

## ACST151

# INTRODUCTION TO ACTUARIAL STUDIES

Semester 1, 2006

### LEARNING GUIDE (2006)

#### ACST151 Teaching Team

Team Member	Team Role	Room	Telephone	Consultation Hours
John Shepherd	Coordinator & Lecturer	E4A 609	9850 8573	Thursdays, 2-3pm Fridays, 12-1pm
Prof John Pollard	Lecturer			
Brian Chu	Tutor			
Alexander Kwa	Tutor			
Moses Thangasamy	Tutor			
	Unit Administrator	E4A 619		

#### ACST151 Learning Objectives

The overall aim of ACST151 is to introduce you to typical actuarial tasks in several of the areas in which actuaries commonly work (general insurance, life insurance, investments, superannuation). Specific learning objectives are for you to:

- understand why your actuarial education will include some economics, some accounting, some business finance, some computing and some statistics, as well as the core actuarial subjects;
- encounter some of the fundamental tools used by actuaries (such as the life table, the chain ladder method, investment models);
- understand some basic concepts of actuarial work (like expected present values, cash flow projections, equations of value, etc);
- understand why actuaries develop and use mathematical models of real-world processes;
- read and summarise an article from an actuarial journal, magazine or conference.

### Lecture classes

You will have two lecture classes (one 2-hour & one 1-hour) each week:

Lectures	Day	Time	Location
	Tuesday	11am - 1pm	W5A Price
	Wednesday	12-1 pm	X5B T1

Any alterations to the lecture times or locations will be advised in classes and on the ACST151 WebCT site.

### Tutorial classes

There are six tutorial groups. Each group meets once a week, on Friday, for a 1-hour tutorial class. You must be registered for one of these tutorial groups:

Day	Time	Location	Tutor
Friday	9-10 am	C5A310	Moses Thangasamy
		C5A313	Brian Chu
	10-11 am	C5A313	Brian Chu
		W5A103	Alexander Kwa
	12-1 pm	W6B315	Alexander Kwa
		C5A313	Brian Chu

Your tutorial class is an important part of your weekly learning cycle, and is also a good opportunity to get to know some of your fellow students. Your tutor's role is basically to help you learn. A few short years ago your tutor was in the same situation as you – a new actuarial student – so he knows what it's like!

### Textbook

The textbook for ACST151 is:

- Pollard, J H (2004), *Introduction to Risk and Insurance*, Perdisco, Sydney

For a price of \$79.95 (including GST) you will receive a printed copy of the textbook, plus an internet based electronic workbook. The workbook complements the textbook by giving you access to sample spreadsheets that illustrate the actuarial techniques covered, as well as weekly practice problems to help you learn those techniques, and the eight assignments that form part of your assessment for ACST151. The workbook is internet based, so you can use it any time of day, any day of the week, from anywhere in the world where you can get internet access.

See the separate document (available on the ACST151 WebCT site) for how to get your copy of the textbook and electronic workbook.

### EFS Resource & Information Centre (ERIC)

The EFS Resource & Information Centre (ERIC) is in Room 106, Building E4B. ERIC is a drop-in information centre specifically for students who are studying EFS subjects. For more information, including opening hours, visit the ERIC web page at:

<http://www.efs.mq.edu.au/services/eric.htm>

### Grading your learning in ACST151

Macquarie University uses the grades HD (High Distinction), D (Distinction), CR (Credit), P (Pass), PC (Pass Conceded) and F (Fail) for grading the learning of students in units of study. In ACST151, your grade will be determined by how well you show you understand the basic principles and concepts covered. P represents the lowest (basic) level of understanding, CR a higher level than P, D a higher level than CR, and HD the highest level. This table is a guide to the meaning of each grade in the context of ACST151:

