

# Actuarial Trailblazer Apprenticeship Approach to Assessment: Summary

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## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### 1. Introduction and Overview

The apprenticeship Standard for an Actuarial Technician was designed by the industry for apprentices employed in a wide variety of different organisations in the consultancy, pensions, investment, health, insurance, risk and wider actuarial fields. The labour market need for this occupation would mean that numbers for this apprenticeship would be approximately 20 to 30 in the first two years reaching around 50 each year thereafter.

Our approach to assessment therefore, has been designed to be:

- Appropriate, relevant and feasible in a wide range of contexts
- Consistent across these contexts
- Affordable and manageable based on the number of potential learners

Employers have adopted the following broad principles to inform the approach:

- Assessment should motivate apprentices to do their very best, not just do enough to satisfy a minimum standard – for example, by using a ‘high stakes’ portfolio showcase\* coupled with an interview and supported by a logbook, apprentices can be given a clear performance goal to aim at.
- Assessment process should add value to both the apprentice and the employer, by complementing and building on normal performance management and development tools.
- It should enable and encourage progression and continuous professional development by being linked to professional exams and recognition.
- It should position the apprenticeship not just as a job, but as the starting point for a career in the sector – assessment at the end marks a clear recognition of achievements, on which the individual can build.
- Assessment methods chosen should ensure relevance and consistency, irrespective of the specific job role of the apprentice.
- Costs and practicalities should be appropriate and proportionate to employers with small numbers of apprentices.
- Assessment should be driven by the Standard and should cover full competence in the occupation of an Actuarial Technician.

The approach is based on employers’ requirements that apprentices, a) are able to perform their role within their occupation to a demonstrably high standard on completion; and b) make good progress towards this goal throughout the apprenticeship.

\*This is a key part of the end assessment that should demonstrate application of knowledge and be supported by other material as required to show full coverage of the Standard.

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### Overview of Assessment

The assessment is based on:

A recommended modular series of knowledge assessments and required professional exams - which will include:

- Modules 0 (Entry Exam) and 1 (Finance and Financial Mathematics) from the Institute and Faculty of Actuaries' Certified Actuarial Analyst qualification;
- Apprentices will also be required to pass the Institute and Faculty of Actuaries' Online Professional Awareness Test
- Coverage of Standard not met by any of the above

It is recommended that all the knowledge assessment modules are undertaken to prepare the apprentice to take the pre-requisite exams. The exam should be the only pre-requisite to getting through the gateway to final assessment.

