Table of Contents

FIT5097 Business intelligence modelling - Semester 2, 2015...............................................................1

Mode of Delivery.................................................................................................................................1
Workload Requirements.......................................................................................................................1
Unit Relationships.............................................................................................................................1

Prohibitions........................................................................................................................................1
Prerequisites.........................................................................................................................................1

Chief Examiner.....................................................................................................................................1
Campus Lecturer.................................................................................................................................1

Caulfield...............................................................................................................................................2
Tutors.....................................................................................................................................................2

Caulfield...............................................................................................................................................2
Your feedback to Us.............................................................................................................................2
Previous Student Evaluations of this Unit............................................................................................2

Academic Overview...........................................................................................................................3

Learning Outcomes.............................................................................................................................3

Unit Schedule......................................................................................................................................4

Teaching Approach..............................................................................................................................4
Assessment Summary..........................................................................................................................4

Assessment Requirements..................................................................................................................6

Assessment Policy...............................................................................................................................6
Assessment Tasks..................................................................................................................................6
Participation..........................................................................................................................................6

Examinations.......................................................................................................................................7

Examination 1......................................................................................................................................7
Learning resources...............................................................................................................................7
Reading list..........................................................................................................................................7
Feedback to you.................................................................................................................................7
Extensions and penalties.....................................................................................................................7
Returning assignments.........................................................................................................................8
Assignment submission......................................................................................................................8
Online submission...............................................................................................................................8
Required Resources.............................................................................................................................8

Prescribed text(s)...............................................................................................................................8

Other Information..............................................................................................................................9

Policies................................................................................................................................................9
Faculty resources and policies.............................................................................................................9

Graduate Attributes Policy................................................................................................................9

Student Charter.................................................................................................................................9
Student services.................................................................................................................................9
Monash University Library.................................................................................................................9
Disability Liaison Unit.........................................................................................................................9
FIT5097 Business intelligence modelling - Semester 2, 2015

This unit introduces students to the principles, techniques and applications of computer-based decision support models for business and industry. Topics include: decision trees; linear programming and optimisation; other mathematical programming methods; waiting lines and queues; time series analysis and forecasting; inventory modelling and discrete-event simulation. Models will be built and solved using spreadsheets or other computer applications as appropriate.

Mode of Delivery

Caulfield (Evening)

Workload Requirements

Minimum total expected workload equals 12 hours per week comprising:

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

- Two hours of lectures
- One 2-hour laboratory

(b.) 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

BUS5570

Prerequisites

At least one quantitative unit (such as Mathematics or Statistics) in an undergraduate degree.

Chief Examiner

Dr John Betts

Campus Lecturer
Caulfield

David Dowe

Consultation hours: T.B.A.

Tutors

Caulfield

T.B.A.

Consultation hours: T.B.A.

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 student feedback for the course was highly positive and thus no changes have needed to be made this year.

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

Learning Outcomes

On completion of this unit students should be able to:

- explain a variety of techniques for modelling business decision problems;
- choose the appropriate decision model for a particular problem;
- set up simple models and solve with hand calculations;
- set up mathematical models for solution in a spreadsheet or other application software;
- validate models and conduct a sensitivity analysis;
- analyse a real problem and report the results;
- explain the difficulty of applying models to real situations - which often requires that approximations, simplifications and generalisations be made;
- explain the approximate nature of some types of business modelling and why this usually means that a sensitivity analysis needs to be conducted.
## Unit Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Activities</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Please register for tutorials in Allocate Plus. There will be NO tutorials in Week 1. However, students are advised to attempt a &quot;Do-it-Yourself&quot; Tutorial in Week 1 to familiarise with EXCEL basics.</td>
<td>No formal assessment or activities are undertaken in week 0</td>
</tr>
<tr>
<td>1</td>
<td>Introduction to Management Science and Operations Research; Introduction to Optimisation and Linear Programming</td>
<td>No tutorial in Week 1</td>
</tr>
<tr>
<td>2</td>
<td>Modelling and Solving LP Problems Graphically</td>
<td>Assessment task 2: Tutorial Work is assessed in Weeks 2 to 12 during and after each tutorial session</td>
</tr>
<tr>
<td>3</td>
<td>Spreadsheet Modelling</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sensitivity analysis and the interpretation of solutions</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Transportation and Assignment Problems; and Network Modelling</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Integer Linear Programming &amp; Goal Programming</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Inventory Modelling - Deterministic Demand</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Inventory Modelling - Stochastic Demand</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Decision Making under Risk and Uncertainty; Decision Trees</td>
<td>Assessment task 1: Spreadsheet Modelling due in Week 9</td>
</tr>
<tr>
<td>10</td>
<td>(Time Series Analysis and) Forecasting</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Queuing</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Simulation</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>SWOT VAC</td>
<td>No formal assessment is undertaken in SWOT VAC</td>
</tr>
</tbody>
</table>

*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 provides facilitated learning, practical exploration and peer learning

## Assessment Summary

Examination (2 hours): 60%; In-semester assessment: 40%

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spreadsheet modelling</td>
<td>30%</td>
<td>Week 9</td>
</tr>
<tr>
<td></td>
<td>10%</td>
<td>Weeks 2 to 12 after each tutorial session</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Tutorial Participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Examination 1</td>
<td>60%</td>
<td>To be advised</td>
</tr>
</tbody>
</table>
Assessment Requirements

Assessment Policy

Faculty Policy - Unit 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: Spreadsheet modelling

  Description: Learning Outcomes: 1, 2, 4, 5, 6. Solving business decision problems by linear
programming and integer programming using MicroSoft Excel Solver.

  Weighting: 30%

  Criteria for assessment: The criteria used to assess the assignment are:

    1. Correctness and understanding - Correct answers are to be provided with
       explanations and justifications. We will look for answers that reflect understanding
       of the underlying modelling techniques.
    2. Completeness - that you have answered all parts of each question. Presentation -
       that you have presented your answers in a suitably formatted report style.

  Due date: Week 9

• Assessment task 2

  Title: Tutorial Participation

  Description: Learning Outcomes: 1, 2, 3, 4, 5, 7, 8. Tutorial exercises and participation will be
assessed.

  Weighting: 10%

  Criteria for assessment: The criteria used to assess are:

    1. Degree of correctness and level of understanding of the underlying modelling
       techniques and any other relevant material.
    2. Degree of completeness of your answers to tutorial questions and any other
       relevant material.

  Due date: Weeks 2 to 12 after each tutorial session
Examinations

- Examination 1

  Weighting: 60%
  Length: 2 hours
  Type (open/closed book): Closed book
  Electronic devices allowed in the exam: Non-programmable calculators

Learning resources

Reading list


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 without comments
- 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.

Assignment submission

It is a University requirement (http://www.policy.monash.edu/policy-bank/academic/education/conduct/student-academic-integrity-managing-plagiarism-collusion-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 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.

Excel Solver is available for use in all University labs.

Prescribed text(s)

Limited copies of prescribed texts are available for you to borrow in the library.

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

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.html

Student Charter

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 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
- 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