Grade	Level of understanding represented by that grade
<b>HD</b>	<ul style="list-style-type: none"> <li>• Able to apply basic principles to solve unfamiliar, non-standard problems</li> <li>• Able to explain solutions &amp; interpret results in clear, simple, non-technical language</li> </ul>
<b>D</b>	<ul style="list-style-type: none"> <li>• Able to apply basic principles to solve problems which differ significantly from the familiar</li> <li>• Able to explain solutions &amp; interpret results clearly and concisely</li> </ul>
<b>CR</b>	<ul style="list-style-type: none"> <li>• Able to apply basic principles to solve problems which differ slightly from the familiar</li> <li>• Able to explain rationale for calculations &amp; interpret results in those cases</li> </ul>
<b>P</b>	<ul style="list-style-type: none"> <li>• Able to perform basic numeric procedures on standard problems in familiar scenarios</li> <li>• Able to explain rationale for calculations &amp; interpret results for standard problems</li> </ul>
<b>PC</b>	<ul style="list-style-type: none"> <li>• Marginally satisfactory achievement of P level understanding</li> <li>• Able to perform basic numeric procedures, but not able to explain them clearly</li> </ul>
<b>F</b>	<ul style="list-style-type: none"> <li>• No evidence of achieving P level understanding</li> </ul>

### Assessment components in ACST151

How will your learning in ACST151 be assessed (graded)? On the basis of the following assessment tasks:

Assessment task	Weighting	
	Each	Total
Eight (8) e-workbook assignments	1.25%	10%
Two (2) In-Class Tests	7.5%	15%
Major Assignment		15%
Literature review		10%
Final Examination		50%

Further details of each assessment component are given on the next page.

### In-Class Tests

There will be two In-Class Tests, held during Wednesday lecture classes, in X5B T1, as follows:

<b>Test</b>	<b>Topics included</b>	<b>Date</b>	<b>Time</b>
Test 1	To be advised	Wednesday, 29 March	12 noon
Test 2	To be advised	Wednesday, 10 May	12 noon

Normal examination rules apply to the conduct of In-Class Tests. These rules are set out under the heading “Student conduct in examinations” on page 43 of the 2006 Macquarie University Undergraduate Handbook, available at (make sure you read and note these rules prior to the first In-Class Test):

<http://handbook.mq.edu.au/PDFs/2006/ug-general-student-info.pdf>

Please note that the In-Class Test dates and times may be subject to change, and that any alterations will be advised in classes and on the ACST151 WebCT site.

Your graded In-Class Tests will be returned to you at your tutorial class. Your In-Class Tests will count towards your final grade (each Test is weighted 7.5%).

### **Assignments**

There will be a group assignment (weighted 15%). Further details of the group assignment, requiring you, as part of a team, to do some spreadsheet modelling and write a report, will be available later.

There will also be eight internet based assignments, each consisting of some problems for you to solve. You will access these assignments through your internet based e-workbook (by Perdisco) - the same e-workbook you will also use for weekly practice problems. Each assignment will be accessible for a limited time only. Assignment accessibility dates will be shown in your e-workbook. These assignments are to help you learn by giving you feedback, and will also count 10% (in total) towards your final grade.

### **Literature review**

For this assessment task (weighted 10%), you will be allocated an article to read from a recent actuarial journal, magazine or conference. You will write a review of the article, summarising its contents, explaining the main points the author makes, and giving your own views on the article. Further details of this assessment task will be given later in a separate document.

### **Final exam**

The final exam will be a 3-hour written paper with ten minutes reading time. The final exam will count 50% towards your final grade for ACST151. It will be held on a date to be advised during the Macquarie University Mid-Year Examination Period (14 to 30 June, 2006).

### **Help with using & making spreadsheets**

Many of the actuarial techniques you will learn in ACST151 will be illustrated by spreadsheet models. You will also be asked to develop or use several spreadsheet models. If you feel that your spreadsheet skills need to be improved, you may find the Excel tutorials (which are free to use) at this web site helpful:

<http://www.fgcu.edu/support/office2000/excel/index.html>

### **Electronic workbook (e-workbook)**

In ACST151 this semester you will use an internet based e-workbook, published by Perdisco (an electronic publishing company). The e-workbook has been designed to support your learning by helping you to apply and understand the new concepts you will encounter in ACST151. The e-workbook includes practice questions (giving you practice at applying what you learn in ACST151 to solving financial problems), as well as eight assignments. You will be able to access the workbook from the computing labs on campus, from the library, from home, from work, from internet cafes – in short, from anywhere you can get access to the internet. The workbook is available 24 hours a day, 7 days a week.