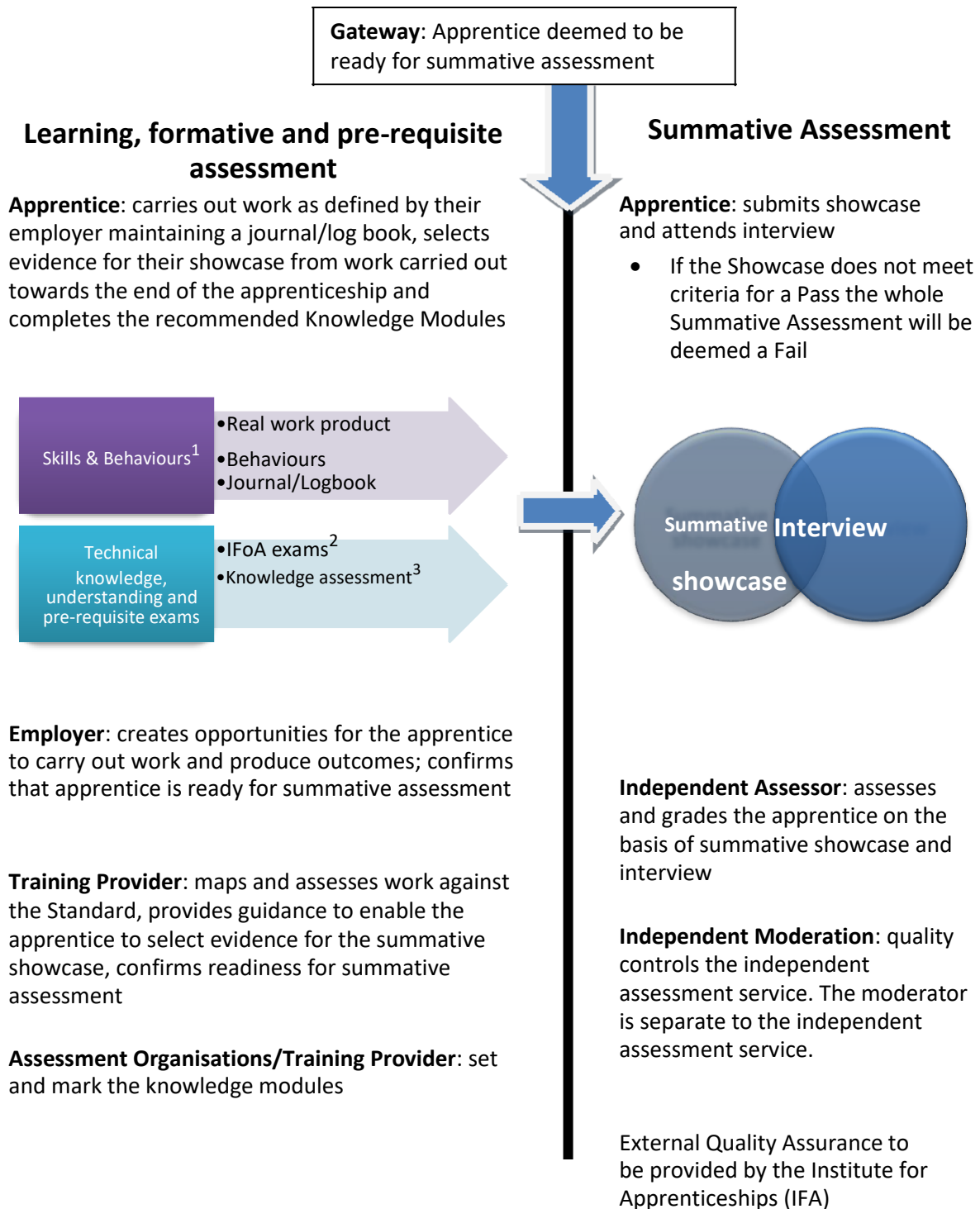
A final summative assessment, completed in the last few months of the apprenticeship, including two elements – undertaken by one of team of Independent Assessors;

- A summative showcase - containing evidence from 1 or more real work products which have been completed during the apprenticeship, usually towards the end, and which, taken together (with supporting documentation such as compliance checks, record of internal audit, manager/client feedback, log book of activity), cover the totality of the standard
- A structured interview - exploring what has been produced in the portfolio, how it has been produced and how they have performed in their role during the apprenticeship

Independent assessors will assess and grade the final assessment and will decide whether to award successful apprentices with a Pass or Distinction. All independent assessors will go through a training process to ensure consistency across the team. They will be expected to attend standardisation meetings and all apprentices' work will go through a moderation process which will be carried out by a panel consisting of representatives from employers, IFoA and the selected assessment organisation and training providers..

The approach is illustrated in the following diagram and then described in detail in the rest of the plan.

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment



1 Created when an apprentice carries out a complete and/or discrete piece of work, having first learned and applied the relevant skills/competencies and behaviours and the work is done to a satisfactory standard

2 Mapped against the knowledge assessment to allow exemptions against knowledge modules

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### 2. Formative and pre-requisite assessment

The apprenticeship will typically take 2 -3 years to complete, but an apprentice is unlikely to be in a position to undertake the summative assessment before they have completed 18 months to ensure they have had the opportunity to develop all areas of the Standard. A robust process of formative assessment will ensure that apprentices make good progress towards the final summative assessment, which itself will be of sufficient quality to attest to the level of skills, knowledge and behaviours.

Training providers will need to work closely with the employer to plan and deliver support, training and assessment appropriately. This approach focuses the relationship on those things that add value to the employer as it centres on real work competencies demonstrated in a real work environment.

- Employers will use their normal performance management processes to monitor the progress of the Apprentice, provide feedback and guide development.
- Training providers will support this by ensuring that the requirements of the apprenticeship are reflected in these processes, and by filling any gaps through their work with apprentices.
- Employers and training providers will carry out joint reviews of progress at regular intervals, involving apprentices, line managers and others directly involved, e.g. mentors, workplace coaches, etc. They will agree how any issues are to be resolved.
- It is recommended that apprentices take modular knowledge assessment to obtain the technical knowledge and understanding to prepare them for the pre-requisite exams.
- Apprentices will be encouraged to develop and maintain examples of their work throughout their apprenticeship, which may be used as part of the Summative Showcase.

