MONASH University
Information Technology

**FIT2077
Database design**

Unit Guide

Semester 1, 2012

The information contained in this unit guide is correct at time of publication. The University has the right to change any of the elements contained in this document at any time.

Last updated: 22 Feb 2012

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FIT2077 Database design - Semester 1, 2012

This unit looks at the design and implementation issues of database management systems. Advanced database design using the object-relational approach and multi-dimensional database design are explored. Record, file and index structures are dealt with at the basic level. Higher level details of consistency, atomicity and durability are introduced along with modern trends in databases.

Mode of Delivery

Caulfield (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload

Students will be expected to spend a total of 12 hours per week during semester on this unit as follows:

- Lectures: 2 hours per week
- Tutorials/Lab Sessions: 2 hours per week per tutorial
- and up to an additional 8 hours in some weeks for completing lab and project work, private study and revision.

Unit Relationships

Prohibitions

CSE3000, FIT3118, FIT4038

Prerequisites

FIT1004 or CSE2132 or equivalent

Chief Examiner

Associate Professor David Taniar

Campus Lecturer

Caulfield

David Taniar

Tutors

Caulfield

Winy (Geng Zhao)

Jason (Kefeng Xuan)

Sultan Alamri

Academic Overview

Outcomes

At the completion of this unit students will be able to:

- understand object-relational database design;
- understand multi-dimensional database design;
- understand query optimisation and its impact on programming;
- understand semi-structured database design and retrieval;
- understand database trends and current research directions in database management.

Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:

a. engage in an internationalised world
b. exhibit cross-cultural competence
c. demonstrate ethical values

critical and creative scholars who:

a. produce innovative solutions to problems
b. apply research skills to a range of challenges
c. communicate perceptively and effectively

Assessment Summary

Examination (3 hours): 60%; In-semester assessment: 40%

Assessment Task	Value	Due Date
Class Test	10%	Class Test, Tuesday 24 April 2012
Assignment	30%	Week 11, Friday 18 May 2012
Examination 1	60%	To be advised

Teaching Approach

Lecture and tutorials or problem classes

This teaching and learning approach provides facilitated learning, practical exploration and peer learning.

Feedback

Our feedback to You

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
- Solutions to tutes, labs and assignments

Your feedback to Us

Monash is committed to excellence in education and regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through SETU, Student Evaluation of Teacher and Unit. The University's student evaluation policy requires that every unit is evaluated each year. Students are strongly encouraged to complete the surveys. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

For more information on Monash's educational strategy, and on student evaluations, see:
http://www.monash.edu.au/about/monash-directions/directions.html
http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this unit

If you wish to view how previous students rated this unit, please go to
https://emuapps.monash.edu.au/unitevaluations/index.jsp

Recommended Resources

Rob & Coronel, Database Systems, a chapter on Data Warehousing

Rahayu, Taniar & Pardede, Object-Oriented Oracle, the first three chapters

Elmasri & Navathe, Fundamentals of Database Systems, a chapter on Indexing

Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Multidimensional Database Design: Introduction	
2	Multidimensional Database Design: Modelling	
3	Multidimensional Database Design: Modelling (Adv)	
4	Multidimensional Database Design: Queries	
5	Object-Relational Database Design: Transformation	
6	Object-Relational Database Design: Manipulations	
7	Object-Relational Database Design: DW Design	
8	Object-Relational Database Design: Advanced DW Design	Class Test, Tuesday 24 April 2012
9	Physical Database Design	
10	Physical Database Design	
11	Semi-structured Database Design and Storage	Assignment due, Friday 18 May 2012
12	Semi-structured Database Design and Storage	
	SWOT VAC	No formal assessment is undertaken SWOT VAC
	Examination period	LINK to Assessment Policy: http://policy.monash.edu.au/policy-bank/ academic/education/assessment/ assessment-in-coursework-policy.html

*Unit Schedule details will be maintained and communicated to you via your MUSO (Blackboard or Moodle) learning system.

Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles
(http://www.infotech.monash.edu.au/resources/staff/edgov/policies/assessment-examinations/unit-assessment-hu

Assessment Tasks

Participation

- **Assessment task 1**

    Title:
    Class Test
    Description:
    Multidimensional, object-relational, and physical database design
    Weighting:
    10%
    Criteria for assessment:
    This is an individual class test. Students will be assessed for their understanding on
    multidimensional design, object-relational design, and physical database design. Case
    studies will be given as well.
    Due date:
    Class Test, Tuesday 24 April 2012

- **Assessment task 2**

    Title:
    Assignment
    Description:
    Multidimensional, object-relational, and physical database design
    Weighting:
    30%
    Criteria for assessment:
    Students will develop a database design incorporating multidimensional design, temporal
    design using object-relational methods, and query optimization. A case study will be given
    as well.
    Due date:
    Week 11, Friday 18 May 2012

Examinations

- **Examination 1**

    Weighting:
    60%
    Length:
    3 hours
    Type (open/closed book):
    Closed book

Electronic devices allowed in the exam:
None

Assignment submission

It is a University requirement
(http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html) for students to submit an assignment coversheet for each assessment item. Faculty Assignment coversheets can be found at http://www.infotech.monash.edu.au/resources/student/forms/. Please check with your Lecturer on the submission method for your assignment coversheet (e.g. attach a file to the online assignment submission, hand-in a hard copy, or use an online quiz).

Online submission

If Electronic Submission has been approved for your unit, please submit your work via the VLE site for this unit, which you can access via links in the my.monash portal.

Extensions and penalties

Submission must be made by the due date otherwise penalties will be enforced.

You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process:
http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html.

Returning assignments

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Other Information

Policies

Monash has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University's academic standards, and to provide advice on how they might uphold them. You can find Monash's Education Policies at:
http://policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Plagiarism
  (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html)
- Assessment
  (http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-po
- Special Consideration
  (http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h
- Grading Scale
  (http://www.policy.monash.edu/policy-bank/academic/education/assessment/grading-scale-policy.html)
- Discipline: Student Policy
  (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-discipline-policy.html)
- Academic Calendar and Semesters (http://www.monash.edu.au/students/key-dates/);
- Orientation and Transition (http://www.infotech.monash.edu.au/resources/student/orientation/);
  and
- Academic and Administrative Complaints and Grievances Policy
  (http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy.
- Codes of Practice for Teaching and Learning
  (http://www.policy.monash.edu.au/policy-bank/academic/education/conduct/suppdocs/code-of-practice-tea

Student services

The University provides many different kinds of support services for you. Contact your tutor if you need advice and see the range of services available at www.monash.edu.au/students. For Sunway see http://www.monash.edu.my/Student-services, and for South Africa see http://www.monash.ac.za/current/

The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to http://www.lib.monash.edu.au or the library tab in my.monash portal for more information. At Sunway, visit the Library and Learning Commons at http://www.lib.monash.edu.my/. At South Africa visit http://www.lib.monash.ac.za/.

Academic support services may be available for students who have a disability or medical condition. Registration with the Disability Liaison Unit is required. Further information is available as follows:

- Website: http://monash.edu/equity-diversity/disability/index.html;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus, or Student Community Services Department, Level 2, Building 2, Monash University, Sunway Campus
- Telephone: 03 9905 5704, or contact the Student Advisor, Student Commuity Services at 03 55146018 at Sunway