

## Module Specification

1. Factual information			
<b>Module title</b>	<b>TM366: Artificial intelligence</b>	<b>Level</b>	<b>3</b>
<b>Module tutor</b>	TBA	<b>Credit value</b>	<b>30</b>
<b>Module type</b>	Taught	<b>Notional learning hours</b>	<b>8</b>
2. Rationale for the module and its links with other modules			
<p>Basic concepts in artificial intelligence are being used in huge research projects all over the world for the last three decades. This includes research and development at the industrial and academic levels. The module introduces the students to the basics natural intelligence where AI has been inspired and presents the AI concepts and techniques that are being used in advanced AI projects.</p>			
3. Aims of the module			
<p>The module aims to provide the students with an understanding of the fundamental concepts involved in natural and artificial intelligence (ASO, PSO, neural networks, evolutionary computing, robotics and genetic computing).</p>			
4. Pre-requisite modules or specified entry requirements			
<p>Students should have completed Module M269 before taking this module.</p>			

<b>5. Intended learning outcomes</b>	
<b>A. Knowledge and understanding</b>	<b>Learning and teaching strategy</b>
<p>Upon completion of this module the student will gain knowledge and understanding of:</p> <p><b>A1.</b> The aims of, and motivations for, artificial intelligence;</p> <p><b>A2.</b> The principal techniques used in traditional approaches to artificial intelligence, i.e. knowledge representation and search;</p> <p><b>A3.</b> The four key principles of nouvelle AI: interaction, emergence, adaptation and selection;</p> <p><b>A4.</b> The biological basis of modern techniques in AI;</p> <p><b>A5.</b> Key concepts and methods in artificial neural networks;</p> <p><b>A6.</b> Key concepts and methods in evolutionary computation.</p>	<ul style="list-style-type: none"> <li>• 25% face-to-face tutorial sessions</li> <li>• TMA work</li> <li>• module learning booklets and support material</li> </ul>
<b>B. Cognitive skills</b>	<b>Learning and teaching strategy</b>
<p>Upon completion of this module the student will be able to:</p> <p><b>B1.</b> Analyse a problem in terms of its amenability to solution by various computational methods;</p> <p><b>B2.</b> Formulate computational solutions to diverse problems;</p> <p><b>B3.</b> Select and use appropriate mathematical representations for a range of problem solving systems;</p> <p><b>B4.</b> Compare, contrast and evaluate competing approaches to computational problem solving and the simulation of intelligence;</p> <p><b>B5.</b> Synthesise the main concepts of the module into a clear and critical view of the strengths, weaknesses and future direction of AI.</p>	<ul style="list-style-type: none"> <li>• 25% face-to-face tutorial sessions</li> <li>• TMA work</li> <li>• module learning booklets and support material</li> </ul>

<b>C. Practical and professional skills</b>	<b>Learning and teaching strategy</b>
<p>Upon completion of this module the student will be able to:</p> <ul style="list-style-type: none"> <li><b>C1.</b> Analyse, design and evaluate computer simulations;</li> <li><b>C2.</b> Construct computer systems using an appropriate tool;</li> <li><b>C3.</b> Carry out experiments, with careful recording, analysis and evaluation of results;</li> <li><b>C4.</b> Use basic research techniques</li> </ul>	<ul style="list-style-type: none"> <li>• 25% face-to-face tutorial sessions</li> <li>• TMA work</li> <li>• module learning booklets and support material</li> </ul>

<b>D Key transferable skills</b>	<b>Learning and teaching strategy</b>
<p>Upon completion of this module the student will be able to:</p> <ul style="list-style-type: none"> <li><b>D1.</b> Apply appropriate computational problem-solving techniques to a range of problems;</li> <li><b>D2.</b> Communicate computational ideas relating to AI in clear and concise written English;</li> <li><b>D3.</b> Use appropriate graphical, logical and mathematical representations to characterize various types of AI system;</li> <li><b>D4.</b> Exercise general numeracy and problem-solving skills.</li> </ul>	<ul style="list-style-type: none"> <li>• 25% face-to-face tutorial sessions</li> <li>• TMA work</li> <li>• module learning booklets and support material</li> </ul>

<b>6. Indicative content.</b>	
Block 1	Intelligent machines
Block 2	Symbolic intelligence
Block 3	Natural intelligence
Block 4	Neural networks
Block 5	Evolutionary computation
Block 6	Reflections

7. Assessment strategy, assessment methods and their relative weightings
TMA Work: 20% MTA: 30% Exam: 50%

8. Mapping of assessment tasks to learning outcomes																			
Assessment tasks	Learning Outcomes																		
	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	C1	C2	C3	C4	D1	D2	D3	D4
TMA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MTA	✓	✓	✓			✓	✓		✓		✓		✓		✓	✓	✓		✓
Final		✓	✓	✓	✓	✓		✓	✓			✓	✓	✓					✓

9. Teaching staff associated with the module	
Tutor's name and contact details	Contact hours
TBA	

10. Key reading list				
Author	Year	Title	Publisher	Location
Module adopted from OU, UK.				

11. Other indicative text (e.g. websites)
<a href="https://lms.arabou.edu.kw">https://lms.arabou.edu.kw</a>