ACTUARIAL PRACTICE & CONTROL I & II

Subjects ACTL40006 and ACTL40007

2015

STUDENT GUIDE

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ACTUARIAL PRACTICE & CONTROL I & II

2015

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This document includes information students are expected to know and understand. All information and requirements included in this document are assumed to have been read, understood, and accepted by all students enrolled or participating in the subject.

- Questions are to be directed to the relevant Subject Co-ordinator
- It is the student’s responsibility to have read this document.
1 INTRODUCTION
Welcome to Actuarial Practice & Control (APC). At the University of Melbourne, Actuarial Practice and Control is taught as three honours subjects, APC1 – ACTL40006, APC2 – ACTL40007, and APC3 – ACTL40009.

This guide deals with APC1 and APC2. APC3 is dealt with in a separate guide.

APC1 is taught in first semester, APC2 in second semester.

The Institute of Actuaries of Australia (IAAust) or Actuaries Institute accepts completion of these three subjects, at an appropriate standard (see below), as the basis for an exemption from the Part II of their professional educational requirements.

2 SUBJECT OBJECTIVES
Overview
The APC subjects are intended to form a bridge between the learning of specific technical skills in a well-defined environment in the IAAust Part I subjects and an introduction to their application in a less well-defined, but more realistic, business and commercial environment. In particular, students are expected to commence developing the judgement and professional skills required to successfully apply actuarial principles in professional settings where problems may not be fully defined, and determine and interpret results in terms relevant and appropriate to the users of proposed solutions and/or recommendation.

In this context it is considered an important aspect of APC that students develop their abilities to:

- Selecting tools and techniques appropriate to problems under consideration
- Understanding the limitations of the tools and techniques they may utilise
- Synthesising knowledge and bringing to bear a holistic approach to how problems are to be addressed and analysed
- Develop an awareness of the requirements of professional judgement and ethics.

University Subject Syllabuses
The syllabus for APC (as a whole) may be summarised as follows:

ACTL40006: Topics include insurance markets and products; introduction to professionalism; regulation; risk identification, assessment and management; policy design; actuarial assumptions and feedback.

ACTL40007: Topics include actuarial modelling; valuation of liabilities; pricing of products and contracts; assessment of solvency; analysis of experience; analysis of surplus; model choice and actuarial techniques in the wider fields.

Materials which are directly examinable include all materials covered in lectures and assignments, any textbook readings, Subject Workbook and any other Examinable or Further Readings that may have been specified as being examinable. In case of doubt it
is the responsibility of the student to seek clarification as to whether something is or is not examinable.

**Link with IAAust Professional Actuarial Education**

From a professional actuarial educational perspective, the three APC subjects prepares students who qualify to for the IAAust Part II exemption to then undertake Part III subjects offered by the IAAust.

The IAAust syllabus aims and objectives are provided separately. The approach outlined by the IAAust is consistent with the approach taken in the three university APC subjects. It is noted that the IAAust Aims and objectives will be covered to varying degrees in the APC subjects. In some cases students may be expected to read relevant materials on their own and in other cases a more detailed approach will be taken in class.

**IAAust Aims and Objectives**

As specified by the IAAust in their Part IIA syllabus; on successful completion of APC1 and APC2 students should be able to:

1. Discuss and apply an actuarial control cycle in a variety of practical commercial situations
2. Apply the tests of professionalism
3. Relate the main features within the general commercial environment to medium and long term commercial decisions
4. Examine the need for and impact of regulation and government policy on medium and long term commercial decisions
5. Analyse the main features and risks of financial products and contracts, from the point of view of consumers and providers
6. Demonstrate an understanding of Enterprise Risk Management and its Role in Organisational management
7. Apply a risk assessment framework to identify and assess the risks in a range of commercial situations;
8. Discuss and apply the process of product design
9. Select an appropriate model to solve client problems
10. Recognise the importance of capital
11. Apply relevant approaches and techniques to the valuation of liabilities
12. Apply relevant techniques to the pricing of products and contracts
13. Measure, report and manage solvency
14. Measure and report emerging profits and/or costs
15. Monitor and assess experience
16. Manage the business and respond to the experience

More detailed objectives included under each of the above Aims will be provided separately.

