

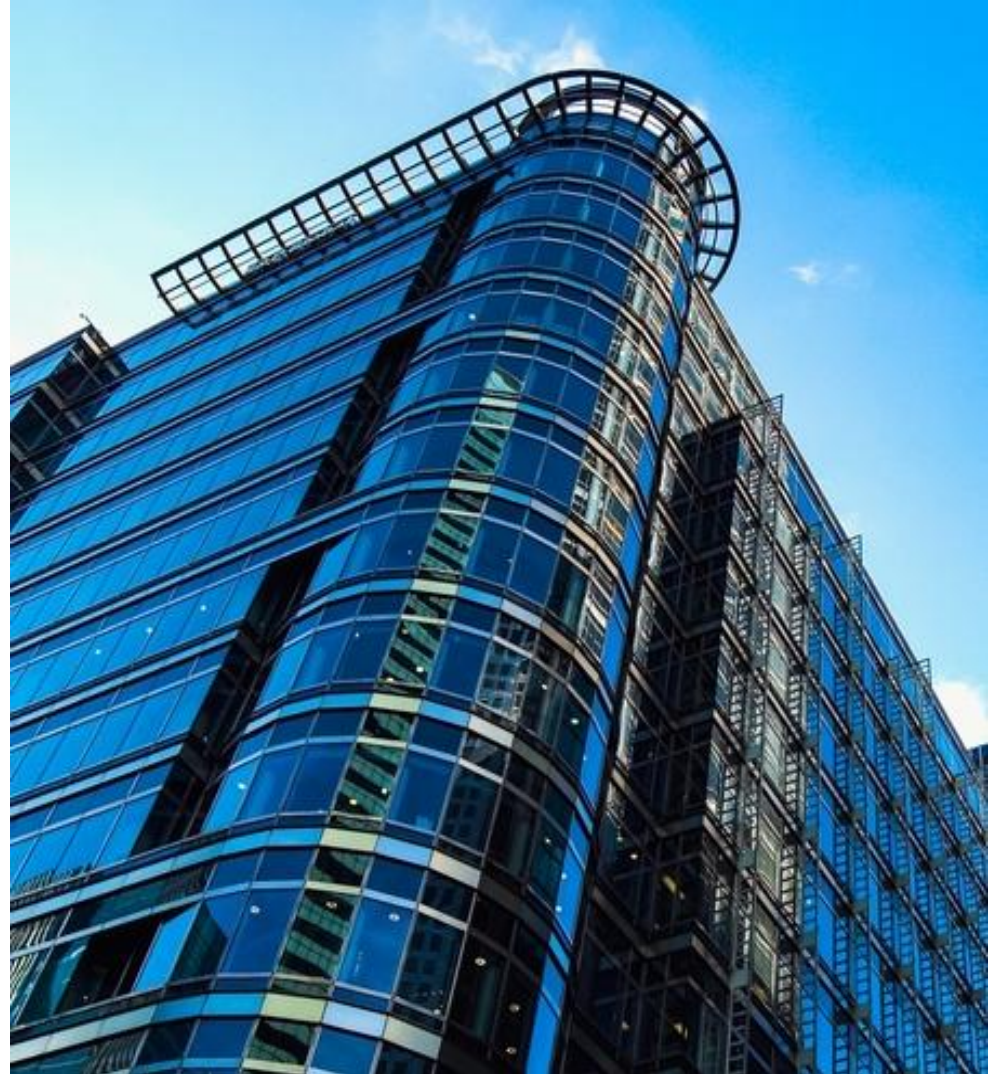


APR Training Services Catalogue



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Excel Fundamentals

Time: Approx 1½-2 hours

Pre-requisites: None

An introductory course designed for attendees with no previous experience using Microsoft Excel. This course covers creating and saving simple spreadsheets and provides the basic working knowledge of Excel required for other Excel training courses.

Learning Objectives:

- Be able to create and save simple Excel spreadsheets.
- Know the difference between cells, worksheets and workbooks.
- Be able to enter data and formula into cells and apply simple formatting.
- Understand how cell referencing works.

Exercises & Marked:



Excel Functions & Formulae

Time: 0.5 days

Pre-requisites: Basic knowledge of Excel

The functions and formula course provides a comprehensive overview of the main functions an actuarial user of Microsoft Excel will need to know. Logical functions, mathematical functions and reference functions are introduced, which are then built up to make more complex formulae.