The decision as to when the apprentices are ready to pass through the **Gateway** from learning and formative assessment into the summative assessment phase will be made by the employer and the training provider based on their monitoring of apprentices' progress. The exam should be the only pre-requisite to getting through the gateway to final assessment.

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### 3. Knowledge assessment

The recommended modular knowledge assessment measures the technical knowledge and understanding as set out in the Standard, and as further expanded in the Occupational Brief (Appendix One). In totality, these modules will cover the full range of the required knowledge and understanding the apprentice will need to prepare them for the pre-requisite exams. The knowledge modules will be developed against the Standard and mapped against the pre-requisite professional exams. This will enable training providers to understand where additional learning may need to be provided to ensure full coverage of the knowledge areas of the Standard.

Knowledge will be assessed either by the exams or the technical training modules. In practice, it means that:

- Employers can work with the training provider to develop learning programmes based on the areas not covered by professional exams; and
- Apprentices do not have to be assessed more than once in specific knowledge areas.

The professional exams are specified in the Standard. The group of employers will review this list annually to ensure that these continue to be the most relevant. This list will be of established, widely recognised and highly valued professional exams.

The training provider and employer will agree when the professional exams and modules will be taken and the schedule for these assessments.

It is recommended that all the knowledge assessment modules are undertaken to prepare the apprentice to take the pre-requisite exams. The modules will be developed from the Occupational Brief.

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### 4. Final summative assessment

This takes place in the last two or three months of the apprenticeship, using two assessment methods:

- Summative showcase
- Interview

#### 4.1 Summative showcase

In the summative showcase, apprentices present evidence from real-work product that is likely to have been completed towards the end of the apprenticeship, illustrating the application of knowledge, skills and behaviours.

The evidence contained in the showcase will comprise of complete and/or discrete pieces of work that covers the totality of the Standard. Note this could be one or more pieces of evidence depending on job role and profession and type of work they get involved in during the apprenticeship. These pieces of work will be produced by the apprentice having first learned and applied the relevant skills/competencies and behaviours. It will showcase their very best work, enabling them to demonstrate how they have applied their knowledge and understanding in a real-work environment to achieve real-work objectives.

The work submitted to the showcase should be supported by the journal/log book and any other relevant material to show how an apprentice has demonstrated the behaviours, especially around contact with others, team work and areas where they have exceeded the requirements of the role. This can be in the form of manager's report, emails, customer comments, peer review, etc.

Employers and training providers will assist the apprentice to develop their showcase to ensure that the summative showcase is complete, that it covers the totality of the Apprenticeship Standard and has been done to a satisfactory standard. Wherever possible, this will be an e-portfolio or other electronic platform.

The completed showcase will be assessed by an independent assessor who makes their own judgement on the quality of the work. The independent assessor may also note particular aspects of the work that they wish to discuss with the apprentice during the interview, either to confirm their judgement and/or provide further information on which to base their grading decisions.

If the Summative Showcase in its entirety **does not** contain sufficient evidence to meet the Standard then it will be deemed to be a **Fail** and the Interview **will not** take place. As the interview outlined below will be based on the showcase, this allows a safeguard to ensure that the work is that of the Apprentice. Given the technical nature and specialisms it will be evident through the discussion if it's their own work and how much input they have been given from others.

#### 4.2 Interview

The interview is a structured discussion between the apprentice and their independent assessor, focusing on the summative showcase and how they have performed during the apprenticeship. It covers both what the apprentice has done, and the standard of their work, and also how they have approached the work. This enables the assessment to cover a broad range of knowledge and understanding, skills and behaviours, such as

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- Thinking and problem-solving skills;
- Customer, stakeholder and client relationships;
- Communication skills; and
- Business and commercial understanding.

The behaviours are described in more detail in the Occupational Brief, together with examples of how they can be explored during the interview.

The purpose of the interview is to:

- Clarify any questions the independent assessor has from their assessment of the summative showcase;
- Confirm and validate judgements about the quality of work;
- Explore aspects of the work, including how it was carried out, in more detail;
- Provide a basis for the independent assessor to make a holistic decision about the grade to be awarded.

A structured brief will be developed for the independent assessor to support the discussion. This will ensure that consistent approaches are taken and that all key areas are appropriately explored.

### 5. Ensuring independence

Independence and impartiality are achieved through the final summative assessment being undertaken by an independent assessor sourced by IFOA. In addition the final External Quality Assurance will be provided by the Institute for Apprenticeships (IFA) to ensure independence.

