433-484 Machine Learning

Credit Points:	12.50
Level:	4 (Undergraduate)
Dates & Locations:	This subject is not offered in 2009.
Time Commitment:	Contact Hours: Twenty-four hours of lectures, 11 hours of workshops Total Time Commitment: Not available
Prerequisites:	Study at the third-year level in at least four of the following areas: artificial intelligence, computer design, database systems, graphics, interactive system design, networks and communications, operating systems, programming languages, software engineering, and theory of computation. Prior study in the areas of database systems and artificial intellengence would be helpful.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	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. 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
Subject Overview:	This subject provides an introduction to the field of machine learning. Machine learning is the task of unearthing regularities in data, and using these to enhance understanding of general processes or to predict future events. Topics covered include: association rules, clustering, decision trees, decision rules, instance-based learning, statistical learning, numeric prediction, linear discrimination, weakly supervised classification, discretisation, feature selection and classifier combination.
Objectives:	On completion, students should: # be able to appreciate the role of machine learning in AI theory and applications; # be able to explain the main current techniques used to implement machine learning (data mining); # be able to design and implement simple machine learning systems; # be able to undertake problem identification, formulation and solution; # have a capacity for independent critical thought, rational inquiry and self-directed learning; and # have a profound respect for truth and intellectual integrity, and for the ethics of scholarship.
Assessment:	Project work expected to take about 36 hours during semester (50%), and a 3-hour end of semester written examination (50%).
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	On completion of this subject students should: # be able to undertake problem identification, formulation and solution.

Notes:	Credit may not be gained for both 433-484 Machine Learning and 433-684 Machine Learning.
Related Course(s):	Bachelor of Computer Science (Honours) Bachelor of Engineering (Computer Engineering) Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (Software Engineering)