**You need to buy the Workbook** (for \$79.95 including GST) from its publisher Perdisco. See the separate handout about the ACST151 electronic workbook, which tells you how to purchase your copy.

For most major topics in ACST151, you will find a set of practice problems in the workbook. These problems will help you to understand the subject better by giving you practice at applying the basic ideas in solving a range of problems. The workbook will not only give you feedback on whether or not your answers are correct, it will provide you with **complete solutions** to all problems.

The practice questions will not count towards your assessment in this unit. They are there to help you learn and to give you feedback, not to be used in assessing your learning. The eight assignments you will do with the aid of the e-workbook will count (10% in total) towards your final grade in ACST151.

### **ACST151 WebCT Site**

You can access the WebCT site by going to this web page, clicking on “Login”, then entering your Macquarie University username and password (MQID):

<http://online.mq.edu.au>

### **Special Consideration**

If the quality of your learning and work in this subject is adversely affected by illness, accident or some other form of unavoidable disruption, you should familiarise yourself with the special consideration provisions on page 96 of Macquarie University’s Bachelor Degree Rules 7 & 9 in the 2006 Handbook of Undergraduate Studies. **All requests for special consideration should be made in writing, on the standard form, and submitted to the Student Enquiry Service on level 1 of the Lincoln Building.**

You must complete a Professional Authority Form to accompany any application for special consideration based on medical grounds. The special consideration application and professional authority forms are available from the Student Enquiry Service, or from this web site (click on *Academic Forms*):

[www.reg.mq.edu.au/academic-index.htm](http://www.reg.mq.edu.au/academic-index.htm)

### **Calculators**

You will need to use a calculator at the In-Class Tests and the Final Exam. Your calculator must be portable, silent and battery operated. In any question requiring calculations you will have to give a clear indication of the working involved in arriving at your answer.

<b>ACST 151 Timetable (2006)</b>
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Week No	Week Beginning	Topics	Lecturer	Textbook Chapter	In-Class Tests
1	27 Feb	<ul style="list-style-type: none"> <li>• Introduction to ACST151</li> <li>• Financial projections &amp; spreadsheets</li> </ul>	JS		
2	6 March	<ul style="list-style-type: none"> <li>• Gambling risk and ruin</li> </ul>	JP	1	
3	13 March	<ul style="list-style-type: none"> <li>• Risk transfer by insurance</li> </ul>	JP	2	
4	20 March	<ul style="list-style-type: none"> <li>• More varied risks</li> </ul>	JP	3	
5	27 March		JP	3	Test 1
6	3 April	<ul style="list-style-type: none"> <li>• Varying investment returns</li> </ul>	JP	7	
7	10 April	<ul style="list-style-type: none"> <li>• The uncertainty of life</li> </ul>	JP	5	
	17 April	<b>NO CLASSES</b>			
	24 April	<b>NO CLASSES</b>			
8	1 May	<ul style="list-style-type: none"> <li>• Financing retirement incomes</li> </ul>	JS	8	
9	8 May		JS	8	Test 2
10	15 May	<ul style="list-style-type: none"> <li>• Long term life insurance</li> </ul>	JP	6	
11	22 May	<ul style="list-style-type: none"> <li>• Long term life insurance</li> </ul>	JP	6	
12	29 May	<ul style="list-style-type: none"> <li>• Insurance profit</li> </ul>	JP	4	
13	5 June	<ul style="list-style-type: none"> <li>• Actuarial control cycle</li> </ul>	JS		

**Note :**

- (1) There **will be** tutorial classes during Week 1 (on Friday, 3 March).
- (2) There **will not be** tutorial classes during Week 7 (on Friday, 14 April).
- (3) Topics covered may not coincide exactly with the semester weeks as shown above.
- (4) Changes to the timetable may occur. Any alterations will be advised in classes and on the ACST151 WebCT site.