The focus of the APC1 & APC2 subjects is as follows:

- ACTL40006 covers aims 1-9,
- ACTL40007 covers aims 9-16.
However, the objectives are interlinked and students are expected to develop the capacity to apply knowledge from objectives previously covered in current objectives. On completion of APC1 and APC2 students are therefore expected to be able to constructively draw on information from all APC objectives in their analysis of issues and proposed solutions or recommendations.

3 ASSUMED KNOWLEDGE

Technical University Prerequisites

The formal pre-requisites for both APC1 & APC2 are ACTL30003 (300-314) Contingencies and ACTL30004 (300-315) Actuarial Statistics. It is recommended, although not necessarily required, that students complete APC1 before undertaking APC2. In case where this recommended order is not followed it is advised that students consult the Subject Co-ordinator prior to commencement.

It is also assumed that students have completed, or are in the process of currently completing, all the requirements of the IAAust Part I educational requirements, so that students have an adequate knowledge of the Part I IAAust subjects.

‘Background Information’

APC students have various backgrounds.

Some material, expected to be known and understood by students, will be distributed at the beginning of one or both semesters. It is strongly recommended that all students individually ensure they understand this material and, if relevant, can adequately complete any questions that may be set on this material. Material and terminology included in the ‘Background / Fundamentals’ materials will be assumed known and examinable throughout APC1&2.

Current Events of Relevance

It is expected that students will make an effort to ensure they have an ongoing awareness of major issues developing in the financial services sector, in Australia in particular, especially where there may be aspects relevant to actuaries and the actuarial profession.

Reference to current issues will be made during lectures.

4 LECTURES

Lecture Times

APC1 lectures commence at 4.20 pm on Tuesday and Thursday. The Tuesday lectures are held in the Middle Theatrette in the Babel Building, and Thursday lectures in the the Level 2 Theatre in the 200 Berkeley St Building. Lectures will conclude by 6:15 pm, and there will typically be breaks during the time slot.

APC2 lectures commence at 4.20 pm on Tuesday and Thursday. At the time of writing the University timetable shows the Tuesday location as Old Arts – 129 (Theatre B), and the Thursday location as Old Arts – 155 (Theatre D).
Student’s Lecture Preparation and Follow-up
Lectures seek to address the main points from their subject matter. It is expected that students will have reviewed the relevant reading material and prepared any relevant exercises prior to lectures. They are also expected to have reviewed additional points that may be discussed in the readings which may not be specifically covered in lectures.

5 Faculty
Teaching Faculty
The teaching faculty for APC subjects are all actuaries, with extensive professional actuarial experience in a business environment.

The ongoing teaching faculty are:
- Andrew Brown, FIAA, Dip Ed
- David Heath, FIAA, B.Ec (Hons), CPA F Fin
- Daniel Craine, AIAA
- Donald Campbell, FIAA, B Com.

Subject Co-ordinator(s)
David Heath is Subject Co-ordinator for APC1&2. All questions not directly related to lecture content to do with the subject are to be directed to the Subject Co-ordinator (see ‘Contacts’ below).

Guest Lecturers
On occasions, Guest Lecturers will be utilised to discuss specific topics.

Note that the content of Guest Lecturers’ presentations is examinable.

6 Feedback and Contact
It is noted that the majority of the faculty for this subject are typically only on campus for lectures. This is consistent with the objectives of Part II of the IAAust syllabus where practising professionals provide lectures.

Faculty may be contacted via the subject website on the Learning Management System (LMS). The Subject Co-Ordinator may be contacted via email

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There are several levels of feedback and contact that are relevant to this subject:

Feedback: Faculty to Students
- Lectures: General Announcements will be made in lectures. Students are expected to attend/review all lectures. Announcements made in lectures will be considered received by all students.
- Assignments: Feedback on performance will be provided. Summary comments will be provided on assignments. Themes and issues emerging from the
assignments will also be discussed in lectures, with a summary provide on the subject website.

- **Learning Management System:** This will also be used to make major announcements, etc. It will be assumed that it is checked regularly, and announcements made on it will be assumed received by all students.
- **Office:** Faculty, by prior appointment, when on campus.