The independent assessor will make a holistic assessment of each apprentice's work, including the grade to be awarded, on the basis of evidence supplied in the summative showcase and through the interview. The IFOA will ensure that the independent assessors provide a consistent, objective and independent approach. The IFOA and group of employers will be responsible for the moderation. This manages any risk around a single assessor approach. The key objective of using the IFOA is that through their membership they have the professional's with the relevant experience and knowledge to make the assessment.

Employers are not expected to be part of this process for their own apprentices and will not be required to make any grading judgement. Some employers may wish to volunteer staff to be Independent Assessors. This will be managed by the IFOA. Any organisation that wishes to be an independent assessment service in this area will be required to be moderated by the group of employers and IFOA. Given the technical elements of the Apprenticeship this structure was agreed by the group of employers to ensure standardisation and consistency.



## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### 6. Delivering consistent, reliable judgements

The assessment methods described above are designed to produce assessment outcomes that are consistent and reliable, allowing fair and proper comparison between apprentices employed in different types and sizes of organisations. The processes described in this section are designed to ensure the consistent application of the assessment processes and Standard.

The Apprenticeship Standard defines what is required in terms of skills, knowledge and behaviours. Our approach puts the Standard at the heart of the assessment process, ensuring that judgments on occupational competence are consistent and that there is standardisation and comparability between employers.

The group of employers working with the professional body (IFoA), will develop specifications for the tools, materials and techniques to be used in assessment and will specify the skills and experience required by independent assessors. These measures will provide the necessary confidence that those undertaking assessment have the necessary skills and industry knowledge to make reliable judgements. The tools developed will be validated by the group of employers.

There will be a range of employer-defined requirements and criteria for assessment organisations and training providers including

- Proposed tools and materials to deliver the assessments
- Experience in delivering assessments
- Sector knowledge and understanding
- Credibility within the sector
- Capability and sector experience of their staff
- Internal verification processes
- Employer responsiveness
- Customer service processes
- Training and development plans
- Leadership and management arrangements
- Infrastructure and geographical coverage
- Quality assurance and quality control procedures
- Strategic and business plans

The group of employers will review the assessment organisations to make sure that their services meet the employer-defined requirements and that they can deliver the required assessment services for these apprenticeships. This review will ensure that everyone involved in assessments has a consistent approach and operates at the required standard.

Once these organisations have been selected they will work collaboratively to develop the assessments and supporting materials, including documented criteria for the use of each assessment tool. These tools will be standardised and approved by the group of employers before being trialled, tested and then approved for implementation. Particular attention will be paid to ensure that the tools are consistent and produce comparable results.

Independent assessors through the IFoA will be required to be trained and approved in the use of the assessment tools. They will be provided with supporting information to help ensure that all

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

assessments are completed consistently and against the specification. The selected assessment organisations will be required to have robust internal quality assurance and verification processes to ensure that the quality, consistency and validity of assessments are maintained. The group of employers will convene regular standardisation meetings between the selected assessment and training providers

The group of employers with the IFoA will carry out moderations which will monitor and control the quality of the independent assessment services and will participate actively in the standardisation meetings. This will ensure that there is a clear 'line of sight' between the apprenticeship Standard, set by employers, and the moderation of assessments against the Standard, to make sure that what employers have specified is actually delivered.

Moderation will be in place for all apprentices and will check that assessments are robust, that they assess fully against the Standard, that they are undertaken consistently and to the same standard, and that the people undertaking the assessments have the skills and industry experience required and the appropriate training.

Immediate and appropriate corrective and remedial actions will be taken where any quality concerns are identified or raised.

### 7. Delivering accurate, valid judgements

The assessment process has been developed specifically for the Standard and is designed to test the totality of the Standard.

The combination of two assessment methods in the final summative assessment ensures that the assessment of each apprentice is based on their performance and reflects accurately the quality of their work and the application of skills, knowledge and behaviours specified in the Standard.

Taken together, the two components of the final summative assessment build a cumulative picture of performance against the Standard. They require apprentices to demonstrate the application of skills, knowledge and behaviours in an integrated manner to deliver the required outcomes, enabling the independent assessor to make a holistic judgement about how well the apprentice meets or exceeds the Standard.

