



**MONASH** University  
Information Technology

**FIT5195**  
**Business intelligence and data warehousing**

**Unit Guide**

**Semester 2, 2015**

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# **FIT5195 Business intelligence and data warehousing - Semester 2, 2015**

This unit is intended to provide students with a framework for understanding business intelligence systems as well as the provision of high quality, integrated data for decision support through data warehousing. The unit has a particular focus on the evolutionary process of developing a business intelligence system and multi-dimensional modelling for structuring business intelligence data. The unit also presents students with coverage of several important aspects of business intelligence and data warehousing, including architecture, design, implementation, data sourcing, organisational issues and governance. The unit will present this material using relevant research, case studies and practical exercises. Students will develop a prototype business intelligence system using a business intelligence software package.

## **Mode of Delivery**

- Caulfield (Day)
- Caulfield (Online)

## **Workload Requirements**

Minimum total expected workload equals 12 hours per week comprising:

(a.) Contact hours for on-campus students:

- 2 hours of lectures
- One 2-hour laboratory

(b.) Study schedule for off-campus students:

- Off-campus students generally do not attend lecture and tutorial sessions, however should plan to spend equivalent time working through the relevant resources and participating in discussion groups each week.

(c.) Additional requirements (all students):

- A minimum of 8 hours independent study per week for completing lab and project work, private study and revision.

See also Unit timetable information

## **Unit Relationships**

### **Prohibitions**

FIT5095, FIT5093

## **Prerequisites**

FIT9132 or FIT5132 or FIT9003 or equivalent

## **Chief Examiner**

Dr Rob Meredith

## **Campus Lecturer**

## **Caulfield**

Yuri Song

Felix Lizama

## **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/](http://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](http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html)

## **Previous Student Evaluations of this Unit**

Based on a review of the unit for Semester 1, 2015, interviews will be introduced for feedback for some parts of the portfolio assignment. This will allow richer and more useful feedback on the practical aspects of the unit.

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

# Academic Overview

## Learning Outcomes

On successful completion of this unit, students should be able to:

- describe the scope and application of business intelligence and decision support;
- design systems for sourcing and structuring data to provide an integrated, non-volatile collection of data for decision support using data warehouses;
- design multidimensional data models and implement them using star schemas and relational databases;
- communicate and foster realistic expectations of the role of OLAP technology and business intelligence systems in management and decision support;
- explain the need for evolutionary development approaches to developing business intelligence and data warehouse systems;
- develop a simple business intelligence system using an OLAP tool;
- apply theories and principles of data visualisation to encourage high quality analysis of business information to inform decision making;
- design governance mechanisms for the development and management of business intelligence and data warehouse systems in an organisation.

## Unit Schedule

Week	Activities	Assessment
0		No formal assessment or activities are undertaken in week 0
1	Understanding Business Intelligence and Data Warehousing	Assignment 1: Student Portfolio submissions made throughout the semester
2	Business Intelligence Interfaces 1	
3	Business Intelligence Interfaces 2	
4	Dimensional Modelling for Business Intelligence Applications	
5	Dimensional Modelling for the Data Warehouse	
6	Designing for Customer Relationship Management and Data Warehousing Architectures	
7	Data Quality and the Extract, Transform and Load (ETL) Process	Portfolio Feedback Session 1
8	Development Lifecycles	Assignment 2a: Business Intelligence Application Design due
9	Business Intelligence & Data Warehousing Case Studies	
10	Governance for Business Intelligence & Data Warehousing Projects	Portfolio Feedback Session 2
11	Contemporary Directions in Business Intelligence	Assignment 2b: Data Warehouse Design Specification due
12	Current research topics in Business Intelligence	Final Student Portfolio due before SWOT VAC
	SWOT VAC	No formal assessment is undertaken in SWOT VAC
	Examination period	LINK to Assessment Policy: <a href="http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html">http://policy.monash.edu.au/policy-bank/academic/education/assessment/assessment-in-coursework-policy.html</a>

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

## Teaching Approach

- **Lecture and tutorials or problem classes**

This teaching and learning approach helps students to initially encounter information at lectures, discuss and explore the information during tutorials, and practice in a hands-on lab environment.

- **Simulation or virtual practice**

This approach allows gives students the opportunity to put into practice skills learnt during lectures and tutorials in a simulation of real-world scenarios.