**Feedback: Students to Faculty**

- **On-line Tutor:** The On-line tutor facility should be used for posting questions of specific to particular lectures and of general interest. Questions posed need to be clearly phrased and relevant to the subject and specific as to:
  - The lecture (with reference to relevant slide(s))
  - The issues being raised, and
  - An outline of the students attempt(s) at resolution to the issues raised and why a problem is perceived.

The On-line Tutor is the preferred method for student to ask questions and it is expected it will be utilised by the APC and its students. The On-line Tutor provides all students with a direct and constantly available means of asking questions and receiving feedback from the subject faulty.

Generally, responses to On-line Tutor question will generally be posted and publicly available to all students enrolled in the subject within 2 or 3 business days. However, where appropriate individual and confidential responses will be made to individual students. Where submitting questions via the On-line tutor is not appropriate for some reason, individual email questions may be used.

- **Specific Lecture Questions:** These should be directed to the lecturer who presented the lecture. It is expected that questions which may be of interest to other students will be asked via the On-Line Tutor. In the case of lectures from Guest Lecturers, questions relating to lectures are to be directed to the Subject Co-ordinator.
- **Assignment Groups:** These will be posted on the LMS.
- **Administrative Questions:** These should be directed to the administrative contact for the subject. Note that administrative staff are not able, nor permitted, to address questions to do with marks or assessment.
- **Other General Questions:** These should also be directed to the Subject Co-ordinator, typically via the On-line Tutor.
7 ASSESSMENT

Assessment Summary

Assessment is as follows:

- 30% of the assessment will be completed during the Semester, and
- 70% from a 3 hour (with 15 minutes reading time) at the end of the semester.

The exams for APC1 and APC2 will be open book.

Student Groups

Students will be assigned to groups, and expected to work together on the Group Assignments, submitting one paper with the names of all those who worked on it noted. All students in a given group, who participated in the preparation of the solutions, will receive the same mark for an assignment. The allocation of groups will be made in the first two weeks of semester.

Assignment Dates

All students are expected to complete all subject assignments.

In APC1 and APC2, all assignments for which marks will be awarded are Group Assignments. Specific dates relating to Assignments shall be advised.

Students should also note that failure to make adequate submissions for periodic group exercises may result in a deduction of marks.

Submitting Assignments

Student groups are to submit the group assignments. For each assignment, each student will also be required to also submit a declaration, which includes a number of confirmations, including standard University requirements with regard to Plagiarism and Collusion.

Assignments must be submitted in accordance with details on the assignment cover sheet. **Late submission of solutions may not be accepted or marked, and late submission of a student’s declaration may result in the student receiving no marks for the assignment.**

The following is to be submitted:

- Solutions: One set per group
- Declarations: An individual declaration is required by each student, although these may be submitted by a single member of the group. The declaration confirms adherence to the required conditions. Further, each the declaration is to specify which student(s) peer reviewed which solutions submitted.

Assignments, and any accompanying materials will be distributed on the LMS.

Assignments are Compulsory

The completion of all Assignments for which marks are awarded is a requirement for passing the subject. The word ‘completion’ in the prior sentence refers not only to
submitting material for assignments, but also to the student(s) having clearly made a serious attempt at providing solutions.

Further, the completion of all Assignments for which marks are awarded is also a necessary requirement for obtaining an exemption for the IAAust Part II.

Submission of exercises
Periodically during semester, students shall be expected to prepare for and participate in exercises within class. Where specified, each group will be expected to submit a summary for discussion. This should be done prior to the relevant class. Failure to provide an adequate submission may result in a deduction of two marks for each student in the group.

8 STUDENT FEEDBACK

Tutorials
There will be several lectures set aside as tutorials for each subject. All students are expected to actively participate and materials covered in and used for tutorial lectures are examinable.

Students are also encouraged to ask questions during lectures times. Distance students participate in this via the distribution of the lectures and the On-line Tutor. All students are encouraged to utilise the On-line Tutor. Specific questions of interest may be addressed in lectures.

Time in Lectures
During lectures, time can be set aside to
- Discuss questions raised by students
- Discuss issues of interest
- Discuss Assignment performance and solutions
- Consider sample questions.