- The summative showcase is based on a small number of real-work products which, taken together, cover the totality of the Standard, and provides a demonstration of the application of knowledge and competence in the work environment. This is a key factor for employers in the validity of the final assessment decision.
- The interview with an independent assessor allows apprentices to demonstrate how they have carried out their work. This again increases accuracy and validity by providing the assessor with an opportunity to assess depth and breadth in the application of underlying knowledge, skills and behaviours.

The role of the independent assessor is critical, - ensuring that assessments are only undertaken by suitably qualified and trained assessors, using approved tools and materials, with documented criteria, as well as robust internal verification and quality control processes. This will be overseen by the selected assessment organisations. A process will be put in place through agreement with the

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

employers' group to manage the situation if an independent assessor fails a showcase, and to manage any borderline cases. Please note this does not mean the employer is able to change the situation if an apprentice fails, the final decision would be with the selected assessment organisations.

### 8. Graded assessments

Independent assessors will grade apprentices using all the information gained in the final summative assessment as Pass or Distinction against defined criteria. The criteria and exemplars for assessing Pass and Distinctions will be developed by the group of employers working in partnership with employers, assessment providers, and IFoA to ensure consistent interpretation of these high-level criteria.

Grading will be based on the evidence included within the Summative Showcase and confirmed by the Interview that provides the safeguard for authenticating the Showcase as the apprentices own work. The grading will be based on how the evidence contributes to

- What the apprentice has shown they can do against the requirements of their job role
- How the apprentice has approached and the way they have completed the task(s)
- Who the apprentice has worked with demonstrating personal and interpersonal qualities they have brought to all their work relationships

Pass: Apprentice can perform at an expected level within their job role, demonstrating this through the Summative Showcase and Interview

Distinction: Apprentice can perform consistently at a significant level above the expected quality of the level, demonstrating this through the Summative Showcase and Interview

Specification for what needs to be included within the Showcase and outline of typical questions for the Interview will be provided by the group of employers and selected assessment providers to training providers on registration of Apprentices. The dimension for the grading will be developed with employers to ensure the grading approach reflects

- What constitutes an outstanding employee: someone who is not just good, but also has the potential to improve quickly and someone who is not just perfectly confident and fully capable of doing the job, but someone who regularly goes that bit beyond
- Market value to the sector: what employers across the sector as a whole would constitute as an outstanding and exemplary employee, demonstrated in a way that is transferable across employers

Employers are not expected to be part of this process for their own apprentices and will not be required to make any grading judgement. Some employers may wish to volunteer staff to be Independent Assessors.

The moderation service will validate and verify the assessments and the grades awarded by different assessors to ensure that these are fair and comparable. In the event of an appeal against the grade awarded, the selected assessment organisations will carry out an independent review of the evidence to confirm or modify the grade in line with their standard complaint procedures.

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### 9. Affordability

This apprentice standard is a new scheme and therefore we have no direct comparison to review when considering costs. The group of employers has, however, considered costs and the most appropriate form of assessment in great detail. A key driver for our assessment model has been to ensure our approach is consistent and directly linked to our standards. Our assessment process is robust, and will ensure the best use of management time. The costs and practicality of assessments have been an important consideration in the development of this approach, and at this stage we do not anticipate high numbers. This has resulted in an approach which will be very easy to manage in all firms regardless of size or numbers of apprenticeships.

Cost effectiveness has been increased in a number of ways, including

- A recommended modular approach, which is flexible and recognises knowledge assessed through vendor and professional qualifications
- The pragmatic combination of assessment methods ensures breadth, validity and reliability to satisfy the assessment requirements whilst minimising additional, non-value adding assessment costs
- The removal of the current requirements for the collection of unnecessary evidence throughout the duration of the apprenticeship by focusing on summative assessment
- The involvement of the employer in defining the work projects reduces the need for multiple visits by assessors

### 10. Manageability/Feasibility

This approach maximises the employer involvement, and the use of e-portfolio and log book will ensure that cost to deliver and assess is reasonable. The final assessment makes use of professionals from the industry, and while it is more expensive than the External Verification Assessors (EQA) of current qualifications, they can be based anywhere in the country and use technology to undertake interview or review the portfolio and logbook. Again, the emphasis is on managing costs.

The use of technology is key to the delivery of the apprenticeship to allow for real time progression monitoring and allow for learner development through reflective log book that can be reviewed on-line. Training providers operate on a national basis, so are able to provide the training input where required and are used to managing apprentices in remote locations. The Assessment service have processes in place to manage the Independent Assessors, having experience in working with contracted staff in similar roles across a range of industries with its EQAs.

