MONASH University

FIT9019
Database technology

Unit Guide

Semester 2, 2009

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Table of Contents

FIT9019 Database technology - Semester 2, 2009 1
Chief Examiner: 1
Lecturer(s) / Leader(s): 1
Caulfield 1
Introduction 2
Unit synopsis 2
Learning outcomes 2
Contact hours 2
Workload 2
Unit relationships 2
Prerequisites 3
Prohibitions 3
Relationships 3
Teaching and learning method 4
Timetable information 4
Tutorial allocation 4
Unit Schedule 4
Unit Resources 5
Prescribed text(s) and readings 5
Recommended text(s) and readings 5
Required software and/or hardware 5
Equipment and consumables required or provided 5
Study resources 5
Assessment 6
Overview 6
Faculty assessment policy 6
Assignment tasks 6
Examination 7
Due dates and extensions 7
Late assignment 7
Return dates 7
Appendix 8

FIT9019 Database technology - Semester 2, 2009

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Caulfield

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Introduction

Welcome to FIT9019 Database Technology, Semester 2, 2009.

FIT9019 is a unit designed to introduce the student to database technology. It assumes no previous database knowledge.

Unit synopsis

Database concepts and models, relational database management systems, semantic data modelling, entities and entity relationship modelling, normalisation, user requirements specification, database specification. Storage media and data organisation, logical data structures: linear and non-linear. Physical database implementation, integrity, backup, recovery, security. Structured Query Language, database administration. Current topics; distributed database, data warehousing, Object-oriented database.

Learning outcomes

At the completion of the unit, students will be expected to:

1. understand the motivations behind the development of database management systems.
2. appreciate the underlying theoretical basis of the relational database model and how this model may be implemented in practice
3. understand the differences between non-relational database models and the relational database mode
4. be able to apply logical and physical database design principles to a database implementation.
5. be conversant with Structured Query Language (SQL).
6. understand the processes involved in database administration, transaction management, concurrency control, restart and recovery.

Contact hours

2 hours of lectures/week, 2 hours of tutorials/week

Workload

Workload commitments are:

- two-hour lecture and
- two-hour tutorial (or laboratory) (requiring advance preparation)
- a minimum of 2-3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.

You will need to allocate up to 5 hours per week in some weeks, for use of a computer, including time for newsgroups/discussion groups.

Unit relationships

Prerequisites

Must be enrolled in the MAIT

Prohibitions

CSE9002

Relationships

Please refer to the official University handbook entry.

Teaching and learning method

- Lectures
- Tutorials - discussion and computer-based exercises (SQL)
- Assignments * 2

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.cc.monash.edu.au/

Unit Schedule

Week	Topic	Key dates
1	Introduction	Jul 22
2	Relational Data Model	Jul 29
3	Database Design 1	Aug 05
4	Database Design 2	Aug 12
5	SQL 1	Aug 19
6	SQL 2	Aug 26
7	SQL 3	Sep 02
8	Physical Database Design	Sep 09
9	Implementation Issues 1	Sep 16
10	Implementation Issues 2	Sep 23
Mid semester break		
11	Database Security, Concurrency & Recovery	Oct 07
12	Emerging Trends in Databases	Oct 14
13	Review	Oct 21

Unit Resources

Prescribed text(s) and readings

Please see Recommended texts

Recommended text(s) and readings

Connolly, T. and Begg, C., Database Systems - A Practical Approach to Design, Implementation and Management (4th ed.), Addison-Wesley, 2005, ISBN -13 978-0-321-21025-8.

Elmasri, R. & Navathe, S.B. Fundamentals of Database Systems (5th ed.), Addison-Wesley, 2007, ISBN-13: 978-0-321-36957-2.

Required software and/or hardware

To access weekly lecture/class materials, you will need an Adobe Acrobat reader, and Microsoft Office software (PowerPoint, Word, and Excel).

Equipment and consumables required or provided

You will need access to:
- a personal computer with access to the internet via dial-up connection or preferably by broadband
- a printer for assignments

On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook.

Study resources

Study resources we will provide for your study are:

Unit Web Page: Login to Moodle

Lecture notes/PowerPoint slides, tutorial sheets, assignment specifications and other relevant materials will be posted on the web site each week.

The following database management system software will be used in FIT9019:
• Microsoft Access
• Oracle 10g
The above software will be provided in the Monash computing laboratories. It is not necessary for the student to purchase any software.

Assessment

Overview

Assignments: 35%, Exam; 65%

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 44% then a mark of no greater than 44-N will be recorded for the unit.

In order to obtain a credit or better for this unit, a student must also gain the following:
- at least 50% of the marks available for the exam

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:
  Assignment 1 (Data Modelling)
  Description:
  The assignment specification will be handed out in lectures and also be available on the web site.
  Weighting:
  20%
  Due date:
  Week 6

- **Assignment task 2**

  Title:
  Assignment 2 (SQL)
  Description:
  The assignment specification will be handed out in lectures and also be available on the web site.
  Weighting:
  15%
  Due date:

Examination

- **Weighting:** 65%
  Length: 2 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

If you believe that your assignment will be delayed because of circumstances beyond your control such as illness, you should apply for an extension prior to the due date. All applications for extensions must be made in writing to your lecturer. Medical certificates or other supporting documentation will be required.

Late assignments submitted without an approved extension may be accepted (up to one week late) at the discretion of the lecturer, but will be penalised at the rate of 10% of total assignment marks per day (including weekends). 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 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