

SINF90001 Database Systems & Information Modelling

Credit Points:	12.50						
Level:	9 (Graduate/Postgraduate)						
Dates & Locations:	This subject is not offered in 2014.						
Time Commitment:	Contact Hours: 36 hours, comprising of one-3 hour seminar per week. Total Time Commitment: 200 hours						
Prerequisites:	None						
Corequisites:	None						
Recommended Background Knowledge:	None						
Non Allowed Subjects:	<table border="1"> <thead> <tr> <th>Subject</th> <th>Study Period Commencement:</th> <th>Credit Points:</th> </tr> </thead> <tbody> <tr> <td>INFO20003 Database Systems</td> <td>Semester 2</td> <td>12.50</td> </tr> </tbody> </table>	Subject	Study Period Commencement:	Credit Points:	INFO20003 Database Systems	Semester 2	12.50
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INFO20003 Database Systems	Semester 2	12.50					
Core Participation Requirements:	<p><p>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.</p> <p>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</p></p>						
Contact:	Email: sean.maynard@unimelb.edu.au (mailto:sean.maynard@unimelb.edu.au)						
Subject Overview:	<p>AIMS</p> <p>The subject introduces key topics in modern information organization, particularly with regard to structured databases. The well-founded relational theory behind modern structured query language (SQL) engines, has given them as much a place behind the web site of an organization and on the desktop, as they traditionally enjoyed on corporate mainframes. Topics covered may include: the managerial view of data, information and knowledge; conceptual, logical and physical data modelling; normalization and de-normalization; the SQL language; data integrity; transaction processing, data warehousing, web services and organizational memory technologies. This is a foundation subject is a core subject for both the Master of Information Systems and Master of Information Technology.</p> <p>INDICATIVE CONTENT</p> <p>This subject serves as an introduction to databases and data modelling from a data management perspective. Database design, from conceptual design through to physical implementation will be covered. This will include Entity Relationship modelling, normalisation and de-normalisation and SQL. Additionally the use of databases in various contexts will be explored (web based databases, connecting programs to databases, data warehousing, health contexts, geospatial databases).</p>						
Learning Outcomes:	<p>INTENDED LEARNING OUTCOMES (ILO)</p> <p>Having completed this unit the student is expected to:</p> <ol style="list-style-type: none"> 1 Understand the different technologies available to manage structured data, and the evolutionary process that led to them 						

	<ol style="list-style-type: none"> 2 Be able to construct data models at the conceptual, logical and physical level from real-world, natural language requirements documents and apply data normalisation to these models 3 Be able to competently use a CASE tool (computer-aided software engineering) 4 Be competent in basic SQL and familiar with the usage of advanced SQL commands 5 Understand the need and mechanism for database transactions, including the so-called ACID properties 6 Be familiar with technologies and techniques connecting databases to web browser-based interfaces (eg JavaScript, ASP and JSP), and connecting to web services 7 Understand the relationship of database systems to a variety of fields including data warehousing, health informatics and Geospatial applications <p>Through the combination of seminars, labs and assignments, students gain expertise and confidence to make informed decisions about database systems and appropriate modelling techniques for the structured informational needs of modern organisations. They will gain considerable hands-on experience in modelling a number of diverse informational situations, drawing upon the first principles and techniques taught, useful to both organisations and individuals.</p>
Assessment:	<p>A database design for a real-world problem completed in teams of two students (30%). This project consists of a set of conceptual, logical and physical designs (equivalent to 3000 about words), along with about 1000 words in a data dictionary format and is due about halfway through semester. Addresses Intended Learning Outcomes (ILOs) 1-3. A set of answers completed individually using SQL to a series of questions run against a known database with fixed data content (10%) about 1000 words, due approximately in week 10 of semester (addressing ILO 4) A two-hour closed book examination in the examination period (60%). (addressing ILOs 1-2, 4-7) Hurdle requirement: To pass the subject students must obtain at least: 50% of the marks available for the non-examination based assessment 50% of the marks available for the examination</p>
Prescribed Texts:	<p>There are no prescribed texts for this subject. An extensive set of subject notes will be available from the University Bookshop.</p>
Breadth Options:	<p>This subject is not available as a breadth subject.</p>
Fees Information:	<p>Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees</p>
Generic Skills:	<p>The student will acquire skills in Information Modelling - a generic skill that will serve the student well throughout a career in Information Systems. Scoping within analysis is also a valuable cross-discipline skill honed during this subject.</p>
Notes:	<p>LEARNING AND TEACHING METHODS</p> <p>The subject is delivered in 3 hour classes. Each class will be made up of a combination of lectures, discussions and computer laboratory based learning. Outside class, students will study the practice of database implementation and usage and are encouraged to install and use a DBMS on their own computer as part of the course.</p> <p>INDICATIVE KEY LEARNING RESOURCES</p> <p>Whilst there is no single text for this subject, students would be encouraged to utilize one of the many Database textbooks available, there are a number of these in the Library. Additional readings will be made available as necessary via the LMS</p> <p>CAREERS / INDUSTRY LINKS</p> <p>This subject is one of the building blocks for most careers in IT. A database makes the management of information possible and is one of the most prominently used technologies within all organisations.</p>
Related Course(s):	<p>Graduate Certificate in Information Systems Master of Information Systems Master of Information Technology Master of Information Technology Master of Information Technology Master of Philosophy - Engineering Master of Science (Information Systems)</p>

Ph.D.- Engineering