Learning Objectives:

- Be able to use absolute and relative cell references and create named ranges.
- Be able to use a range of built-in standard Excel functions.
- Be able to build up individual functions into complex formulae to solve actuarial problems.
- Know how to use dynamic array formula on groups of cells.

Exercises & Marked:



Excel Modelling: Design and Review

Time: 0.5 days

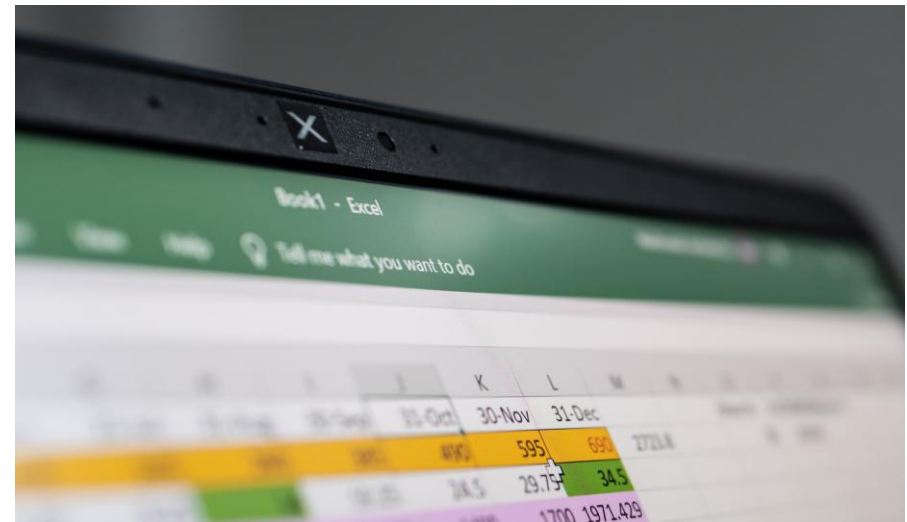
Pre-requisites: Basic knowledge of Excel

A presentation session covering best practice for designed spreadsheets and outlining common pitfalls.

Learning Objectives:

- Know some of the common causes of spreadsheet error.
- Be able to explain and apply principles of good spreadsheet design and identify poor practices.
- Know how to use the traffic light approach to audit a spreadsheet

Exercises & Marked:



Excel Data

Time: 0.5 days

Pre-requisites: Basic knowledge of Excel

The Excel Data course covers key concepts in data interrogation, manipulation and visualisation.

Learning Objectives:

- Be able to interrogate large data sets through sorting and filtering.
- Be able to perform scenario testing on a spreadsheet
- Understand various approaches to reduce the risk of errors.
- Know how to visualise data effectively using conditional formatting.

Exercises & Marked:



Excel Reporting

Time: 1 day

Pre-requisites: Basic knowledge of Excel

This course introduced charts and pivot tables, before turning to more advanced features such as dashboards, Power Query, and Power Pivot.

Learning Objectives:

- Be able to use charts and PivotCharts to visualise data sets.
- Know how to use advanced graphing features such as secondary axes, trendlines, and error bars.
- Know how to create and use PivotTables to pull out key information from a dataset.
- Be able to create PivotCharts using slicers and timelines to visualise data.
- Be able to use Power Query to join and append tables.

Exercises & Marked:



Combined Excel Data & Reporting

Time: 0.5 days

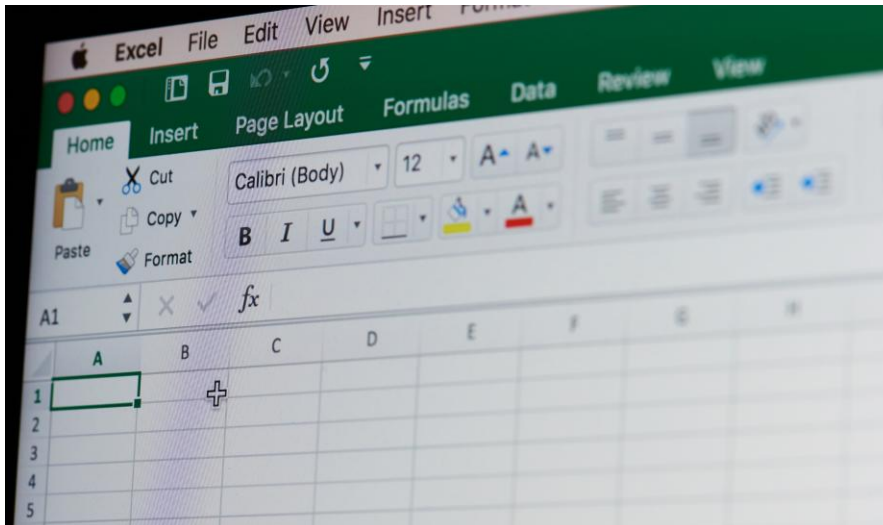
Pre-requisites: Basic knowledge of Excel

We also offer a combined course covering the highlights of the Data and Reporting courses in half a day. It covers the sorting and filtering introduced in the Excel Data course, before introducing PivotTables, PivotCharts, and slicers from Excel Reporting.

