Table of Contents

**FIT5043 Distributed database - Semester 2, 2013** ................................................................. 1
  - Mode of Delivery .................................................................................................................. 1
  - Contact Hours ................................................................................................................... 1
  - Workload requirements .................................................................................................... 1
  - Unit Relationships ........................................................................................................... 1
    - Prohibitions ................................................................................................................... 1
    - Prerequisites .................................................................................................................. 1
  - Chief Examiner .................................................................................................................. 1
  - Campus Lecturer ............................................................................................................... 1
    - Caulfield ....................................................................................................................... 1

**Academic Overview** ......................................................................................................... 2
  - Learning Outcomes ........................................................................................................... 2

**Unit Schedule** ................................................................................................................... 3
  - Assessment Summary ........................................................................................................ 3
  - Teaching Approach .......................................................................................................... 4

**Assessment Requirements** .............................................................................................. 5
  - Assessment Policy ............................................................................................................ 5
  - Assessment Tasks ............................................................................................................ 5
    - Participation ................................................................................................................... 5
  - Learning resources .......................................................................................................... 7
  - Reading list ...................................................................................................................... 7
  - Feedback to you .............................................................................................................. 7
  - Extensions and penalties ................................................................................................. 7
  - Returning assignments ..................................................................................................... 7
  - Referencing requirements ............................................................................................... 7
  - Assignment submission ................................................................................................. 7
  - Online submission ......................................................................................................... 8
  - Required Resources ....................................................................................................... 8

**Other Information** ............................................................................................................. 9
  - Policies .............................................................................................................................. 9
    - Graduate Attributes Policy ........................................................................................ 9
  - Student services .............................................................................................................. 9
  - Monash University Library ............................................................................................. 9
  - Disability Liaison Unit .................................................................................................. 10
  - Your feedback to Us ...................................................................................................... 10
  - Previous Student Evaluations of this Unit ................................................................... 10
FIT5043 Distributed database - Semester 2, 2013

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.

Mode of Delivery

Caulfield (Day)

Contact Hours

2 hrs lectures/wk, 2 hrs laboratories/wk

Workload requirements

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
Personal study and completing assignments: 8 hours per week (2 hours for every 1 contact hour)

Unit Relationships

Prohibitions

CSE5200

Prerequisites

Students undertaking this unit are expected to have a sound knowledge of Java programming, SQL and PL/SQL.

Chief Examiner

Associate Professor David Taniar

Campus Lecturer

Caulfield

Pari Delir Haghighi
Academic Overview

Learning Outcomes

At the completion of this unit students will:

• be familiar with the currently available models, technologies for and approaches to building distributed database systems;
• 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;
• 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;
• be able to apply learned skills to solving practical database related tasks.
## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Students need to allocate themselves to tutorials and visit unit website</td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>Introduction to distributed database systems and computing</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Distributed database design I</td>
<td>Lab Exercise 2 Due</td>
</tr>
<tr>
<td>3</td>
<td>Distributed database design II</td>
<td>Lab Exercise 2 Due</td>
</tr>
<tr>
<td>4</td>
<td>Distributed Query Processing I and Semantic Data Control</td>
<td>Lab Exercise 3 Due</td>
</tr>
<tr>
<td>5</td>
<td>Distributed query processing II</td>
<td>Lab Exercise 4 Due</td>
</tr>
<tr>
<td>6</td>
<td>Distributed query optimisation</td>
<td>Lab Exercise 5 Due</td>
</tr>
<tr>
<td>7</td>
<td>Transaction Management in Distributed DB</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Distributed Concurrency Control I</td>
<td>Practical Assignment Due</td>
</tr>
<tr>
<td>9</td>
<td>Distributed Concurrency Control II</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Reliability and Fault Tolerance in Distributed Databases</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Parallel and Grid Databases</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Advanced Topics and Future Directions</td>
<td>Research Paper Presentation</td>
</tr>
<tr>
<td></td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC. Research Paper Assignment Due Week 14</td>
</tr>
</tbody>
</table>

*Unit Schedule details will be maintained and communicated to you via your learning system.