Post Exam Feedback
Following the publication of results for the subject, additional information for students who have not performed as well as they may have wished or expected will be posted to the subject webpage. In particular, this information will include:
- Exemption Status: Position with regard to best performance to date in each of APC1, APC2, and APC3 with regard to exemption status. In particular, the ‘carry-forwards’ with regard to exemption exam performance for each subject.
- Exam Performance: Feedback with regard to the quintile exam marks are in, for each student who does not achieve exemption standard in the subject, by question, for the exam.
9 LEARNING MANAGEMENT SYSTEM (LMS)

The LMS is available at


The LMS for the subject has access restricted to currently enrolled students.

Note that lecture notes and other related materials will be posted on the LMS, generally on the day prior to the lecture. Students are expected to print their own copies of lecture notes and PowerPoint slides prior to the lectures. Copies will not be provided at the lecture.

Note that prior exams from APC will NOT be made available.

10 EXAMINATIONS

Exam Instructions
It is noted that exam instructions may include an instruction to place answers to certain questions in separate booklets. These instructions are to be obeyed. In particular, if an instruction is given to use separate booklets for answering certain questions then additional answers to other questions included in those booklets may not be marked (and so given a mark of NIL for assessment purposes).

It is also the student’s responsibility to be familiar with University rules governing the overall conduct of examinations.

Open Book Exam
As previously stated the exams for APC1 and APC2 are open book. For clarity, the following (as at the time of writing this Guide) is the clause on the examination regarding permitted materials that may be taken into the APC1 and APC2 exams.

*Materials in Examination Room:* Subject text books, personal lecture notes, assignments and a calculator are permitted in the examination room. No other materials, such as dictionaries, (in any form or medium) and no other personal materials (such as handbooks for calculators) are permitted in the examination room.

Students should note that if an item is not clearly permitted the default result is that it will not be permitted. The enforcement of these provisions as at the discretion of the exam invigilators.

Calculators
Subject to University requirements, calculators may be used in the final examination. Where calculators are used, a clear outline of the steps involved in calculations should be shown.

The University does not supply calculators to students for use in examinations.
Calculators that can be programmed to store or retrieve text or formulae are not permitted. Also, calculators that have been tampered with since manufacture are prohibited. It is the responsibility of the student to ensure any calculator they use complies with University requirements.

The calculator must appear on the following list:

- Casio FX82, FX83, FX85 (with or without any suffix)
- Sharp EL531 (with or without any suffix)
- Texas Instruments BA II Plus, TI-30 (with or without any suffix)

**Special Examinations and Special Consideration**

Students that believe their performance in the subject has been adversely affected by sickness or other circumstances beyond their control, may apply for special consideration via standard University of Melbourne procedures. Such applications need be submitted as soon as practicable after the occurrence of events to be considered, within any required time frame and completed in a format as required by the University.

Further information as to the requirements of such applications can be obtained from the Faculty of Economics and Commerce.

A successful application for special consideration may result in the student being offered a special examination. Special examinations are scheduled and located by the University. Failure to attend a special examination, once granted, will result in the forfeiture of any additional special considerations in the determination of the student’s final result.

It is also noted that a frivolous application for special consideration will be viewed seriously by the University and, in some cases, may result in further actions being taken by the University.
11 INTELLECTUAL PROPERTY

It is the student’s responsibility to understand the issues discussed below, and to ensure that he or she takes appropriate actions to ensure that all relevant rules and obligations are complied with.

Academic Misconduct

The University regards issues relating to academic misconduct of any type as a very serious matter – especially in the context of a subject such as APC which is potentially part of the process of a student obtaining a professional qualification.

It is the student’s responsibility to be aware of the issues involved as well as the relevant University rules and expectations. A defense of ignorance or ‘forgetting’ will not be considered acceptable.

Assignments – Declaration

The University has promulgated a standard declaration to be completed by all students when submitting assignment materials. This declaration addresses the issues of plagiarism and collusion. It is the student’s responsibility to know what constitutes plagiarism and collusion.

Assignments for APC require a declaration to be signed by all students – both in Groups and individually. APC declaration addresses plagiarism and collusion, and for Groups also includes an affirmation of Peer review.

Citing References

As part of a student’s responsibilities in respecting intellectual property, it is expected that where materials from other sources are utilized, in particular when answering Assignment questions, that explicit credit in the form of proper references and acknowledgements will be given.

A failure to acknowledge sources of materials in assignments will be viewed seriously, and may result in penalties.

Copyright of Subject Materials

It is noted that all materials provided by the University of Melbourne for this subject are either copyrighted by specified authors (for example in the case of published text books) and/or are copyrighted by the Centre for Actuarial Studies in other cases.

This ownership of materials extends in coverage not only to written materials, but also to all other materials provided in conjunction with the subject. These materials include, but are not limited to:

- Any audio, video or any other type of recording made of or during lectures;
- The web streaming recording made of lectures and made available to currently enrolled distance students or which may, under exceptional circumstances only, be made available to other students currently enrolled in the subject;
- All Examination, Assignment, Quick Quiz and any other teaching materials (both questions and answers) from current and prior APC subjects; and
- Access to the password protected subject web site.
These materials are provided to assist the students currently enrolled in this subject in achieving the learning objectives of this subject. They are not to be used without prior explicit permission for the Centre for Actuarial Studies for other than the educational purposes of this subject.

Access to Lectures After They Have Been Presented
Under normal circumstances, the audio stream of lectures will be made available on the subject LMS site soon after the delivery of the lecture. Students are required to erase any portion of the web streamed recording downloaded on completion of the subject.

The audio taping of lectures by students while they are being presented is not permitted.

12 IAAUST EXEMPTION
The IAAust will exempt students from Part II of their professional educational requirements providing that the student has performed to an appropriate standard across all three subjects, APC1, APC2 and APC3. On completion of APC I, APC2 and APC3 by a student, the University of Melbourne makes a recommendation to the IAAust as to those students who should be granted an exemption, subject to the student applying to the IAAust for that exemption.

Subject to satisfactory completion of all assignments, the basis for making recommendations for exemption is based solely on a student’s final examination performance for APC I, APC2 and APC3. The recommendation for an exemption is subject to the student obtained adequate marks the final examinations for APC I, APC2 and APC3, as well as an adequate overall performance. Note that the marks provided to a student for the subject, and marks used in assessing exam performance for the purpose of exemption, may not be the same as raw marks as some scaling may occur. Scaled examinations marks used in exemption considerations will not be released.

When assessing whether a student is to be recommended for exemption, when any of APC1, APC2 and APC3 has been taken more than once, the best result from each of APC1, APC2 and APC3 is used in for exemption purposes. For each subject any difference between the exam mark achieved and the required mark is computed. When the sum of these numbers over APC1, APC2 and APC3 is positive a student is able to be recommended for an exemption for the IAAust Part II excess marks over the required exam mark level are carried forward.

It is also a requirement of obtaining an exemption for Part II that students have successfully met the requirements specified above with regard to Compulsory Assignments.

As an indicative rule of thumb, if a student achieves a university mark of 75 or above for a subject it is likely (although not certain) that they have attained the required exemption for that subject.

No discussion will be entered into with regard to the determination of the exemption results.
It is noted that to obtain IAAust recognition for a Part II exemption, the appropriate application needs to be made, including payment of any relevant fees by the student, to the IAAust. Details of such requirements can be obtained from the IAAust, for example from its website, http://www.actuaries.asn.au

13 STUDENT ACCEPTANCE OF CONDITIONS
By enrolling in the subject students are deemed to have accepted the conditions as outlined above in sections 1 through 12 inclusive, and agree to abide by the decision of the Subject Co-ordinator(s) in terms of the interpretation of these conditions and other matters relating to their performance in this subject which may arise, subject to the standard University of Melbourne rules regarding appeal and review.

14 SUBJECT OUTLINE
The intended lecture schedule to cover the subject objectives is provided for the information of students. The schedules will be provided separately.

It is noted that changes to this schedule may be made – for example to reflect availability of guest lecturers or other matters that may not be currently known.

15 LEVELS OF LEARNING
It is clear that not all aims and objectives of the subject will be covered to the same level of detail, and students are not expected in this subject to become a ‘master’ or ‘expert’ in each these areas. In some cases students are merely expected to be aware of issues, while in other they are expected to be able to build models or offer informed opinions or recommendations as to how issue should be addressed.