Learning Objectives:

- Be able to interrogate large data sets through sorting and filtering.
- Understand why it may be useful to format data as a table.
- Be able to create graphs and charts to visualise data sets.
- Know how to use advanced graphing features such as secondary axes, trendlines, and error bars.

Exercises & Marked:





Introduction to VBA

Time: 1 day

Pre-requisites: Basic knowledge of Excel

A full day course providing a full introduction to VBA, guiding attendees to consider when it may be appropriate to use a VBA solution rather than just a spreadsheet.

Learning Objectives:

- Know how to use the Excel macro recorder to automate simple tasks.
- Be able to write custom functions in VBA.
- Know the main built-in data types within VBA.
- Be able to design simple user forms to allow input into a VBA script.

Exercises & Marked:



Intermediate VBA

Time: 1 day

Pre-requisites: Introduction to VBA

Building on from the APR introductory course, the intermediate VBA course delves further into some of the concepts

Learning Objectives:

- Be able to use arrays effectively to read and write data to a worksheet
- Know the difference between objects and collections
- Be able to pass variables between different procedures
- Reading and writing data text files and other workbooks

Exercises & Marked:



Introduction to R

Time: 1 day

Pre-requisites: None

An intensive full day session covering an introduction to coding in R. The structure of this course is designed to instil good coding practices.

Learning Objectives:

- Be able to use R for simple calculations and assigning variables.
- Know how to index and subset vectors.
- Be able to use loops and conditional code using 'if' statements.
- Be able to calculate statistics from a given data set.
- Know how to draw simple plots from data.

Exercises & Marked:



Intermediate R

Time: 1 day

Pre-requisites: Introduction to R

Building on from the introductory course, the intermediate course introduces programming within R, guiding attendees to construct their own functions.

Learning Objectives:

- Know how to write custom functions in R and use higher order functions such as apply.
- Be able to add error handling and warning messages to existing code.
- Understand the difference between the class and type of R variables
- Know how to handle dates in R
- Understand the concept of an R package and be able to install additional packages.

Exercises & Marked:



Creating Packages in R

Time: 1 day

Pre-requisites: Introduction to R

A full day course which guides attendees through creating an R package to calculate annuities.

Learning Objectives:

- Be able to create a simple R package.
- Understand the important of good documentation and version control.
- Know how to build and install an R package.
- Understand the principles of good testing practice when building custom packages.

Exercises & Marked:



Introduction to SQL

Time: 1 day

Pre-requisites: None

A whole day session introducing SQL, intended to give a solid base for a variety of applications. The concepts of relational databases are also covered, and this doesn't require knowledge of Access or any other database experience.

Learning Objectives:

- Be able to create and tables in SQL and insert data.
- Be able to write simple queries to interrogate SQL tables.
- Understand the difference between the main types of join
- Be able to create temporary tables and views

Exercises & Marked:



Intermediate SQL

Time: 1 day

Pre-requisites: Introduction to SQL

An additional full day course building on the contents covered in the introductory course.

Learning Objectives:

- Be able to create a self-join from a table to itself
- Know how to add constraints to columns in the data set
- Know how to define local variables and stored procedures
- Understand advanced SQL techniques, such as common table expressions and dynamic SQL

Exercises & Marked:



Microsoft Access

Time: 1 day

Pre-requisites: None

A whole day course introducing Microsoft Access. It contains two parts, the first introducing relational/flat-file database, typical uses, and how to create relationships, and the second introducing queries, data validation and formatting, and how to create macros

Learning Objectives:

- Understand the differences between relational and flat-file databases.
- Create and populate database tables and create relationships between them.
- Create and use queries and query joins, and apply validation/formatting to them.
- Create macros to automate routine tasks.

Exercises & Marked:



Introduction to Python

Time: 1 day

Pre-requisites: None

A whole day course introducing Python in an actuarial context. This course covers the basic set-up of Python, writing scripts, and an introduction to classes within Python.

