COMP90050 Advanced Database Systems

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2013.
Time Commitment:	Contact Hours: 36 hours, made up of 24 one-hour lectures (two per week) and 12 one-hour workshops (one per week) Total Time Commitment: 120 hours.
Prerequisites:	One of the following: **Subject** / **Study Period Commencement:** / **Credit Points:** SINF90001 Database Systems & Information Modelling — Not offered 2013 — 12.50 INFO20003 Database Systems — Not offered 2013 — 12.50 INFO20001 Informatics 3: Content Management — Not offered 2013 — 12.50 AND Completion of 50 points of third year computing study or equivalent. GRADUATE Admission to Masters degree.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	**Subject** / **Study Period Commencement:** / **Credit Points:** COMP90010 Web Technologies and Applications — Not offered 2013 — 12.50 433-421 Web Technologies and Applications 433-461 High Performance Database Systems 433-621 Web Technologies and Applications 433-661 High Performance Database Systems
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 Overview, Objectives, 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 the Disability Liaison Unit: http://www.services.unimelb.edu.au/disability/
Contact:	email: **kotagiri@unimelb.edu.au (mailto:kotagiri@unimelb.edu.au)**
Subject Overview:	Many applications require access to very large amounts of data. These applications often require reliability (data must not be lost even in the presence of hardware failures), and the ability to retrieve and process the data very efficiently. The subject will cover the technologies used in advanced database systems. Topics covered will include: transactions, including concurrency, reliability (the ACID properties) and performance; and indexing of both structured and unstructured data. The subject will also

	cover additional topics such as: uncertain data; Xquery; the Semantic Web and the Resource Description Framework; dataspaces and data provenance; datacentres; and data archiving.
Objectives:	On completion of this subject students should be able to: 1. Understand issues related performance and reliability in building applications involving large-scale database systems. 2. Understand Database Technologies used in large-scale applications such as Google search Engines. 3. Understand the concepts and technologies underpinning new forms of Web data 4. Deep knowledge of transaction processing and recovery from failures and concepts employed in modern database systems.
Assessment:	Two written assignments, due in approximately weeks 6 and 11, of approximately 1750 words each (20% each). The first assignment is to consolidate the concepts related to performance issues that depend on Hardware Technologies, Reliability, Transaction processing and various degrees of Isolation. The second assignment deals with various database technologies employed in the state of the art applications such as Google, Microsoft search engines and the emerging new trends in database technologies such as in-memory database systems, map reduce based large scale database applications. The assignments are designed so that to attain ILO 1-2 and all General skills. And a 2-hour end-of-semester open-book written examination (60%). This test assesses all topics covered in the subject.
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 the subject the student should have the: # Ability to undertake problem identification, formulation, and solution # Ability to utilise a systems approach to complex problems and to design and operational performance # Ability to manage information and documentation # Capacity for creativity and innovation # Ability to communicate effectively, with the engineering team and with the community at large
Related Course(s):	Master of Engineering in Distributed Computing Master of Information Technology Master of Information Technology Master of Information Technology Master of Philosophy - Engineering Master of Science (Computer Science) Master of Software Systems Engineering Ph.D.- Engineering
Related Majors/Minors/ Specialisations:	B-ENG Software Engineering stream Master of Engineering (Software)