MONASH University
Information Technology

FIT3051
Decision support systems for finance

Unit Guide

Semester 2, 2010

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FIT3051 Decision support systems for finance - Semester 2, 2010

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Introduction

Welcome to FIT3051 Decision Support System for Finance. 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

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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Learning outcomes

At the completion of this unit students will have:

- familarrity 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 decison 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 descision 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.

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 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

Prohibitions

BUS3030, AFF2051, AFW2051

Teaching and learning method

Teaching approach

Lectures and tutorials (hands on)

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.its.monash.edu.au/

Unit Schedule

Week	Date*	Topic	Key dates
1	19/07/10	Fundamentals to decision making in finance	
2	26/07/10	Discounted cash Flows and time value of value	
3	02/08/10	Analysis of financial statement using ratios	
4	09/08/10	Multicriteria decision support framework (AHP)	
5	16/08/10	Application of AHP to finance decision support (work example)	Assignment 1 due - 4:00 pm Thursday 12 Aug, 2010
6	23/08/10	Risk-return and investment portfolio issues -I	
7	30/08/10	Risk-return and investment portfolio issues-II	
8	06/09/10	Using AHP for investment portfolio decision -I	
9	13/09/10	Using AHP for investment portfolio decision -II	
10	20/09/10	Investment portfolio review and management-I	
		Mid semester break	
11	04/10/10	Investment portfolio review and management - II	
12	11/10/10	Intelligent decision support systems for finance	Assignment 2 due - 4:00 pm Thursday 14 Oct, 2010
13	18/10/10	Revision	

*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.

Improvements to this unit

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

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 time 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

Assessment

Overview

Examination (2 hours): 60%; In-semester assessment: 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 50% then a mark of no greater than 49-N will be recorded for the unit.

One individual assignment (15%)

One group assignment (20%)

Tute/lab participation (5%)

Final closed book written examination (60%) - Multiple choice questions plus short/long answers

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 submission and preparation requirements will be detailed in each assignment specification. 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.

- **Assignment task 1**

    Title:
    Financial statement analysis
    Description:
    A set of computational and discussion questions on topics 1 to 4.
    Weighting:
    15%
    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. Presentation - that you have presented your answers in a suitably formatted report style.
3. 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:
Thursday, 4:00 pm on 12 Aug 10

• **Assignment task 2**

Title:
Analytic Hierarchical Process
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 1000 words in the report writeup.
Weighting:
20%
Criteria for assessment:
1) Investment portfolio formulation methods (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.(10%)

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:
4:00 pm Thursday 14 October 2010

• **Assignment task 3**

Title:
Tutorial/laboratory attendance and participation
Description:
Students are to attend all tutorial/practical classes in order to meet unit group assessment objectives, where students will engage in active group 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

Examination

-

Weighting:
60 %

Length:
2 hours

Type (open/closed book):
Closed book

Electronic devices allowed in the exam:
None

Remarks:
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.

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

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.

Feedback

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

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