## Assessment Summary

Examination (3 hours): 50%; In-semester assessment: 50%

<b>Assessment Task</b>	<b>Value</b>	<b>Due Date</b>
Assignment 2a: Design Assignment Part 1 - Business Intelligence Application Design	20%	Week 8
Assignment 2b: Design Assignment Part 2 - Data Warehouse Design Specification	15%	Week 11
Assignment 1: Student Portfolio	15%	Submissions made in Weeks 7, 10 and 12 throughout the semester. Final Portfolio due before SWOT VAC
Examination 1	50%	To be advised

# Assessment Requirements

## Assessment Policy

Faculty Policy - Unit Assessment Hurdles

(<http://intranet.monash.edu.au/infotech/resources/staff/edgov/policies/assessment-examinations/assessment-hurdles>)

Academic Integrity - Please see resources and tutorials at

<http://www.monash.edu/library/skills/resources/tutorials/academic-integrity/>

## Assessment Tasks

### Participation

#### • Assessment task 1

**Title:**

Assignment 2a: Design Assignment Part 1 - Business Intelligence Application Design

**Description:**

Given a case study of a business decision problem, students will perform a dimensional analysis, design a business intelligence application and implement a prototype.

The following unit learning outcomes will be assessed in this assignment:

- ◆ describe the scope and application of business intelligence and decision support;
- ◆ design multidimensional data models and implement them using star schemas and relational databases;
- ◆ communicate and foster realistic expectations of the role of OLAP technology and business intelligence systems in management and decision support;
- ◆ apply theories and principles of data visualisation to encourage high quality analysis of business information to inform decision making

**Weighting:**

20%

**Criteria for assessment:**

- ◆ Quality of support for business requirements
- ◆ Quality of the interface design
- ◆ Correctness of dimensional model
- ◆ Quality and professionalism of presentation

**Due date:**

Week 8

#### • Assessment task 2

**Title:**

Assignment 2b: Design Assignment Part 2 - Data Warehouse Design Specification

**Description:**

Building on the work from Part 1, students will extend the design report to include specification of a supporting data warehouse using star-schema dimensional models. The design will also include ETL mapping to source information systems and a data dictionary.

The following unit learning outcomes will be assessed in this assignment:

## Assessment Requirements

- ◆ describe the scope and application of business intelligence and decision support;
- ◆ design systems for sourcing and structuring data to provide an integrated, non-volatile collection of data for decision support using data warehouses;
- ◆ design multidimensional data models and implement them using star schemas and relational databases;
- ◆ communicate and foster realistic expectations of the role of OLAP technology and business intelligence systems in management and decision support

**Weighting:**

15%

**Criteria for assessment:**

- ◆ Correctness of schema construction
- ◆ Quality of design and justification, including support for designs from Part 1.
- ◆ Identification of business requirements
- ◆ Quality and professionalism of presentation

**Due date:**

Week 11

### • Assessment task 3

**Title:**

Assignment 1: Student Portfolio

**Description:**

A selection of exercises and study tasks will be made available to students, including reflections on readings, modelling and other skills-based tasks. Students will select six of these over the course of the semester for submission and assessment.

The following unit learning outcomes will be assessed in this assignment:

- ◆ describe the scope and application of business intelligence and decision support;
- ◆ design multidimensional data models and implement them using star schemas and relational databases;
- ◆ apply theories and principles of data visualisation to encourage high quality analysis of business information to inform decision making;

**Weighting:**

15%

**Criteria for assessment:**

Each portfolio task will have customised assessment criteria. Typical criteria for a modelling task would be:

- ◆ Quality of the model
- ◆ Correctness of the model

Typical criteria for a reflective piece would be:

- ◆ Depth of analysis
- ◆ Quality of expression

**Due date:**

Submissions made in Weeks 7, 10 and 12 throughout the semester. Final Portfolio due before SWOT VAC

## Examinations

### • Examination 1

**Weighting:**

50%

**Length:**

3 hours

**Type (open/closed book):**

Closed book

**Electronic devices allowed in the exam:**

None

## Learning resources

Monash Library Unit Reading List (if applicable to the unit)

<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
- Interviews
- Solutions to tutes, labs and assignments

## 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

Students should follow the instructions in the Referencing section of the Faculty Style Guide.

For information on how to cite and reference correctly, see the Library Guides for Citing and Referencing at <http://guides.lib.monash.edu/content.php?pid=88267&sid=656564>

## Assignment submission

It is a University requirement

(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-pla>

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 electronic submission). 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.

Students should have access to a Windows or Mac OS computer for work on assignments. Software will be available in student computer labs as well as for download and installation on personal computers. Students working off-campus may be required to install the Monash VPN software to connect to our servers for some tutorial exercises.

## 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](http://www.policy.monash.edu.au/policy-bank/academic/education/index.html)

### Faculty resources and policies

Important student resources including Faculty policies are located at

<http://intranet.monash.edu.au/infotech/resources/students/>

### Graduate Attributes Policy

<http://www.policy.monash.edu/policy-bank/academic/education/management/monash-graduate-attributes-policy.h>

### Student Charter

[www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.html](http://www.opq.monash.edu.au/ep/student-charter/monash-university-student-charter.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 Malaysia 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](http://www.lib.monash.edu.au) or the library tab in [my.monash](#) portal for more information. At Malaysia, 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 Malaysia
- Email: [dlu@monash.edu](mailto: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, Malaysia Campus