

FIT3051
Decision support systems for finance

Unit Guide

Semester 1, 2011

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.

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FIT3051 Decision support systems for finance - Semester 1, 2011

This unit is designed to introduce students to the practical application of decision support systems for finance using modern computer tools. It covers issues associated with the implementation, theory and risk of decision support systems for finance. The aims of this course are to provide a study of the concepts behind decision making; the tools and techniques to support various stages of the decision making process and to explore key factors of successful decision support systems for finance problems and their development methodology. On completion of the unit, students should be able to:

1. understand the needs of decision makers and apply techniques and tools to support various phases of the decision making process.
2. formulate requirements for simulation and modelling and apply techniques of sensitivity analysis.
3. analyse and design effective decision support systems for finance problems.

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Mode of Delivery

Clayton (Day)

Contact Hours

2 hrs lectures/wk, 1 hr laboratory/wk

Workload

- two hour lecture and
- one hour tutorial (or laboratory) (requiring advance preparation)
- a minimum of 3 hours of personal study per one hour of contact time in order to satisfy the reading and assignment expectations.
- 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

Prohibitions

BUS3030, AFF2051, AFW2051

Chief Examiner

Vincent Lee

Campus Lecturer

Clayton

Vincent Lee

Contact hours: Friday, 1:00-3:00pm

Tutors

Clayton

Kevin Liao

Contact hours: Tuesday, 10:00-11:00am; 1:00-2:00pm; 3:00-4:00pm; Friday 12:00-1:00pm

Learning Objectives

At the completion of this unit students will have:

- familiarity with, and ability to apply, relevant decision support systems to the solution of financial problems;
- the ability to formulate, frame and solve financial problems in the context of appropriate decision support systems;
- an understanding of relevant finance concepts and understand how to apply those concepts in a practical setting.

A theoretical and conceptual understanding of:

- basic concepts of decision support systems;
- basic concepts of operational (investing and financing) finance;
- basic concepts and principles of decision support criteria as applied to operational finance;
- how decision support are applied to operational finance in organisations;
- opportunities, risks and liabilities arising from the usage and application of decision support in the context of operational finance in organisations;
- processes of acquiring, developing and managing decision support in the context of operational finance in organisations;
- techniques and tools (Excel spreadsheet modelling and Expert Choice for describing and analysing problems in operational finance in organisations under multicriteria decision making framework.

Developed attitudes that enable them to:

- recognise the importance of decision support systems in the context of operational finance to organisational processes and functions;
- recognise the opportunities and limitations of the role that decision support systems play in managing operational finance in organisations.

Developed the skills to:

- assess the potential scope for using decision support systems as part of the solution to an organisational operational finance problem;
- understand how to apply decision support systems to help solve the operational finance problems of an organisation;

- appreciate the limitations of decision support systems and appreciate the role that human judgement plays in determining solutions for operational finance problems.

Demonstrated the teamwork skills necessary to:

- Recognise the team skills necessary for successful development and implementation of decision support systems to operational finance problems in organisations;
- Appreciate the importance of the inter-relationships between IT professionals and the stakeholders in decision support systems in organisations.

Graduate Attributes

Monash prepares its graduates to be:

1. responsible and effective global citizens who:

- a. engage in an internationalised world
- b. exhibit cross-cultural competence
- c. demonstrate ethical values

critical and creative scholars who:

- a. produce innovative solutions to problems
- b. apply research skills to a range of challenges
- c. communicate perceptively and effectively

Assessment Summary

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

Assessment Task	Value	Due Date
Finance knowledge fundamental and analysis for DSS	10%	Friday 8 April 2011, 4pm
Analytic Hierarchical / Analytic Network Process	25%	Monday 23 May 2011, 4pm
Tutorial / laboratory attendance and participation	5%	At the end of each tutorial / lab class
Examination 1	60 %	To be advised

Teaching Approach

- **Lecture and tutorials or problem classes**
This teaching and learning approach provides facilitated learning, practical exploration and peer learning.
- **Laboratory-based classes**
This teaching approach is practical learning.

Feedback

Our 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
- Test results and feedback
- Other: Discussion of solution to tutes, labs (where applicable) and assignments

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 SETU, Student Evaluation of Teacher and Unit. 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, and on student evaluations, see:

<http://www.monash.edu.au/about/monash-directions/directions.html>

<http://www.policy.monash.edu/policy-bank/academic/education/quality/student-evaluation-policy.html>

Previous Student Evaluations of this unit

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

<https://emuapps.monash.edu.au/unitevaluations/index.jsp>

Required Resources

Excel Spreadsheet and Crystal Ball software. Expert Choice, or Matlab toolbox, or JAVA (JADE).

These will either be freely downloadable or available for use in University computer labs. Further details to be advised.

Unit Schedule

Week	Date*	Activities	Assessment
0	21/02/11		No formal assessment or activities are undertaken in week 0
1	28/02/11	Fundamentals to decision making in finance	
2	07/03/11	Finance knowledge creation process for Decision Support Systems in Finance	
3	14/03/11	Analysis of financial statement using ratios	
4	21/03/11	Risk-return and investment portfolio issues - I	
5	28/03/11	Risk-return and investment portfolio issues - II	

6	04/04/11	Multicriteria decision support framework (AHP)	Assignment 1 due Friday 8 April 2011, 4pm
7	11/04/11	Application of AHP to finance decision support (work example)	
8	18/04/11	Using AHP for investment portfolio decision - I	
Mid semester break			
9	02/05/11	Using AHP / ANP for investment portfolio decision - II	
10	09/05/11	Operational finance (risk management) DSS fundamental	
11	16/05/11	Intelligent decision support systems for finance fundamental	
12	23/05/11	Intelligent decision support systems for finance (currency risk)	Assignment 2 due by Monday 23 May 2011, 4pm
	30/05/11	SWOT VAC	No formal assessment is undertaken SWOT VAC

*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.

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

Assessment Tasks

Participation

• Assessment task 1

Title:

Finance knowledge fundamental and analysis for DSS

Description:

A set of computational and discussion questions based on topics 1 to 5.

Weighting:

10%

Criteria for assessment:

This individual assignment will be based on computational questions using financial ratios and associated company specific factors.

Criteria to be used are:

1. Correctness and understanding - there may be more than one "right" answer in many cases. We will look for answers that reflect understanding of the underlying principles and theories.
2. Completeness - that you have answered all parts of each question.
3. Presentation - that you have presented your answers in a suitably formatted report style.
4. Use of evidence and argument - you are able to explain your position by using logical argument drawing on the theory presented in the unit.

Due date:

Friday 8 April 2011, 4pm

• **Assessment task 2**

Title:

Analytic Hierarchical / Analytic Network Process

Description:

A specific case on decision support systems for financial investment and risk management decision setup, using behavioural psychology and economic fundamentals criteria, and implemented on AHP / ANP with the help of Expert Choice software tool.

Students are to work in groups of 2 to 4. A final group report of a minimum of 3000 words (excluding graphs and tables) is to be submitted by the set deadline. Each student must contribute at least 1000 words in the report write-up.

Weighting:

25%

Criteria for assessment:

- 1) Investment portfolio formulation methods. (30 / 100)
- 2) Solution to investment portfolio to obtain optimum asset class allocation. (30 / 100)
- 3) Discussion with interpretation of results and their implications. (30 / 100)
- 4) Conclusion and recommendation of issues for further investigations. (10 / 100)

The report will be graded according to the following criteria:

1. All programs codes used to implement AHP must compile and run correctly to meet the problem specification.
2. Correctness in the interpretation of results must be reported concisely.
3. Recommendations made for investment decision taking must be theoretically justified and intuitively correct.

Due date:

Monday 23 May 2011, 4pm

• **Assessment task 3**

Title:

Tutorial / laboratory attendance and participation

Description:

In order to meet unit group assessment objectives students are to attend all tutorial / practical classes where they will engage in active group participation. The tutor in charge will take attendance and monitor participation of activities.

Weighting:

5%

Criteria for assessment:

Attendance and participation of activities.

Due date:

At the end of each tutorial / lab class

Examinations

• Examination 1

Weighting:

60 %

Length:

2 hours

Type (open/closed book):

Closed book

Electronic devices allowed in the exam:

Students may use a financial calculator or programmable scientific calculator.

Remarks:

Multiple choice questions; and short / long answer discussion type questions.

All formulae except definition of terms and ratios will be given.

Assignment submission

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.

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.infotech.monash.edu.au/resources/student/equity/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

Resubmission of assignments

Resubmission or an extension of the submission dateline (up to 5 working days) may be granted if a medical certificate is produced.

Referencing requirements

Basic reading / reference materials for Assignment 2 will be issued. Students aiming for a HD grade are expected to explore / discuss and add innovations to methodology used in the assignment.

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:

<http://policy.monash.edu.au/policy-bank/academic/education/index.html>

Key educational policies include:

- Plagiarism
(<http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-policy.html>)
- Assessment
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/assessment-in-coursework-p>)
- Special Consideration
(<http://www.policy.monash.edu/policy-bank/academic/education/assessment/special-consideration-policy.h>)
- 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/key-dates/>);
- Orientation and Transition (<http://www.infotech.monash.edu.au/resources/student/orientation/>);
and
- Academic and Administrative Complaints and Grievances Policy
(<http://www.policy.monash.edu/policy-bank/academic/education/management/complaints-grievance-policy>)

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 www.monash.edu.au/students. The Monash University Library provides a range of services and resources that enable you to save time and be more effective in your learning and research. Go to <http://www.lib.monash.edu.au> or the library tab in my.monash portal for more information. 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://adm.monash.edu/sss/equity-diversity/disability-liaison/index.html>;
- Telephone: 03 9905 5704 to book an appointment with a DLO;
- Email: dlu@monash.edu
- Drop In: Equity and Diversity Centre, Level 1 Gallery Building (Building 55), Monash University, Clayton Campus.

Reading List

Charnes, J (2007), Financial Modelling with Crystal Ball and Excel + companion web site, ISBN 13: 978-0-471-77972-8, John Wiley