Learning Objectives:

- Understand the basics of Python syntax.
- Be able to run scripts and call other functions from within code.
- Understand the basics of Python packages and object-oriented programming.
- Know what iterators, generators, and decorators are, and know how to use them in practice.

Exercises & Marked:



Overview of Technology Tools

Time: Approx 1-1½ hours

Pre-requisites: None

A short course discussing the advantages and disadvantages of various software, such as Excel, R, Prophet, and Power BI.

Learning Objectives:

- Develop a high-level understanding of a range of software and understand their different uses in the insurance industry.
- Understand the pros and cons of various software in achieving their goals.
- Be able to choose the correct software for any given situation

Exercises & Marked:



Other Coding and Technology Courses

Time: 0.5 day each

Pre-requisites: None

Introduction to Power BI:

- Understand how to use Power BI to load and transform data, and create a relational data model.
- Know how to use DAX to add calculated columns, and create visuals.

Exercises & Marked:



Overview of Prophet:

We have a range of Prophet training materials and exercises that demonstrate some of the key concepts and features for both users and developers. We do not currently have our own Prophet license so we would require access to L&G systems and one of your Prophet licenses to deliver these. We would be happy to provide more information on course specifics if these would be of interest

Exercises & Marked:



Other Coding and Technology Sessions

Time: 1 hour each

Pre-requisites: None

Demystifying AI:

An overview of the main categories of AI and their uses. Includes a practical example and overview of potential future actuarial applications of AI.

- Know the main categories of AI and their potential uses.
- Understand some of the limitations of AI.
- Awareness of current/potential future developments in AI.

Exercises & Marked:



To Excel or not to Excel:

A practical session covering uses and limitations of Excel, good practice model design, and alternatives to Excel.

- Understand the uses and limitations of Excel
- Be able to assess the suitability of Excel for particular applications.

Exercises & Marked:



Data Science

Time: 0.5 days

Pre-requisites: None

An introductory course providing attendees with a basic knowledge of data science designed for actuaries, including the practical and ethical considerations required.

Learning Objectives:

- Understand how actuaries can use data science in their work and the typical workflow of such projects.
- Understand what problems may arise when using these tools in the industry industry.
- Know the practical and ethical considerations to keep in mind when applying its techniques in an insurance context.

Exercises & Marked:



Introduction to Actuarial Modelling

Time: Approx 2 hours

Pre-requisites: None

This course gives an overview of the key design decisions when building an actuarial model and guides attendees through creating a model to project the net present value of income received from an investment policy.

Learning Objectives:

- Be able to explain the purpose of actuarial modelling.
- Understand the difference between spot and forward rates.
- Understand the difference between deterministic and stochastic models.
- Be able to construct a simple actuarial model and communicate the results.

Exercises & Marked:



Principles of Software Testing

Time: 0.5 days

Pre-requisites: None

An introduction to the importance of testing new models or software. This session covers various forms of testing including regression testing, unit testing, and user acceptance testing.

Learning Objectives:

- Understand the reason behind and importance of software testing.
- Be able to describe the different types of software testing.
- Understand the roles of the developer and the tester.

Exercises & Marked:



Proxy Modelling

Time: 1 hour

Pre-requisites: None

An introduction to proxy modelling, covering the meaning, common techniques, and validation of proxy modelling.

Learning Objectives

- Understand the meaning and purposes of proxy modelling.
- Gain a basic understanding of common proxy modelling techniques and how they are applied.
- Understand the important of validation of proxy models and possible tests.
- Be aware of recent developments in proxy modelling.

Exercises & Marked:



Introduction to Life Contingencies

Time: 1 day

Pre-requisites: None

This course introduces some key concepts in actuarial mathematics, including the calculation of the present value of assurances and annuities

Learning Objectives:

- Know how to construct a life table and the difference between period, cohort, and select tables.
- Learn how to interpret annuity and assurance functions.
- Be able to calculate the present values of assurances and annuities.

Exercises & Marked:



Application of Financial Mathematics

Time: 1 day

Pre-requisites: None

A one-day course introducing the main principles of financial mathematics.

Learning Objectives:

- Understand present value, discount factors, and effective/nominal rates.
- Understand the different types of annuities.
- Be able to calculate annuities, both annually and non-annually.
- Be able to apply discounting to practical situations, such as capital project appraisal and bond investment

Exercises & Marked:



Key Concepts in Insurance and Risk

Time: Approx 1-1½ hours

Pre-requisites: None

A general introduction to the insurance industry and risk, introducing key concepts and terms.

