ACST 4045
Advanced Insurance

This course covers the details and practical understanding of the operations and regulation of the life and general insurance industries and the actuarial management of risks undertaken by life and general insurance companies. Topics include an introduction to the classes of insurance products and insurance operations, the processes for determining premium rates and pricing, reinsurance, valuation of liabilities, and the measurement and management of solvency. Qualifying as a Fellow of the Institute of Actuaries of Australia (Actuaries Institute) requires you to pass specialist Part III subjects (consisting of a total of 4 modules/exams). ACST4045 contains a subset of the material from Life Insurance Courses 2A and 2B, and General Insurance Courses 3A and 3B, which are two combinations of Module 2 & Module 3 of Part III of the Actuaries Institute’s Fellowship requirements. It is designed to provide students with the opportunity to study at the same level as expected by the Institute for its Part III subjects. It does not provide you with an exemption from the Institute’s Part III subjects. See the Education section of www.actuaries.asn.au for a description of the requirements of Part III.

<table>
<thead>
<tr>
<th>Mode of Delivery</th>
<th>On campus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites</td>
<td>To enrol in this course you must have completed STAT3038 or STAT6045</td>
</tr>
<tr>
<td>Incompatible Courses</td>
<td>None</td>
</tr>
<tr>
<td>Course Convener:</td>
<td>Aaron Bruhn and Jananie William</td>
</tr>
<tr>
<td>Phone:</td>
<td>02 6125 4904 (Aaron), 02 6125 7311 (Jananie)</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:Aaron.bruhn@anu.edu.au">Aaron.bruhn@anu.edu.au</a>, <a href="mailto:Jananie.william@anu.edu.au">Jananie.william@anu.edu.au</a></td>
</tr>
<tr>
<td>Office hours for student consultation:</td>
<td>To be advised</td>
</tr>
<tr>
<td>Research Interests</td>
<td>Prior to coming to ANU, Aaron worked as an actuary in Life Insurance and then as a Principal Economic and Financial Advisor in the public service. He is interested in a range of areas of actuarial science, including life insurance, superannuation, and a number of non-traditional fields. Prior to coming to ANU, Jananie worked as an actuarial consultant in various general insurance roles in Australia and the UK. Prior to this she worked in investment advisory for superannuation funds. She is interested in using actuarial techniques to solve complex problems in a number of non-traditional areas including public health, public policy and human services.</td>
</tr>
</tbody>
</table>
| Student Administrators | Patty Penm  
patricia.penm@anu.edu.au  
Room 4:48  
Phone:02 6125 1526 |
COURSE OVERVIEW

Learning Outcomes

Upon successful completion of the requirements for this course, students should have the knowledge and skills to:

- Communicate the main classes of life insurance and the operations of life insurance companies
- Understand and apply the processes for determining premium rates and pricing of life insurance policies, including reinsurance
- Understand in depth the processes for estimation of life insurance liabilities and apply a range of valuation techniques
- Explain in detail the main classes of general insurance and the operations of general insurance companies
- Comprehensively understand and implement the processes for determining premium rates and pricing of general insurance policies
- Communicate the processes for estimation of general insurance liabilities and apply a range of valuation techniques
- Communicate the issues of measurement and management of solvency and the concept of risk based capital, for both life and general insurance

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Value</th>
<th>Due Date</th>
<th>Date for Return of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In class quiz</td>
<td>10%</td>
<td>In week 5 of semester.</td>
<td>TBA</td>
</tr>
<tr>
<td>2. Mid-semester exam</td>
<td>40%</td>
<td>In week 7 of semester.</td>
<td>TBA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Specific date TBA.</td>
<td>TBA</td>
</tr>
<tr>
<td>3. Assignment</td>
<td>10%</td>
<td>Due Friday 20th May</td>
<td>TBA</td>
</tr>
<tr>
<td>4. Final exam</td>
<td>40%</td>
<td>TBA</td>
<td>TBA</td>
</tr>
</tbody>
</table>

Research-Led Teaching

The course will address current issues of interest and current approaches to actuarial practice in both life insurance and general insurance. It will cover some parts of the Actuaries Institute Part III syllabus for Life and General Insurance. It will be informed by practical examples and case studies of relevance to professional and research issues currently faced by the profession.

