1. **Title of the module**

COMP5560 (CO5560) AI Systems

1. **School or partner institution which will be responsible for management of the module**

School of Computing

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 5

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn or Spring

1. **Prerequisite and co-requisite modules**

CO324 Computer Systems, CO320 Introduction to Object-Oriented Programming, CO552 Agile Development and Software Security A

1. **The programmes of study to which the module contributes**

BSc Computer Science, BSc Computer Science (Networks), BSc Computer Science (Artificial Intelligence), BSc Computer Science (Consultancy), BEng Computer Systems Engineering, BSc Computing and Business Administration, BSc Computing, BSc Computer Science for Health, BSc Business Information Technology, Computing Joint Honours, including Year in Industry variants.

BEng Electronic and Communications Engineering, BEng Computer Systems Engineering.

Also offered as a wildcard on other programmes.

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1 Describe the purpose of, and the interaction between, the functional components of a typical AI system.

8.2 Identify the principal software components which enable functionality and connectivity of AI systems ranging in scale from the global cloud-based solutions down to AI in tiny embedded systems.

8.3 Appreciate the principles and technologies behind AI, including machine learning, big data, fuzzy and rule-based systems.

8.4 Describe how networks and other computer systems can be used to deliver practical AI solutions to real-world problems.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1 Communicate their understanding of basic AI systems.

9.2 Develop their understanding of how AI systems are developed, utilised and operate to solve real-world problems.

9.3 Evaluate how software components interact to deliver AI functionality and services at both small and large scales.

1. **A synopsis of the curriculum**

This module aims to provide students with an understanding of the fundamentals of AI systems, including big data, machine learning, trained systems, genetic algorithms, deep neural networks, rule-based and fuzzy systems.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

* S.J. Russell & P. Norvig, “Artificial Intelligence: a modern approach”, 2nd Edition. Prentice-Hall, 2002. (main textbook)
* S. Pinker. “How the Mind Works”, W.W. Norton & Company, 1999.
* A. Cawsey, “The Essence of Artificial Intelligence”, Prentice-Hall, 1998.
* P. Bentley. “Digital Biology”, Simon & Schuster, 2002.

1. **Learning and teaching methods**

Total contact hours: 26

Private study hours: 124

Total study hours: 150

1. **Assessment methods**
   1. Main assessment methods

Project assessment 30% (approximately 20 hours)

In course test 20%

2 hour Exam 50%

13.2 Reassessment methods

Like for like assessment

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | *8.1* | *8.2* | *8.3* | *8.4* | *9.1* | *9.2* | *9.3* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |
| **Private Study** | X | X | X | X | X | X | X |
| *Classes* | X | X | X | X | X |  | X |
| *Lectures* | X | X | X | X |  | X |  |
| **Assessment method** |  |  |  |  |  |  |  |
| *In-course test* | X | X | X | X | X | X | X |
| *Examination* | X | X |  | X | X |  | X |
|  |  |  |  |  |  |  |  |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Medway

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of AI in today's technological innovation. The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language.

**FACULTIES SUPPORT OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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