

## 433-461 High Performance Database Systems

<b>Credit Points:</b>	12.500
<b>Level:</b>	Undergraduate
<b>Dates &amp; Locations:</b>	2008, This subject commences in the following study period/s: Semester 2, - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: Twenty-four hours of lectures, 11 hours of workshops Total Time Commitment: Not available
<b>Prerequisites:</b>	At least H3 in 50 points of 300-level Computer Science subjects. Previous study in databases (433-351 Database Systems or equivalent) and operating systems (433-332 Operating Systems or equivalent).
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;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.&lt;/p&gt;         &lt;p&gt;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: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt; </p>
<b>Coordinator:</b>	Prof Rao Kotagiri
<b>Subject Overview:</b>	<p>Successful companies and organisations rely on the effective and efficient manipulation of data. These include telecommunication companies, banking, retailing, airlines, manufacturing, process control and government instrumentalities. Many end-user applications require the support of a database system. For these applications to be effective, a database system must provide secure and reliable storage of data and be able to retrieve and process the data very efficiently. Knowledge of how the database system works at the architectural level is essential to achieve correct behaviour and the best possible performance for these applications. This subject explores various mechanisms which are used by database systems to provide the features that applications require. Topics covered include database architecture: centralised, distributed, client-server; transaction models: ACID properties, pessimistic locking, optimistic locking, flat transactions, nested transactions, deadlock detection and management; recovery: write-ahead logging, shadow paging; indexing structures: B-trees, hash files, multi-attribute indexing; relational operations: join algorithms, query optimisation; and performance: benchmarking, TPC benchmarks, object-oriented benchmarks. All topics are addressed in the context of both relational and object-oriented database systems, including various commercial database systems.</p>
<b>Assessment:</b>	Project work, expected to take about 36 hours, during semester (30%) and a 2-hour end of semester written examination (70%).
<b>Prescribed Texts:</b>	None
<b>Recommended Texts:</b>	Information Not Available
<b>Breadth Options:</b>	This subject is not available as a breadth subject.

<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	Upon successful completion of this subject, students will: have developed better presentation skills; be able to perform comparative analysis of complex systems; have improved problem-solving skills.
<b>Notes:</b>	Credit may not be gained for both 433-461 High Performance Database Systems and 433-661 High Performance Database Systems.
<b>Related Course(s):</b>	Bachelor of Computer Science (Honours) Bachelor of Engineering (Computer Engineering) Bachelor of Engineering (Electrical Engineering) Bachelor of Engineering (Software Engineering)