



MONASH University

FIT5043
Distributed database

Unit Guide

Semester 2, 2009

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.

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FIT5043 Distributed database - Semester 2, 2009

Chief Examiner:

Associate Professor David Taniar

Associate Professor

Phone: +61 3 990 59693

Fax: +61 3 990 55159

Lecturer(s) / Leader(s):

Caulfield

Dr Mohamed Medhat Gaber

Unit synopsis

This unit focuses on designing, developing and deploying distributed database systems. The unit introduces various contemporary issues including data model partitioning, fragmentation, replication issues, query optimisation, concurrency control, restart and recovery, distributed database design, client-server and distributed database applications. Particular attention will be paid to detailed consideration of distributed database management issues.

Learning outcomes

At the conclusion of this unit students will:

1. be familiar with the currently available models, technologies for and approaches to building distributed database systems;
2. have developed practical skills in the use of these models and approaches, so that they will be able to select and apply the appropriate tools for a particular case;
3. be aware of the current research directions in the field and their possible outcomes

be able to carry out research on a relevant topic, identify primary references, analyse them and come up with meaningful conclusions;

4. be able to apply learned skills to solving practical database related tasks.

Contact hours

2 hours lectures/week, 2 hours tutorials/week

Unit relationships

Prerequisites

For MAIT students: [FIT9017](#), [FIT9018](#), [FIT9019](#), [FIT9030](#), [FIT9020](#) and [FIT4037](#).

Relationships

FIT5043 is a unit in the MAIT program. Before attempting this unit MAIT students, must have satisfactorily completed FIT9017, FIT9018, FIT9019, FIT9030, FIT9020 and FIT4037 or equivalent.

You may not study this unit and CSE5200 in your degree.

Teaching and learning method

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	Distributed Computing and Database Systems: An Introduction	
2	Distributed Database Design I: Design Strategies and Horizontal Fragmentation	
3	Distributed Database Design II: Vertical Fragmentation and Allocation	
4	Semantic Data Control	
5	Introduction to Transaction Management	
6	Distributed Concurrency Control I	
7	Distributed Concurrency Control II	
8	Distributed Query Processing I	
9	Distributed Query Processing II	
10	Advanced Topics: Data Stream Processing I	
Mid semester break		
11	Advanced Topics: Data Stream Processing II	
12	Advanced Topics: Data Stream Processing @ Monash University	
13	Demonstrations	

Unit Resources

Prescribed text(s) and readings

Oszu, T. and Valduriez, P. Principles of Distributed Database Systems, 2nd ed., Prentice-Hall, 1999

Text books are available from the [Monash University Book Shops](#). Availability from other suppliers cannot be assured. The Bookshop orders texts in specifically for this unit. You are advised to purchase your text book early.

Recommended text(s) and readings

Oszu, T. and Valduriez, P. **Principles of Distributed Database Systems**, 2nd ed., Prentice-Hall, 1999

Gama J., and Gaber M. M. (Eds), **Learning from Data Streams: Processing Techniques in Sensor Networks**, a book published by Springer Verlag, ISBN 3540736786, 9783540736783, 2007.

Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. 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. You will need to allocate time each week for use of a computer, including time for newsgroups/discussion groups.

Study resources

Study resources we will provide for your study are:

Assessment

Overview

Assignments/Tutorial exercises and attendance: 90%; Presentation: 10%

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.

A 2% deduction per day for late submission

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

Assignments received after the due date will be subject to a penalty of 2% deduction per day for late submission.

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