Feedback

Staff Feedback

Students will be given feedback in the following forms in this course:

- Following the mid-semester examination, feedback will be given to the whole class about the general performance on the exam.
- In addition, students will have an opportunity to look over their script-book following both the mid-semester and final examinations.
- Students will also have the opportunity to speak with the lecturer and seek comments from the lecturer about their individual performance in both the presentation and assignment.

Student Feedback

ANU is committed to the demonstration of educational excellence and regularly seeks feedback from students. One of the key formal ways students have to provide feedback is through Student Experience of Learning Support (SELS) surveys. The feedback given in these surveys is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching, and opportunities for improvement.
For more information on student surveys at ANU and reports on the feedback provided on ANU courses, go to

http://unistats.anu.edu.au/surveys/selt/students/ and
http://unistats.anu.edu.au/surveys/selt/results/learning/

**Policies**

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University’s academic standards, and implement them. You can find the University’s education policies and an explanatory glossary at: http://policies.anu.edu.au/

Students are expected to have read the Academic Misconduct Rules 2014 before the commencement of their course.

Other key policies include:
- Student Assessment (Coursework)
- Student Surveys and Evaluations

**Required Resources**

**Examination material or equipment**

The exams will NOT be open book. However you will be permitted to bring in 2 A4 pages of your own notes (the specific conditions will be advised during semester), a calculator, and a dictionary if required to each exam. Further information will be provided to students in lecture time and on Wattle.

**Recommended Resources**

Students will be required to supply a calculator. A basic understanding of the use of MS Excel is assumed. The use of MS Excel may be required for the completion of lecture and exercises in this course. MS Excel may be used on campus or on the students’ personal computers or laptops. Students may find it beneficial to bring a laptop to the lecture time to follow along with MS Excel examples, although this is not a requirement. The use of other office software (such as MS Word or MS PowerPoint) is also required for the completion of the assessed presentations in class.

Comprehensive lecture notes and lecture slides will be made available on Wattle. There are no prescribed texts besides the lecture notes. However, selected parts of the text ‘Life Insurance Textbook Parts A & B’ (Carr et al., 2013) will be made available on Wattle corresponding to the Life Insurance material, and selected parts of the text ‘Actuarial Practice of General Insurance’ (Hart, Buchanan and Howe, 2007) will be made available on Wattle corresponding to the General Insurance material.

In addition, several other required readings will be placed on Wattle for some weeks of the course and these will make up a major component of the material you are expected to be familiar with and be assessed on.
## COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week (start date)</th>
<th>Summary of Activities</th>
<th>Assessment</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (15 Feb)</td>
<td>Introduction to the Course. Life insurance market, products and operations</td>
<td></td>
<td>Readings on Wattle</td>
</tr>
<tr>
<td>2 (22 Feb)</td>
<td>Mortality and morbidity</td>
<td></td>
<td>Readings on Wattle</td>
</tr>
<tr>
<td>3 (29 Feb)</td>
<td>Product design, claims management, underwriting, and reinsurance</td>
<td></td>
<td>Readings on Wattle</td>
</tr>
<tr>
<td>4 (7 March)</td>
<td>Life insurance pricing</td>
<td></td>
<td>Readings on Wattle</td>
</tr>
<tr>
<td>5 (14 March)</td>
<td>In-class quiz</td>
<td>In-class quiz on Tuesday 15 March</td>
<td></td>
</tr>
<tr>
<td>6 (21 March)</td>
<td>Life insurance reserving and liabilities (plus capital, if time allows)</td>
<td></td>
<td>Readings on Wattle</td>
</tr>
<tr>
<td>7 (28 March)</td>
<td>Practice for mid semester exam</td>
<td>Mid Semester exam</td>
<td></td>
</tr>
</tbody>
</table>

Mid semester break

| 8 (18 April)      | General insurance market                                                               |                             | Readings on Wattle                      |
| 9 (25 April)      | General insurance classes of business and operations                                   |                             | Readings on Wattle                      |
| 10 (2 May)        | General insurance premium rating and pricing                                           |                             | Readings on Wattle                      |
| 11 (9 May)        | General insurance valuation techniques                                                |                             | Readings on Wattle                      |
| 12 (16 May)       | General insurance valuation techniques and estimation of liabilities                   | Assignment                  | Readings on Wattle                      |
| 13 (23 May)       | Review                                                                                |                             | Readings on Wattle                      |

Examinations
ASSESSMENT REQUIREMENTS

The ANU is using Turnitin to enhance student citation and referencing techniques, and to assess assignment submissions as a component of the University's approach to managing Academic Integrity. For additional information regarding Turnitin please visit the ANU Online website.

