming for Industry

Aims and Objectives:
By the end of this course, students will be able to respond to computing problems by programming search and logic techniques. They will also be able to respond to uncertainty by probabilistic reasoning within programming. They will also apply their learning to a specialist area in AI such as deep learning or natural language processing.

Programme Outcomes:

COMPSC: A2, A3, A6, A7, A8, B1, B5, B7, C2, C3 and C7

A detailed list of the programme outcomes are found in the Programme Specification.

This is located at the archive maintained by Registry and found at:
https://www.richmond.ac.uk/programme-and-course-specifications/

Learning Outcomes:
By the end of this course, successful students should be able to:
- Understand AI and the areas of applications
- Solve computing problems using search and logic techniques
- Solve computing problems that present uncertainty with probabilistic reasoning
- Apply programming skills in a specialist area such as deep learning or natural language processing
- Understand the ethical implications of Artificial Intelligence

Indicative Content:
- What is artificial intelligence
- Using Search for problem solving
- Using Logic for problem solving
- Uncertainty and probabilistic reasoning
- Machine learning
- Advanced applications such as deep learning, natural language processing.
- Ethical & human rights issues of AI Systems, Algorithms & Machine Learning

Assessment:
This course conforms to the University Assessment Norms approved at Academic Board and located at: https://www.richmond.ac.uk/university-policies/

Teaching Methodology:
- Lectures, practical demonstrations and step-by-step software tutorials, class workshops, one-to-one tutorials.

Indicative Text(s):
"Artificial Intelligence: A Modern Approach" by Stuart Russell and Peter Norvig, Global (4th) Edition, May 2021

Journals/Additional Texts
Kelleher, J., 2019. Deep Learning. Boston: MIT Press.
Kulkarni, A., 2021. Natural Language Processing Projects. New York: Apress.
Liao, S., 2020. Ethics Of Artificial Intelligence. New York: OUP.

Web Sites
https://www.adobe.com/uk/products/xd.html
https://www.storyboardthat.com/

See syllabus for complete reading list

Change Log for this CSD:

Nature of Change	Date Approved & Approval Body (School or AB)	Change Actioned by Registry Services