# FIT5095 Data warehousing - Semester 1, 2010

## Chief Examiner:
- Caulfield

## Lecturer(s) / Leader(s):
- Caulfield

## Introduction

- Unit synopsis
- Learning outcomes
- Contact hours
- Workload

## Unit relationships
- Prerequisites
- Prohibitions

## Teaching and learning method
- Teaching approach
- Timetable information
- Tutorial allocation
- Unit Schedule
- Improvements to this unit

## Unit Resources
- Prescribed text(s) and readings
- Recommended text(s) and readings
- Required software and/or hardware
- Equipment and consumables required or provided
- Study resources

## Assessment
- Overview
- Faculty assessment policy
- Assignment tasks
- Examination
- Due dates and extensions
- Late assignment
- Return dates

## Appendix
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Introduction

Welcome to FIT5095 Data Warehousing for semester 1, 2009. This is a six point postgraduate unit designed to provide you with an understanding of the potential benefits of data warehousing, the tools and techniques used to design and implement data warehouses, and the theories and principles of the use of a data warehouse to support managerial decision making.

Unit synopsis

Managerial decision-makers often require information held in various organisational information systems to make improved strategic decisions. A data warehouse is designed to provide high quality data from a number of sources both inside and outside the organisation and is an example of a large-scale decision system. This unit presents students with coverage of several important aspects of data warehousing. These include the purpose of a data warehouse, data warehouse design, data warehouse architecture, data sourcing, implementing the data warehouse, organisational issues involved with designing and implementing a data warehouse, data warehouse governance and case studies.

Learning outcomes

At the completion of this unit students will:

- have knowledge of the theories and principles of data warehousing;
- understand the potential benefits of data warehousing;
- understand the techniques and tools used to design a data warehouse;
- understand the theories and principles of data warehousing with regard to the practice of decision support;
- be able to design multi-dimensional data structures;
- appreciate how to interact effectively with managers, consultants and vendors in the development of a data warehouse.

Contact hours

2 hrs lectures/wk, 2 hr laboratory/wk

Workload

For on campus students, workload commitments are:

- two-hour lecture and
- two-hour laboratory
- a minimum of 3-4 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.

Unit relationships

Prerequisites

FIT9003
Prohibitions

IMS5026
Teaching and learning method

Teaching approach

The unit utilises a number of teaching and learning approaches including lecture and laboratory sessions. An essential component of your learning in the unit, however, is your own personal study and reading. This will include use of online resources provided through Moodle including a discussion forum. Students who actively participated in discussion forums in previous offerings have mentioned that their learning experience was vastly improved by their engagement and interaction online with both staff and other students.

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.its.monash.edu.au/

Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>References/Readings</th>
<th>Key dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/03/10</td>
<td>Introduction to the unit and data warehouse concepts</td>
<td>See the unit website for weekly readings</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>08/03/10</td>
<td>Data Warehousing as a process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15/03/10</td>
<td>Multi-Dimensional Modelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>22/03/10</td>
<td>Multi-Dimensional Modelling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>29/03/10</td>
<td>Physical Design</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Mid semester break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>12/04/10</td>
<td>Data Warehouse development lifecycle models</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>19/04/10</td>
<td>Organisational issues, data warehousing techniques and case studies</td>
<td>Assignment One due</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>26/04/10</td>
<td>Guest lecture on data warehouse governance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>03/05/10</td>
<td>Data quality and metadata management</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>10/05/10</td>
<td>Data warehouse technology decisions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>17/05/10</td>
<td>Data mining and knowledge discovery</td>
<td>Assignment Two due</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>24/05/10</td>
<td>Industry guest lecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>31/05/10</td>
<td>Revision and conclusion</td>
<td></td>
<td></td>
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</tbody>
</table>
Improvements to this unit

Laboratory sessions have been extended from one hour to two each week, and the exercises and topics covered have been revised.
Unit Resources

Prescribed text(s) and readings

There is no required text for the unit, due to the breadth of topics covered. Instead, an extensive reading list consisting, in most part, of items available electronically through the library (authcate username and password required) will be used. The readings for each week will be listed on the unit website.

Recommended text(s) and readings

If you wish to purchase a textbook to assist your study, either of the following texts will be useful, especially in the first half of the semester. Current editions can be purchased new, but there are many second hand copies available at various bookshops in Melbourne.


or


Required software and/or hardware

While no software is necessarily required, we will be making use of Microsoft SQL Server 2005 in the laboratories. You will also find that a copy of Microsoft Office and Microsoft Visio will be of use during assignments. All of this software is installed by default in the student laboratories, but copies can be borrowed and installed on your personal computer through the Faculty of IT Helpdesk (Level 6, Building H, Caulfield Campus).

Equipment and consumables required or provided

Students will need access to:

- a personal computer with Windows XP or later
- the internet via dial-up connection or preferably by broadband
- a printer for assignments

On-campus students 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:

- Weekly detailed lecture slides outlining the learning objectives, discussion of the content, required readings and exercises (note these are not a replacement for attending and taking your own notes during lectures);
- Weekly laboratory tasks and exercises with sample solutions provided where appropriate
- Assignment specifications
- A sample examination and consultation on your solutions
- Access to past examination papers;
- Discussion groups;
- This Unit Guide outlining the administrative information for the unit;
- The unit web site on Moodle, where resources outlined above will be made available.
- Lecture recordings via MULO as well as a podcast for supplementary topics.
Assessment

Overview

Examination (2 hours): 50%; In-semester assessment: 50%

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 50% then a mark of no greater than 49-N will be recorded for the unit.

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 One: Data Warehouse Design
  
  Description: Using the multi-dimensional modelling technique, a logical design and requirements specification for a data warehouse will be produced by students for a given case study.
  
  Weighting: 20%
  
  Due date: Week 7

- Assignment task 2
  
  Title: Assignment Two: Research Essay
  
  Description: A 3000 word essay on a data warehousing issue or topic.
  
  Weighting: 30%
  
  Due date: Week 11
**Examination**

- **Weighting:** 50%
  - **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**

Assignments received after the due date will be subject to a penalty of 5 marks per day, not including weekends (Friday night to Monday morning counts as one day). Assignments received later than one week (seven days) after the due date will not 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