FIT5047
Intelligent systems

Unit Guide

Semester 1, 2010

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

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FIT5047 Intelligent systems - Semester 1, 2010

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Introduction

Welcome to FIT5047 Intelligent Systems. This 6 point unit has been designed to provide you with an introduction to designing intelligent software systems.

Unit synopsis

This is the foundation unit for the Intelligent Systems Specialisation. It introduces the main problems and approaches to designing intelligent software systems including automated search methods, reasoning under uncertainty, planning, software agents, recommender systems, machine learning paradigms, natural language processing, user modelling and evolutionary algorithms.

Learning outcomes

At the completion of this unit students will have -
A knowledge and understanding of:

- the applications of intelligent software systems in the domains of Pervasive Computing, Web Services and Business Intelligence;
- the principles and theoretical underpinning of intelligent software systems;
- Models and approaches to building intelligent software systems;
- different software toolkits and development environments;
- current research trends in the field.

Developed attitudes that enable them to:

- foster critical and independent analysis of how intelligent techniques can be used to enhance software applications and the development of smart environments.

Developed the skills to:

- design and develop of intelligent applications particularly in the domains of Pervasive Computing, Web Services and Business Intelligence;
- select and apply appropriate tools for a particular application.

Contact hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

For on campus students, workload commitments are:

- two-hour lecture
- two-hour tutorial (requiring advance preparation)
- a minimum of 3 hours of personal study per week
Unit relationships

Prohibitions

CSE5610
Teaching and learning method

Teaching approach

The approach to teaching and learning includes a weekly two-hour lecture and a two-hour tutorial/laboratory. Additionally, each student should spend a minimum of 8 to 12 hours for personal study every week and should allocate up to 5 hours per week in some weeks for use of a computer.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, http://mutts.monash.edu.au/MUTTS/

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: http://allocate.its.monash.edu.au/

Unit Schedule

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Improvements to this unit

Assessment weight has been changed due to students' feedback.
Unit Resources

Prescribed text(s) and readings


All resources including publications related to the subject can be downloaded from the subject web site.

Recommended text(s) and readings

Korb and Nicholson: *Bayesian Artificial Intelligence*, Capman and Hall.

Required software and/or hardware

JADE Agent Toolkit

Java SDK and JRE

Weka Data Mining Toolkit

Equipment and consumables required or provided

Students are required to have access to the standard system configuration available in the computer labs, and regular Internet access.

Study resources

Study resources we will provide for your study are:

Lecture notes provided on MUSO and tutorial questions.
Assessment

Overview

Examination (3 hours): 50%; In-semester assessment: 50%

Faculty assessment policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit.

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website: http://www.infotech.monash.edu.au/resources/student/forms/
You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

- Assignment task 1
  
  Title:
  Problem solving, knowledge representation and planning
  
  Description:
  Problem Solving Exercise on knowledge representation and planning
  
  Weighting:
  15%
  
  Due date:
  Available on MUSO

- Assignment task 2
  
  Title:
  Bayesian networks and machine learning
  
  Description:
  Problem Solving Exercise on Bayesian Networks and Machine Learning
  
  Weighting:
  10%
  
  Due date:
  Available on MUSO
Assignment task 3

Title: Software Agents

Description: Practical/Programming Assignment involving implementation of a simple agent system using JADE Agent Toolkit.

Weighting: 25%

Due date: Available on MUSO

Examination

- Weighting: 50%
- Length: 3 hours
- Type (open/closed book): Closed book

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms: http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html

Late assignment

Assignments received after the due date will be subject to a penalty of 10% deduction in marks per day. Assignments received later than one week after the due date will not normally be accepted.

Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.
Appendix

Please visit the following URL: [http://www.infotech.monash.edu.au/units/appendix.html](http://www.infotech.monash.edu.au/units/appendix.html) for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams