MONASH University

FIT3051
Decision support systems for finance

Unit guide

Semester 1, 2009

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Table of Contents

FIT3051 Decision support systems for finance - Semester 1, 2009

Unit leader :

Vincent C S Lee

Lecturer(s) :

Clayton

- Vincent Lee

Tutors(s) :

Clayton

- Vincent Lee
- Yi Lu (Allen)

Introduction

Welcome to FIT3051 Decision Support System for Finance, semester 1, 2009. This 6 point unit is elective to all undergraduate degree programs in the Faculty of IT. The unit has been designed to provide you with an understanding of multicriteria decision analysis for finance with selected IT tool for multi- class assets, the contexts within which information technologies are used, and the IT professions. It explores many aspects of IT with emphasis on the relationship between theoretical knowledge and its practical application using cases and real examples.

Unit synopsis

ASCED Discipline Group Classification: 029999 Information Technology not elsewhere classified.

This unit is designed to introduce students to the practical application of decision support systems for finance using Excel Spread sheet/crystal ball, Analytic Hierarch Process framework using Expert Choice software, or Matlab financial toolbox. It covers issues associated with the implementation, theory and risk of decision support systems for finance. The aims of this unit 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 this unit, students should be able to: (a) understand the needs of decision makers and apply techniques and tools to support various phases of the decision making process. (b) formulate requirements for simulation and modelling and apply techniques of sensitivity analysis. (c) analyse and design effective decision support systems for finance problems.

Learning outcomes

The core objectives of the unit are for students: To be familar with, and be able to apply, relevant decision support systems to the solution of financial problems. To be able to formulate, frame and solve financial problems in the context of appropriate decision support systems. To understand relevant finance concepts and understand how to apply those concepts in a practical setting.

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.
- 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

Some prior knowledge of financial ratios and descriptive statistics are essential.

Relationships

FIT3051 is an elective unit in the BBIS degree.

There is no other pre-requisite unit for doing FIT3051 other than some prior knowledge specifed at above which can be learnt quickly.

You may not study this unit and

AFF2051, AFW2051

in your degree.

Continuous improvement

Monash is committed to ‘Excellence in education’ (Monash Directions 2025 - http://www.monash.edu.au/about/monash-directions/directions.html) and strives for the highest possible quality in teaching and learning.

To monitor how successful we are in providing quality teaching and learning Monash regularly seeks feedback from students, employers and staff. One of the key formal ways students have to provide feedback is through Unit Evaluation Surveys. The University’s Unit Evaluation policy (http://www.policy.monash.edu/policy-bank/academic/education/quality/unit-evaluation-policy.html) requires that every unit offered is evaluated each year. Students are strongly encouraged to complete the surveys as they are an important avenue for students to “have their say”. The feedback is anonymous and provides the Faculty with evidence of aspects that students are satisfied and areas for improvement.

Faculties have the option of administering the Unit Evaluation survey online through the my.monash portal or in class. Lecturers will inform students of the method being used for this unit towards the end of the semester.

Student Evaluations

If you wish to view how previous students rated this unit, please go to http://www.adm.monash.edu.au/cheq/evaluations/unit-evaluations/

Improvements to this unit

Some modifications on assessment criteria. There are two assignments and no class test; that one individual and one group assignment.

Unit staff - contact details

Unit leader

Vincent C S Lee

Contact hours : 3:00 pm to 5:00 pm, tuesday

Lecturer(s) :

Associate Professor Vincent Lee
Associate Professor
Phone +61 3 990 52360
Fax +613-99055159
Contact hours : 3:00 pm to 5:00 pm, Tuesday

Tutor(s) :

Associate Professor Vincent Lee
Associate Professor
Phone +61 3 990 52360
Fax +613-99055159
Yi Lu (Allen)

Additional communication information

lecturer and tutor: vincent.lee@infotech.monash.edu.au

Tutor : yi.lu@infotech.monash.edu.au

Teaching and learning method

lectures and tutorials (hands on)

Timetable information

Two hours of lecture each week from 3:00pm to 5:00 pm on every Tuesday in Lecture Theatre R3, Clayton Campus.

Tutorial allocation

students should register for tutorials/laboratories using Allocate+.

Communication, participation and feedback

Monash aims to provide a learning environment in which students receive a range of ongoing feedback throughout their studies. You will receive feedback on your work and progress in this unit. This may take the form of group feedback, individual feedback, peer feedback, self-comparison, verbal and written feedback, discussions (on line and in class) as well as more formal feedback related to assignment marks and grades. You are encouraged to draw on a variety of feedback to enhance your learning.

It is essential that you take action immediately if you realise that you have a problem that is affecting your study. Semesters are short, so we can help you best if you let us know as soon as problems arise. Regardless of whether the problem is related directly to your progress in the unit, if it is likely to interfere with your progress you should discuss it with your lecturer or a Community Service counsellor as soon as possible.

Unit Schedule

Week	Topic	Key dates
1	Fundamentals to decision making in finance	3 Mar
2	Discounted cash Flows and time value of value	10 Mar
3	Analysis of financial statement using ratios	17 Mar
4	Multicriteria decision support framework (AHP)	24 Mar
5	Application of AHP to finance decision support (work example)	31 Mar
6	Risk-return and investment portfolio issues -I	07 Apr
Mid semester break		
7	Risk-return and investment portfolio issues-II	21 Apr
8	Using AHP for investment portfolio decision -I	28 Apr
9	Using AHP for investment portfolio decision -II	05 May
10	Investment portfolio review and management-I	12 May
11	Investment portfolio review and management - II	19 May
12	Intelligent decision support systems for finance	26 May
13	Revision	02 June

Unit Resources

Prescribed text(s) and readings

Bringham E F & Ehrhardt M C (2008), "Finance Management" (12th edition), ISBN-13:978-0-324-42269-6, Thomson South-western.

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.

Lectuer's issued notes and published articles.

Recommended text(s) and readings

Laboratory reference:

Charnes, J (2007),Financial modelling with crystal Ball and Excel+Companion web site , ISB 13: 978-0-471-77972-8, John Wiley

Required software and/or hardware

Excel spread sheet and Crystal Ball software, Expert Choice, or Matlab, or JAVA (JADE)

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 **n** 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 and sample solutions; A sample examination and suggested solution Access to past examination papers; Discussion groups; This Unit Guide outlining the administrative information for the unit; The unit web site is Moodle on MUSO, where resources outlined above will be made available

Library access

The Monash University Library site contains details about borrowing rights and catalogue searching. To learn more about the library and the various resources available, please go to http://www.lib.monash.edu.au.

The Educational Library and Media Resources (LMR) is also a very resourceful place to visit at http://www.education.monash.edu.au/library/

The Monash University Library site contains details about borrowing rights and catalogue searching. To learn more about the library and the various resources available, please go to http://www.lib.monash.edu.au.

Monash University Studies Online (MUSO)

All unit and lecture materials are available through MUSO (Monash University Studies Online). Blackboard is the primary application used to deliver your unit resources. Some units will be piloted in Moodle. If your unit is piloted in Moodle, you will see a link from your Blackboard unit to Moodle (http://moodle.monash.edu.au) and can bookmark this link to access directly. In Moodle, from the Faculty of Information Technology category, click on the link for your unit.

You can access MUSO and Blackboard via the portal: http://my.monash.edu.au

Click on the Study and enrolment tab, then Blackboard under the MUSO learning systems.

In order for your Blackboard unit(s) to function correctly, your computer needs to be correctly configured.

For example:

- Blackboard supported browser
- Supported Java runtime environment

For more information, please visit: http://www.monash.edu.au/muso/support/students/downloadables-student.html

You can contact the MUSO Support by phone : (+61 3) 9903 1268

For further contact information including operational hours, please visit:
http://www.monash.edu.au/muso/support/students/contact.html

Further information can be obtained from the MUSO support site:
http://www.monash.edu.au/muso/support/index.html

Assessment

Unit assessment policy

One individual assignment (15%)

One group assignment (20%)

Tute/lab participation (5%)

Final closed book written examination (Multip[le choice questions pluas short/long answers, 60%)

IMPORTANT INFORMATION

"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 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."

Please ensure that this policy is incorporated in the unit guides for
all applicable units.

The following are examples that detail how the policy works:

Example 1:
Student A
Assignment 1 - 10 marks out of 20
Assignment 2 - 2 marks out of 20
Exam - 35 marks out of 60

To pass the hurdle requirements set by the above Faculty policy the
student would need:
- at least 16 marks out of the 40 available marks for the assignments
(student has received 12 marks - has not met the hurdle requirement)

- at least 24 marks out of the 60 available marks for the exam (student has received 35 marks)
- at least 50 marks overall (student has received 47 marks overall)

Because the student has not met the Assignment hurdle and their overall mark is greater than 44, their mark of 47 N will be downgraded to a 44 N. This ensures that the student does not become eligible for an NP.

Example 2:
Student B
Assignment 1 - 15 marks out of 20
Assignment 2 - 17 marks out of 20
Exam - 20 marks out of 60

To pass the hurdle requirements set by the above Faculty policy the student would need:
- at least 16 marks out of the 40 available marks for the assignments (student has received 32 marks)
- at least 24 marks out of the 60 available marks for the exam (student has received 20 marks - has not met the hurdle requirement)
- at least 50 marks overall (student has received 52 marks overall)

Because the student has not met the Exam hurdle and their overall mark is greater than 44, their mark of 52 P will be downgraded to a 44 N.
Example 3:
Student C
Assignment 1 - 9 marks out of 20
Assignment 2 - 7 marks out of 20
Exam - 24 marks out of 60

To pass the hurdle requirements set by the above Faculty policy the student would need:

- at least 16 marks out of the 40 available marks for the assignments (student has received 16 marks)
- at least 24 marks out of the 60 available marks for the exam (student has received 24 marks)
- at least 50 marks overall (student has received 40 marks overall)

Because the student has not met the overall unit mark of 50%, they will fail the unit, and since their overall mark is less that 44, their mark of 40 N remains unchanged.

Assignment tasks

• Assignment Task

Title : Individual Assignment

Description :

A set of computational and discussion questions on topics 1 to 4.

Weighting : 15%

Criteria for assessment :

Must score at 40% of 15% i.e. hurdle mark of 6%. Choose one and only one answer out of four answers for each question.
Due date : Tuesday, 4:00 pm on 31 March 09

- **Assignment Task**

Title : Group Assignment

Description :

A specific case on investment portfolio setup using behavioural psycology and economic fundamentals criteria and implemented on AHP with the help of Expert Choice software tool.

Students are to work in group of 2 to 4. A final group report of 3000 words (excluding graphs and tables) is to be submitted by the set deadline. Each student must contribute at least 750 words in the report writeup. The report will be graded according to the following criteria:

Weighting : 20%

Criteria for assessment :

The report will be graded according to the following criteria:

1) Investment portfolio formulation (30%)

2) Solution to investment portfolio to obtain optimum asset class allocation (30%)

3) Discussion with interpretation of results and their implications (30%)

4) Conclusion and recommendation of issues for further investigations.

Due date : 26 May (week 12) by 4.00 pm

- **Assignment Task**

Title : Tutorial/laboratory attendance and participation

Description :

Students are expected to attend, where possible all tutorial/laboratory classes and engage in active participation. Tutor in charge will take attendance and monitor participation of activities. [50% of 5% (2.5%) for inactive attendee]. Another 50% of 5% (2.5%) for participation of activity. Faculty of IT 40% of hurdle rate for nonexamination assessment applies
Weighting : 5%

Criteria for assessment :

[50% of 5% (2.5%) for inactive attendee]. Another 50% of 5% (2.5%) for participation of activity. Faculty of IT 40% of hurdle rate for nonexamination assessment applies
Due date : At the end of each tute/lab class

Examinations

- **Examination 1**

  Weighting : 60 %

  Length : 2 hours

  Type (open/closed book) : Closed book

  Remarks (optional - leave blank for none) :

  Multiple choice questions; and short/long answer discussion types of questions.

  All formulae except definition of terms and ratios will be given. Students may use financial calculator or programmable scientific calculator during examination.

Assignment submission

Individual and group assignments will be submitted by **paper** and electronic submission with the appropriate cover sheet correctly filled out and attached. The due dates are the date by which the submission must be received/the date (i.e. 4.00 pm Tuesday) to the assignment box located in building 63, Clayton Campus, Clayton School of IT for hard copy and electronic submission must be uploaded to Moodle. For group assignment only one hard copy and one electronic submission are required.

Assignment coversheets

Assignment must be accompanied by signed coversheet

via the "Student assignment coversheets" (http://infotech.monash.edu.au/resources/student/assignments/) page on the faculty website

University and Faculty policy on assessment

Due dates and extensions

The due dates for the submission of assignments are given in the previous section. 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 seldom regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

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.

Late assignment

Unless written approval is given by the lecturer,

"Assignments received later than one working day after the due date will not be accepted and graded."

Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Assessment for the unit as a whole is in accordance with the provisions of the Monash University Education Policy at http://www.policy.monash.edu/policy-bank/academic/education/assessment/

We will aim to have assignment results made available to you within two weeks after assignment receipt.

Plagiarism, cheating and collusion

Plagiarism and cheating are regarded as very serious offences. In cases where cheating has been confirmed, students have been severely penalised, from losing all marks for an assignment, to facing disciplinary action at the Faculty level. While we would wish that all our students adhere to sound ethical conduct and honesty, I will ask you to acquaint yourself with the University Plagiarism policy and procedure (http://www.policy.monash.edu/policy-bank/academic/education/conduct/plagiarism-procedures.html) which applies to students detected plagiarising.

In this University, cheating means seeking to obtain an unfair advantage in any examination or any other written or practical work to be submitted or completed by a student for assessment. It includes the use, or attempted use, of any means to gain an unfair advantage for any assessable work in the unit, where the means is contrary to the instructions for such work.

When you submit an individual assessment item, such as a program, a report, an essay, assignment or other piece of work, under your name you are understood to be stating that this is your own work. If a submission is identical with, or similar to, someone else's work, an assumption of cheating may arise. If you are planning on working with another student, it is acceptable to undertake research together, and discuss problems, but it is not acceptable to jointly develop or share solutions unless this is specified by your lecturer.

Intentionally providing students with your solutions to assignments is classified as "assisting to cheat" and students who do this may be subject to disciplinary action. You should take reasonable care that your solution is not accidentally or deliberately obtained by other students. For example, do not leave copies of your work in progress on the hard drives of shared computers, and do not show your work to other students. If you believe this may have happened, please be sure to contact your lecturer as soon as possible.

Cheating also includes taking into an examination any material contrary to the regulations, including any bilingual dictionary, whether or not with the intention of using it to obtain an advantage.

Plagiarism involves the false representation of another person's ideas, or findings, as your own by either copying material or paraphrasing without citing sources. It is both professional and ethical to reference clearly the ideas and information that you have used from another writer. If the source is not identified, then you have plagiarised work of the other author. Plagiarism is a form of dishonesty that is insulting to the reader and grossly unfair to your student colleagues.

Register of counselling about plagiarism

The university requires faculties to keep a simple and confidential register to record counselling to students about plagiarism (e.g. warnings). The register is accessible to Associate Deans Teaching (or nominees) and, where requested, students concerned have access to their own details in the register. The register is to serve as a record of counselling about the nature of plagiarism, not as a record of allegations; and no provision of appeals in relation to the register is necessary or applicable.

Non-discriminatory language

The Faculty of Information Technology is committed to the use of non-discriminatory language in all forms of communication. Discriminatory language is that which refers in abusive terms to gender, race, age, sexual orientation, citizenship or nationality, ethnic or language background, physical or mental ability, or political or religious views, or which stereotypes groups in an adverse manner. This is not meant to preclude or inhibit legitimate academic debate on any issue; however, the language used in such debate should be non-discriminatory and sensitive to these matters. It is important to avoid the use of discriminatory language in your communications and written work. The most common form of discriminatory language in academic work tends to be in the area of gender inclusiveness. You are, therefore, requested to check for this and to ensure your work and communications are non-discriminatory in all respects.

Students with disabilities

Students with disabilities that may disadvantage them in assessment should seek advice from one of the following before completing assessment tasks and examinations:

- Faculty of Information Technology Student Service staff, and / or
- your Unit Coordinator, or
- Disabilities Liaison Unit

Deferred assessment and special consideration

Deferred assessment (not to be confused with an extension for submission of an assignment) may be granted in cases of extenuating personal circumstances such as serious personal illness or bereavement. Information and forms for Special Consideration and deferred assessment applications are available at http://www.monash.edu.au/exams/special-consideration.html. Contact the Faculty's Student Services staff at your campus for further information and advice.