Learning Objectives:

- Know and understand the definition of risk in an actuarial context.
- Classify risks according to grouping factors.
- Understand the function of insurance and the main types of insurable risk

Exercises & Marked:



Investment by and in Insurers

Time: Approx 1-1½ hours

Pre-requisites: None

A short course introducing the main types of investment that an insurer may hold and ways of investing in an insurer.

Learning Objectives:

- Be able to explain some key features of the various types of investment asset that an insurer may hold.
- Be able to explain some key features of the different ownership structures used by insurers, and ways of investing in an insurer.

Exercises & Marked:



Managing Unit-Linked/With-Profits

Time: 1 day

Pre-requisites: Introduction to Life Insurance Products

A full day course introducing Unit-Linked and With-Profits products.

Learning Objectives:

- Understand the main tasks involved in managing existing unit-linked and with-profits funds.
- Be able to calculate a with-profits asset share.
- Understand some of the main governance and regulation around with-profits business.
- Understand the main challenges and issues faced by with-profits funds.

Exercises & Marked:



Introduction to Life Insurance Products

Time: 0.5 days

Pre-requisites: None

This course aims to provide a general overview of the main products offered by life insurers.

Learning Objectives:

- Know the main types of life assurance contracts and their basic features.
- Have a good understanding of retirement income products.
- Understand the difference and similarities between Unit-Linked and With-Profits products.

Exercises & Marked:



Bulk Purchase Annuities

Time: 1 hour

Pre-requisites: None

An introduction to Bulk Purchase Annuities (BPAs), including overviews of BPAs, the current market landscape, and some aspects of work in this area.

Learning Objectives:

- Know the meaning of BPAs and why they may be undertaken, from various perspectives.
- Awareness of current developments in the BPA market.
- Understand pricing and processes relating to BPAs.

Exercises & Marked:



Introduction to Life Insurance Reserving

Time: Approx 2 hours

Pre-requisites: None

A technical course introducing the different types of reserving calculations.

Learning Objectives:

- Be able to explain why an insurer would want to hold reserves
- Understand the concept of a reserving basis
- Understand the difference between prospective and retrospective reserves

Exercises & Marked:



UK Pensions Arrangements

Time: Approx 2 hours

Pre-requisites: Introduction to Financial Mathematics, working knowledge of Excel

This session aims to give an overview of the current state of the Pensions sector in the UK, covering state, occupational, and personal pension schemes.

Learning Objectives:

- Know the three main categories of pension available in the UK.
- Be able to outline the main forms in which a pension can be received in the UK.
- Be able to explain the key differences between defined benefits and defined contribution occupational pension schemes.

Exercises & Marked: ☒

Introduction to Reinsurance

Time: Approx 1-1½ hours

Pre-requisites: None

A short PowerPoint course introducing reinsurance and how it could impact attendees' work.

Learning Objectives:

- Understand the basics of reinsurance, including the key types.
- Understand why insurance companies may use reinsurance, and the risks involved.
- Understand some of the key challenges and issues related to reinsurance.

Exercises & Marked: ☒

Capital Management and Internal Models

Time: 0.5 days

Pre-requisites: None

An introductory course looking at capital management and insurer Internal Models (IMs). It first covers the core concepts of capital management and the capital management function, before turning to IMs and capital modelling within them.

Learning Objectives:

- Knowledge of key concepts and terminology of the UK regulatory regime for the capital resources of insurers and insurance groups.
- Understand the key aspects of capital management and the role of the capital management function.
- Knowledge of the motivations that may exist for moving to an IM.
- Acquire a basic understanding of the realities of using an IM.
- Understand the key aspects of IM design and governance.

Exercises & Marked: ☒

Other Industry Knowledge Sessions

Time for each: 1 hour

Pre-requisites: None

Matching Adjustment:

An introduction to the current Matching Adjustment (MA) under Solvency UK and the potential future of the MA in the UK.

Exercises & Marked: ☒

Internal Model Validation:

An overview of IMV, covering validation cycles, model changes, and processes.

Exercises & Marked: ☒

What is Expert Judgement?:

Exploration of the frameworks, processes, and validation of expert judgement.

Exercises & Marked: ☒

Equity Release Mortgages:

An introduction to ERM including definitions, key risks, and modelling.

Exercises & Marked: ☒

Regulation of Insurers UK/EU

Time: 1 day

Pre-requisites: None

A full day course providing an overview of the UK/EU Regulatory Frameworks in relation to solvency capital and regulatory reporting.