To give some indication of the different levels of learning that could be expected for topics, a taxonomy is included in Appendix 1.

The IAAust syllabus does not formally utilise a learning taxonomy or provide specific expectation of the level of understanding expected of each Aim or Objective. However, the use of key words in the IAAust syllabus may be taken to be indicative. In the context of APC, the discussion provide in Appendix 1 leading to the table ‘Levels of Learning – Key Words’ can be used to indicate the level of learning expected of students as they address questions etc.
16 READINGS

In each semester readings will be outlined on the LMS, together with copies of some of the readings.

For APC1 and APC2, it is recommended that students purchase the text:


This can be purchased directly from the IAAust. The order form is available on IAAust website (www.actuaries.asn.au).
Workbook and Further Readings
In the case of APC1&2, the subject workbooks are a listing of readings which shall be placed on the LMS. Some of the readings will be supplied on the LMS, whereas for others references will be provided for students to source the readings.

Each subject workbook will include Examinable Readings. Further Readings will be specified and will be made available on the LMS or by direct reference to a website.

In some cases readings will be provided as part of Assignments. All such readings are then considered to be Examinable.

Further Examinable or Further Readings may prescribed during the subject by faculty and will then be made available to students via the LMS. Where Additional readings, or portions of them, are not specifically prescribed as being examinable they will not be considered directly examinable. Students are encouraged to read and consider materials included in any Further Readings and the IAAust text noted above as it is considered that these readings offer students an opportunity to gain further insight into the topics being discussed.

General References
Some further general references which may be of interest for the subject overall are included below. These references are available either from the University Library or from the websites listed.

G5 APRA website: http://www.apra.gov.au
G6 ASIC website: http://www.asic.gov.au
APPENDIX 1: LEVELS OF LEARNING

To assist students in understanding the level of learning expected from them, the following 6 level guide is provided, starting from the lowest or easiest level and increasing in complexity.

- **Knowledge**: Student recalls or recognizes information, ideas, and principles in the approximate form in which they were previously learned. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Examples of learning objectives at this level: know common terms, know specific facts, know methods and procedures, know basic concepts.

- **Comprehension**: Student translates, comprehends, or interprets information based on prior learning. Comprehension is the ability to grasp the meaning of material. This may be shown by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the basic or core understanding. Examples of learning objectives at this level: understand facts and principles, interpret material, interpret numerical data, translate verbal material to mathematical formulae.

- **Application**: Student distinguishes, classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question. Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension. Examples of learning objectives at this level: apply concepts and principles to new situations, apply laws and theories to practical situations, solve mathematical problems, demonstrate the correct usage of a method or procedure.

- **Analysis**: Student breaks down material into components, understands organisational structures and the relationships parts. Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of parts, analysis of the relationship between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material, and the ability to look behind the facts and assumptions. Examples of learning objectives at this level: recognize unstated assumptions, recognize logical fallacies in reasoning, distinguish between facts and inferences, identify the relevancy of data.

- **Synthesis**: Student originates, integrates, and combines ideas. Synthesis is the ability to put parts together to form a new whole. This may involve the production of a unique communication, a plan, or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviours, with major emphasis on the formulation of new patterns or structure.
Examples of learning objectives at this level: ‘propose a plan for …’, integrate learning from different areas into a plan for solving a problem, ‘formulate a new scheme for …’.

- **Evaluation:** Student appraises, assesses, or critiques on a basis of specific standards and criteria. Evaluation is to do with the ability to judge the value of material for a given purpose. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

Key to assessing the learning outcomes for each Aim or Objective is that the desired levels of learning are clearly specified to all stakeholders involved - in particular students and lecturers. To help clarify this, we have specified a set of key words and allocated them to the various levels of learning outcome. Note no key word is used in more than one place. The application of the hierarchy of learning objectives will require some judgement on the part of both students and lecturers.

This section is based on ‘Quantifying and Assessing Learning Objectives’ by Gribble, Jones and Meyer, Research Paper Number 112, Centre for Actuarial Studies, University of Melbourne, 2003.

### Levels of Learning – Key Words

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