

COMP30024 Artificial Intelligence

Credit Points:	12.50									
Level:	3 (Undergraduate)									
Dates & Locations:	This subject is not offered in 2014.									
Time Commitment:	Contact Hours: 48 hours, comprising of two 1-hour lectures and one 2-hour workshop per week Total Time Commitment: 170 hours									
Prerequisites:	<p>One of the following:</p> <table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>COMP20003 Algorithms and Data Structures</td> <td>Semester 2</td> <td>12.50</td> </tr> <tr> <td>COMP20007 Design of Algorithms</td> <td>Semester 1</td> <td>12.50</td> </tr> </tbody> </table> <p>433-253 Algorithms and Data Structures 433-298 Algorithms and Data Structures</p>	Subject	Study Period Commencement:	Credit Points:	COMP20003 Algorithms and Data Structures	Semester 2	12.50	COMP20007 Design of Algorithms	Semester 1	12.50
Subject	Study Period Commencement:	Credit Points:								
COMP20003 Algorithms and Data Structures	Semester 2	12.50								
COMP20007 Design of Algorithms	Semester 1	12.50								
Corequisites:	None									
Recommended Background Knowledge:	None									
Non Allowed Subjects:	433-303 Artificial Intelligence									
Core Participation Requirements:	<p><p>For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.</p> <p>It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability</p></p>									
Contact:	email: caleckie (caleckie) @unimelb.edu.au (mailto:tbaldwin@unimelb.edu.au)									
Subject Overview:	<p>AIMS</p> <p>Artificial intelligence is the quest to create intelligent agents that can complete complex tasks which are at present only achievable by humans. This broad field covers logic, probability, perception, reasoning, learning and action; and everything from Mars Rover robotic explorers to the Watson Jeopardy playing program. You will explore some of the vast area of artificial intelligence. Topics covered include: searching, problem solving, logic and deduction, knowledge representation and machine learning. Topics may also include some of the following: game playing, expert systems, pattern recognition, machine vision, natural language, robotics and planning, neural networks.</p> <p>INDICATIVE CONTENT</p> <ul style="list-style-type: none"> # Agents and search # Probabilistic reasoning # Machine Learning # Pattern recognition for robotics 									
Learning Outcomes:	INTENDED LEARNING OUTCOMES (ILO)									

	<p>On completion of this subject the student is expected to:</p> <ol style="list-style-type: none"> 1 Identify problems that can be solved by search, and create search-based solution algorithms 2 Design intelligent agents for such tasks 3 Choose the best search-based solving methods for a particular problem 4 Make use of formal approaches for representing and reasoning about knowledge 5 Build systems that use simple learning approaches to improve their performance
Assessment:	<p>A programming project in two parts during semester, expected to take about 36 hours (30%) 3-hour end-of-semester written examination (70%) Hurdle requirement: To pass the subject, students must obtain at least 50% overall 15/30 in project work And 35/70 in the written examination A component of the marks for the project work will be based on the individual contribution to the project. Intended Learning Outcomes (ILOs) 1-4 are addressed in the lectures, workshops exercises and examination. ILO 5 is addressed in the project work.</p>
Prescribed Texts:	None
Breadth Options:	<p>This subject potentially can be taken as a breadth subject component for the following courses:</p> <ul style="list-style-type: none"> # Bachelor of Arts (https://handbook.unimelb.edu.au/view/2014/B-ARTS) # Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2014/B-COM) # Bachelor of Music (https://handbook.unimelb.edu.au/view/2014/B-MUS) <p>You should visit learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html) and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.</p>
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<p>On completion of this subject students should have developed the following generic skills:</p> <ul style="list-style-type: none"> # The ability to analyse and solve problems involving complex reasoning # The ability to synthesise information and communicate results effectively # The capacity for critical and independent thought and reflection # The ability to apply knowledge of basic science and engineering fundamentals # The ability to undertake problem identification, formulation and solution
Notes:	<p>INDICATIVE KEY LEARNING RSEOURCES</p> <p>Students have access to lecture notes, lecture slides, tutorial exercises, and a test environment for evaluating their project submissions.</p> <p>CAREERS/INDUSTRY LINKS</p> <p>The material inthis subject is highly relevant to the growing industry of data analytics in fields such as medicine, computer gaming, finance and industrial auto material. Examples of guest lecturers who have been involved in this subject include staff of Telstra and NICTA.</p>
Related Majors/Minors/ Specialisations:	<p>Computing and Software Systems Master of Engineering (Software with Business)</p>