Learning Objectives:

- Understand key regulatory terminology and concepts
- Understand the meaning of solvency, regulatory valuation, and the regulatory capital position.
- Familiarity with the ladder of regulatory intervention.
- Understand the regulatory balance sheet and capital position, including MCR and SCR.
- Know the main features of Solvency II/UK, and be aware of recent developments in them.

Exercises & Marked:



Financial Reporting for Insurers

Time: Approx 1½ hours

Pre-requisites: None

A session providing attendees with an overview of UK/RoI statutory reporting, including UK & Ireland GAAP and IFRS standards.

Learning Objectives:

- Understand the basics of UK & Ireland GAAP and IFRS17.
- Develop a basic understanding of how the main financial statements are presented under each of these standards.
- Develop a high-level understanding of the annual report and accounts of insurance companies more generally.
- Know the main differences between UK & Ireland GAAP and IFRS reporting.

Exercises & Marked:



Financial and Regulatory System

Time: 1 day

Pre-requisites: None

A full day course providing a comprehensive overview of the financial system and its regulation, ideally delivered in three parts.

Learning Objectives:

- Awareness of the 'big picture' of the financial system and regulatory environment.
- Understand who regulates what within the UK financial system, including the roles of HMT, BoE, PRA and FCA, and TPR.
- Awareness of EU regulation and roles.

Exercises & Marked:



Actuarial Professional Standards

Time: Approx 1½ hours

Pre-requisites: None

An overview of actuarial professional standards including the Actuaries' Code, APS and TAS's, and consideration of applying these in practice.

Learning Objectives:

- Understand the various professional standards that apply to actuarial work.
- Understand the key principles and know where to look to find more information
- Be able to identify difficult professional/ethical situations and know where to find support.

Exercises & Marked:



Effective Written Communication

Time: Approx 1½ hours

Pre-requisites: None

This course is designed to improve attendees written communication skills, focusing on the different considerations that need to be made.

Learning Objectives:

- Know what to consider when producing written communication to ensure it achieves its aim.
- Be able to judge what the right communication style is for a given purpose and audience.
- Know how to best structure different types of communications.

Exercises & Marked: ☒

Documentation Skills

Time: 0.5 days

Pre-requisites: None

A presentation session covering what documentation means in an actuarial context and why it is important

Learning Objectives:

- Understand how to plan and structure documentation.
- Understand how the production process works, including peer and user review.
- Be able to write effective documentation that avoids ambiguity.
- Know how to effectively review documentation and understand common pitfalls.

Exercises & Marked: ☒

Introduction to Word

Time: 0.5 days

Pre-requisites: None

An overview of Microsoft Word, giving attendees a good grasp of the less obvious functionalities of Word and instilling good practice for creating well-organised documents.

Learning Objectives:

- Understand what makes a good word document.
- Be able to format text, paragraphs, and pages according to best practices.
- Be able to use different styles, for example in tables.
- Know how to review documents using tracked changes.

Exercises & Marked: ☒

Preparing and Delivering Presentations

Time: Approx 1½ hours

Pre-requisites: None

A session covering best practices when it comes to preparing and delivering presentations.

Learning Objectives:

- Know how to plan and structure a presentation.
- Understand the best practices for layouts and illustrating data on slides.
- Develop attendees' presentation skills, such as how they should address their audience.

Exercises & Marked: ☒



Good Actuarial Practice

Time: Approx 1½ hours

Pre-requisites: None

A soft skills session looking at some of the key principles for success when starting out on an actuarial career. The principles in this session are based on APR's experience of training new actuarial staff over many years and the feedback we receive on our staff's performance from clients.

Learning Objectives:

- Know what APR views as the key behaviours of a good actuarial student.
- Be aware of common actuarial student pitfalls.
- Understand how these behaviours apply to actuarial work.

Exercises & Marked:



Risk & Control Frameworks

Time: 1 hour

Pre-requisites: None

An introduction to risk and control frameworks including the meaning of risks and controls, why this matters, and the processes involved.

Learning Objectives:

- Understand the definition and elements of a risk and control framework and the motivations for implementing.
- Awareness of the practicalities of implementing a risk and control framework and lessons learned from a project example.

Exercises & Marked:



Introduction to Project Management

Time: Approx 1½ hours

Pre-requisites: None

A session introducing attendees to project management, best practices, and some common approaches

Learning Objectives:

- Understand the project lifecycle, how this applies to work, and their structure.
- Understand the different roles and responsibilities of those involved.
- Be aware of the common approaches to project management, and understand the key tools and terminology related to these.

Exercises & Marked:

