

COMP90025 Parallel and Multicore Computing

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2011.
Time Commitment:	Contact Hours: 3 hours per week; Non-contact time commitment: 84 hours Total Time Commitment: Not available
Prerequisites:	Knowledge of Operating Systems and Networks, and C Programming
Corequisites:	None
Recommended Background Knowledge:	C programming and UNIX familiarity.
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 Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.services.unimelb.edu.au/disability/
Contact:	Dr Aaron Harwood email: aharwood@unimelb.edu.au (mailto:aharwood@unimelb.edu.au)
Subject Overview:	The subject revises parallel architectures and computations with focus on network and communication complexity. A number of network programming techniques are covered. The subject introduces formal communication complexity and two models of parallel computing. Some advanced parallel algorithms are discussed including distributed hash tables and parallel priority queues.
Objectives:	On completion students will: # Gain an understanding of parallel computing models, architectures, algorithms and programming languages
Assessment:	Written/practical assignments (expected to take about 40 hours) 40%, and a written 3-hour examination 60%. Each assessment item has a hurdle mark equal to half the maximum mark possible for that assessment item. Students who fail any hurdle(s) will have their final mark adjusted so as to ensure that they fail the subject as a whole by at least the amount by which they failed the hurdle(s).
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 successful completion students will be able to: # Analyse and compare parallel computer architectures with respect to a given parallel computing model # Determine the complexity of a given parallel algorithm # Parallelise a sequential algorithm using a variety of techniques for different kinds of parallel computing architectures and problems # Use a number of parallel programming interfaces to implement a parallel program and report observations of performance
Related Course(s):	Master of Science (Computer Science)

	Master of Software Systems Engineering
Related Majors/Minors/ Specialisations:	Master of Engineering (Software)