Students may choose not to submit assessment items through Turnitin. In this instance you will be required to submit, alongside the assessment item itself, copies of all references included in the assessment item.

Assessment Tasks

Assessment Task 1: In-class quiz
Details of task:
An in-class quiz will be held in the lecture room on Tuesday 15 March. This will be worth 10% of your final mark for the course. Further details as to length, content, style and structure will be provided closer to the time.

Assessment Task 2: Mid-Semester Examination
Details of task: 10 minute reading time; 1 ½ hour writing time
Please note that the mid-semester exam is compulsory and non-redeemable. The mid-semester exam will cover all the material on Life Insurance. The exam will NOT be open book. However you will be permitted to bring in 2 A4 pages of your own notes (the specific conditions will be advised during semester), a calculator, and a dictionary if required to each exam. Further information will be provided to students in lecture time and on Wattle.

Assessment Task 3: Assignment
Details of task:
This assignment will be on general insurance, is compulsory and details will be provided on the Wattle site closer to the date. It will be worth 10% of your final raw grade, and it will be due by 4pm on Friday 20th May.

Assessment Task 4: Final Examination
Details of task: 10 minute reading time; 1 ½ hour writing time
Please note that the final exam is compulsory and non-redeemable. The final exam will cover all the material on General Insurance. The exam will NOT be open book. However you will be permitted to bring in 2 A4 pages of your own notes (the specific conditions will be advised during semester), a calculator, and a dictionary if required to each exam. Further information will be provided to students in lecture time and on Wattle.

Examinations

The course includes formal examination through a mid-semester and final examinations as described above.

Assignment submission

Online Submission: Assignments are submitted using Turnitin in the course Wattle site. You will be required to electronically sign a declaration as part of the submission of your assignment. Please keep a copy of the assignment for your records.

Extensions and penalties

Extensions and late submission of assessment pieces are covered by the Student Assessment (Coursework) Policy and Procedure.

The Course Convener may grant extensions for assessment pieces that are not examinations or take-home examinations. If you need an extension, you must request it in writing on or before the due date. If you have documented and appropriate medical evidence that demonstrates you were not able to request an extension on or before the due date, you may be able to request it after the due date.
No submission of assessment tasks without an extension after the due date will be permitted. If an assessment task is not submitted by the due date, a mark of 0 will be awarded.

**Returning assignments**
Marked assignments will be returned as soon as they are marked, at the next available lecture time, or you will be able to collect them from the School Office on level 4 of the CBE building.

**Resubmission of assignments**
Students will not be permitted to resubmit assignments.

**Referencing requirements**
Accepted academic practice for referencing sources that you use in presentations and assignments can be found via the links on the Wattle site, under the file named “ANU and College Policies, Program Information, Student Support Services and Assessment”. For a more interactive guide on what this is all about, please see [http://library.acadiau.ca/tutorials/plagiarism/](http://library.acadiau.ca/tutorials/plagiarism/).

**Scaling**
Your final mark for the course will be based on the raw marks allocated for each of your assessment items. However, your final mark may not be the same number as produced by that formula, as marks may be scaled. Any scaling applied will preserve the rank order of raw marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed the scaled mark of that student), and may be either up or down.

**COMMUNICATION**
Students are expected to check the Wattle site for announcements about this course, e.g. changes to timetables or notifications of cancellations. These will typically be made through the News Forum on Wattle, to which all students are automatically subscribed. Notifications of emergency cancellations of classes will be posted on the door of the relevant room. If necessary, the lecturers and tutors for this course will contact students on their official ANU student email address. Any personal queries regarding the course should generally be made by emailing the course convenor.

**SUPPORT FOR STUDENTS**
The University offers a number of support services for students. Information on these is available online from [http://students.anu.edu.au/studentlife/](http://students.anu.edu.au/studentlife/)