## Assessment Summary

In-semester assessment: 100%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab Exercises</td>
<td>10%</td>
<td>Weekly (Weeks 2 to 6 Labs)</td>
</tr>
<tr>
<td>Practical Assignment</td>
<td>40%</td>
<td>Week 8</td>
</tr>
<tr>
<td>Research Paper Assignment</td>
<td>40%</td>
<td>Week 14</td>
</tr>
<tr>
<td>Research Paper Presentation</td>
<td>10%</td>
<td>Week 12</td>
</tr>
</tbody>
</table>
Teaching Approach

Lecture and tutorials or problem classes

The teaching and learning approach provides facilitated learning, practical exploration and peer learning.
Assessment Requirements

Assessment Policy

Faculty Policy - Unit Assessment Hurdles

Academic Integrity - Please see the Demystifying Citing and Referencing tutorial at http://lib.monash.edu/tutorials/citing/

Assessment Tasks

Participation

• Assessment task 1

  Title: Lab Exercises
  
  Description: Weekly exercises in the lab will focus on the practical aspect of learning distributed database concepts. The total number of exercises to be completed is 5. The exercises will be performed using Oracle and JDeveloper.
  
  Weighting: 10% (2% each)
  
  Criteria for assessment:
  Completion of tutorial exercises in the labs and within the tutorial time.

  How well the solutions/programs address the weekly exercises and questions.

  Due date: Weekly (Weeks 2 to 6 Labs)

• Assessment task 2

  Title: Practical Assignment
  
  Description: Students will design a client-server and distributed database application using Oracle and JDeveloper.
  
  Weighting: 40%
  
  Criteria for assessment:
  How well the PL/SQL and Java are written.

  How well the triggers, procedures and functions are designed.

  Due date: Week 8
• Assessment task 3

Title:
Research Paper Assignment

Description:
This task requires students to examine and analyse several papers from high quality publications about a certain research problem related to Distributed Databases.

Weighting:
40%

Criteria for assessment:
Group Assignment (groups of 2-4)

Students will be assessed based on:

♦ How well the literature is studied.
♦ How well the research issue has been investigated, understood and analysed.
♦ The level of writing and referencing skills demonstrated.
♦ How well the in-text citation and referencing are used.
♦ The level of critical thinking and analysis and originality.

The assignment has a group mark (50%) and an individual component (50%). More details will be provided during the semester.

Due date:
Week 14

• Assessment task 4

Title:
Research Paper Presentation

Description:
Students will deliver a PowerPoint presentation of the research paper they have written for the Research Paper Assignment.

Weighting:
10%

Criteria for assessment:
Group Assignment (groups of 2-4)

Students will be assessed based on:

♦ The level of oral presentation skills.
♦ The structure and effectiveness of the content.
♦ How well contents are summarised.
♦ How well visual aids are used to make the presentation interesting.

The assignment has a group mark (50%) and an individual component (50%). More details will be provided during the semester.

Due date:
Week 12
Learning resources

Reading list


Monash Library Unit Reading List http://readinglists.lib.monash.edu/index.html

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

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.monash.edu.au/exams/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.

Referencing requirements

APA style is recommended.

Refer to:


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). Please note that it is your responsibility to retain copies of your assessments.
Online submission

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

Required Resources

Please check with your lecturer before purchasing any Required Resources. Limited copies of prescribed texts are available for you to borrow in the library, and prescribed software is available in student labs.

Oracle 11g R2 and JDeveloper

Software will be available in computer labs and on Moodle.

To use Oracle at home you need to install the Monash VPN from:

- https://secure.monash.edu/its/vpn/
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: www.policy.monash.edu.au/policy-bank/academic/education/index.html

Key educational policies include:

- Academic integrity; http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-policy.html
- Special Consideration; http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.html
- 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/dates/
- Orientation and Transition; http://intranet.monash.edu.au/infotech/resources/students/orientation/

Graduate Attributes Policy

http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.html

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 http://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/.

Monash University Library

The Monash University Library provides a range of services, resources and programs that enable you to save time and be more effective in your learning and research. Go to 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/.
Disability Liaison Unit

Students who have a disability or medical condition are welcome to contact the Disability Liaison Unit to discuss academic support services. Disability Liaison Officers (DLOs) visit all Victorian campuses on a regular basis.

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

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 the Student Evaluation of Teaching and Units (SETU) survey. 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, see:

www.monash.edu.au/about/monash-directions and on student evaluations, see:
www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html

Previous Student Evaluations of this Unit

Previous feedback has been mainly encouraging and positive and to improve the unit further we will be introducing and discussing a few advanced topics.

If you wish to view how previous students rated this unit, please go to