



MONASH University

**FIT5158**  
**Customer relationship management and data mining**

**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.

*Last updated : 21 Jul 2009*

# Table of Contents

<b><u>FIT5158 Customer relationship management and data mining - Semester 2, 2009</u></b> .....	<b>1</b>
<u>Chief Examiner:</u> .....	1
<u>Lecturer(s) / Leader(s):</u> .....	1
<u>Clayton</u> .....	1
<u>Additional communication information:</u> .....	1
<u>Introduction</u> .....	2
<u>Unit synopsis</u> .....	2
<u>Learning outcomes</u> .....	2
<u>Contact hours</u> .....	2
<u>Workload</u> .....	2
<u>Unit relationships</u> .....	3
<u>Prerequisites</u> .....	3
<u>Relationships</u> .....	3
<u>Teaching and learning method</u> .....	4
<u>Timetable information</u> .....	4
<u>Tutorial allocation</u> .....	4
<u>Unit Schedule</u> .....	4
<u>Unit Resources</u> .....	5
<u>Prescribed text(s) and readings</u> .....	5
<u>Recommended text(s) and readings</u> .....	5
<u>Required software and/or hardware</u> .....	5
<u>Equipment and consumables required or provided</u> .....	5
<u>Study resources</u> .....	5
<u>Assessment</u> .....	6
<u>Overview</u> .....	6
<u>Faculty assessment policy</u> .....	6
<u>Assignment tasks</u> .....	6
<u>Examination</u> .....	7
<u>Due dates and extensions</u> .....	7
<u>Late assignment</u> .....	7
<u>Return dates</u> .....	7
<u>Appendix</u> .....	8

# **FIT5158 Customer relationship management and data mining - Semester 2, 2009**

## **Chief Examiner:**

### **Professor Geoff Webb**

Professor

Phone: +61 3 990 53296

Fax: +61 3 990 55157

Contact hours: Tuesday 2-3pm - email for other times/appointment

## **Lecturer(s) / Leader(s):**

### **Clayton**

### **Professor Geoff Webb**

Professor

Phone: +61 3 990 53296

Fax: +61 3 990 55157

Contact hours: Tuesday 2-3pm

## **Additional communication information:**

Professor Geoff Webb

Clayton School of Information Technology

Faculty of Information Technology

Monash University, Clayton Vic 3800

Phone + 61 3 9905 3296 Fax + 61 3 9905 5109

Office: Room 220, Building 63

## Introduction

Welcome to FIT5158 Customer Relationship Management and Data Mining. This 6 point unit belongs to the Business Systems track in the Master of Business Information Systems degree. The unit fits in well with other business intelligence units such as Data Warehousing and Business Intelligence. FIT5158 focuses on business data analysis in a customer relationship management context highlighting the importance of building a customer centric organization.

## Unit synopsis

This unit provides an understanding of the business value of customer relationship management and how data mining technology can be used to improve organizational interaction with customers. Building a business around the customer relationship is the aspiration of many modern organizations. Customer relationship management and data mining has been combined together to provide the required concepts, techniques, technology and tools to achieve this goal. The unit discuss how IT and IT based techniques can be used for customer segmentation, clustering and classification, market basket analysis and association rule mining in addition to traditional CRM.

## Learning outcomes

At the conclusion of FIT5158 students will be able to:

1. Use software tools and techniques for identifying business opportunities, plan direct marketing campaigns and product introductions;
2. Analyse and understand customer churn with data mining tools;
3. Create stable and accurate predictive models and interpret results
4. Provide advise to management on CRM;
5. Advise management on data mining techniques and tools.

## Contact hours

3 x contact hrs/week

## Workload

- \* two-hour lecture and
- \* one-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.

FIT5158 Customer relationship management and data mining - Semester 2, 2009

\* 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**

FIT9004 or CSE9000 or BUS9520

### **Relationships**

FIT5158 is a core unit in the Business Systems professional track of the MBIS degree, and an elective unit for the MBIS and other postgraduate courses within the Faculty of IT.

Before attempting this unit you must have satisfactorily completed

FIT9004 or equivalent in your degree.

## Teaching and learning method

The unit will be delivered via lectures and laboratories.

Lecture: During the lecture, your lecturer will introduce key theoretical concepts and demonstrate various approaches to database tasks. The time in lectures is quite brief, please ensure you gain the best advantage from this time by:

- Prior to the lecture
  - o downloading and reading the lecture notes,
- During the lecture
  - o annotate a printed set of lecture notes as the lecture proceeds, and
  - o participate, question, seek clarification
- After the lecture
  - o read over you notes and make sure you understand the concepts
  - o seek help if you are unsure

## 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	CRM and Customer Intelligence	Lecture 1
2	Storing Data for Customer Intelligence	Lecture 2
3	Data Warehousing with SQL Server 2005	Lecture 3
4	Dimensional Modeling	Lecture 4
5	Data Warehouse and Analytical CRM	Lecture 5
6	Online Analytical Processing	Lecture 6
7	Introduction to Business Data Mining	Lecture 7
8	Customer Relationship Management	Lecture 8
9	Decision Trees	Lecture 9
10	Neural Networks	Lecture 10
Mid semester break		
11	Collaborative Filtering and User Profiling	Lecture 11
12	Customer Life Cycle and Data Mining	Lecture 12
13	Revision	Lecture 13

## Unit Resources

### Prescribed text(s) and readings

Data Mining Techniques for Marketing, Sales and CRM, M. Berry and G. Linoff, Wiley, 2004

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

- Practical Business Intelligence with SQL Server 2005 by John C. Hancock and Roger Toren, Addison Wesley, 2006
- The Microsoft Data Warehousing Toolkit by Joy Mundy and Warren Thornthwaite, John Wiley & Sons, 2006

### Required software and/or hardware

WEKA Data Mining software

SQL Server 2005

### 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 up to 5 hours per week for use of a computer, including time for newsgroups/discussion groups.

### Study resources

Study resources we will provide for your study are:

- \* Weekly detailed lecture notes outlining the learning objectives, discussion of the content, required readings and exercises;
- \* Weekly tutorial or laboratory tasks and exercises with sample solutions provided one to two weeks later;
- \* Assignment specifications;
- \* A sample examination and suggested solution;
- \* This Unit Guide outlining the administrative information for the unit;
- \* The unit web site on MUSO, where resources outlined above will be made available.

## Assessment

### Overview

Examination (3 hours): 60%

+ Assignments: 40%

### 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.

To pass this unit, a student must obtain :

- \* 40% or more in the unit's examination and
  - \* 40% or more in the unit's 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 assessment then a mark of no greater than 44-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 1 - SQL Server and Data Warehousing

**Description:**

**Weighting:**

20%

**Due date:**

Friday Week 8



## • Assignment task 2

**Title:**

Assignment 2 - Data Mining

**Description:**

**Weighting:**

20%

**Due date:**

Friday week 12

## Examination

• **Weighting:** 60%

**Length:** 3 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

**Requests for extensions must be made to the unit lecturer at your campus at least two days before the due date. You will be asked to forward original medical certificates in cases of illness, and may be asked to provide other forms of documentation where necessary. A copy of the email or other written communication of an extension must be attached to the assignment 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