## Actuarial Technician Trailblazer Apprenticeships: Summary of Approach to Assessment

### 11. Professional Body Registrations

The IFoA, is the professional body representing this standard. They have worked alongside the employer group to develop the Standard and also the assessment approach. The apprentice standard will be recognised by the IFoA, however at present, it is not possible to give the apprenticeship professional body accreditation in its own right; however, they will be able to have student membership of the IFoA. This gives them professional membership status as outlined in the standard.

## Implementation Plan

The approach to development and implementation will continue to be informed by close consultation with assessment organisations, training providers, awarding organisations and professional bodies, as well as other assessment specialists.

The group of employers will work closely with all of those involved in the development and delivery of training and assessment to learn any early lessons, to identify any required remedial actions and to share best practice. The following table shows the key milestones:

	2014	2015												2016
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
<b>Occupational Brief</b>														
Finalise occupational briefs	√													
<b>Knowledge Assessment</b>														
Finalise required professional exams	√													
Group of employers alongside assessment and training providers to develop knowledge assessment modules against standard requirements				√										
Group of employers alongside assessment and training providers to map exemptions with professional exams				√										
Employers approves knowledge assessments (other than IFoA exams)						√								
Employers test and trail of knowledge modules (other than IFoA exams)							√							
Knowledge assessment available for use														
<b>Summative showcase</b>														
Group of employers alongside assessment and training providers develop the specification for the summative showcase							√							
Group of employers IFoA and develop specification detail of grading criteria. This will be reviewed and signed off by the group of employers.							√							

	2014	2015												2016
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
<b>Interview</b>														
Group of employers alongside assessment /training providers and IFoA develop specification for structured interview								√						
Group of employers alongside assessment /training providers and IFoA develop techniques and materials for interviews											√			
Employers approve interview processes and materials											√			
Employers test and trial interview processes												√		
Interviews ready for use														Apr '16
<b>Assessment Services</b>														
IFoA and Employers develop and finalise specification for services					√									
<b>Moderation Services</b>														
Group of employers alongside assessment organisations/Training Providers and IFoA develop specification for moderation services					√									
Group of employers alongside assessment organisations/ Training Providers develop delivery arrangements for moderation services					√									
<b>Certification and Registration</b>														
IFoA finalise the process for professional registration					√									
<b>Apprenticeship Starts</b>														
										√				

# **Actuarial Trailblazer Apprenticeship Approach to Assessment: Summary- Appendix One Occupational Brief**

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# 1 Introduction

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It is recognised that an Actuarial Technician may work in a variety of different roles and this standard allows for the technician to demonstrate full range of skills across a variety of businesses. The primary role of an Actuarial Technician should enable them to demonstrate competencies in;

- Practical numeracy
- Quality service delivery
- Working with clients, colleagues and stakeholders
- Prioritisation of work
- Data extraction and manipulation
- Actuarial techniques (some aspects will be supervised) using relevant processes and principles
- Using relevant technology
- Understanding of relevant industry regulations

The employer, apprentice and training provider should undertake a programme that will meet the Standard Criteria to ensure all areas of the outcomes are covered in the apprentice job role. Parties should then identify tasks and select relevant projects that will meet the outcomes and complete an assessment plan.

Training providers should be evaluated and approved by Assessment Organisation using appropriate industry specialist.

## **Typical Job Roles**

The Actuarial Technician standard is designed for apprentices performing an actuarial technician role within business areas such as pensions, investments, health, insurance, risk and wider actuarial fields.

## **Assessment**

*Formative* review by employer and training provider – providing evidence of readiness to take the Summative Assessment;

- Professional qualifications from Institute and Faculty of Actuaries (IFoA)
- Phased Knowledge based tests
- Continuous progress through development of Portfolio of Evidence and Journal/Log Book

*Summative* reviewed and graded by the independent assessor – must provide evidence that all of the Standards have been met;

- Summative Showcase
  - real work product (1 or more examples)
  - journal/log book
  - supporting documents as required (emails, manager/peer review, client feedback, etc.)
- Interview
  - based on the Summative Showcase (this would be real work evidence from within the employer)
  - include questions around journal/log book and other supporting material
  - designed to gain an all round picture of the Apprentice and confirm initial grading judgement from the Showcase
- Grading – Pass and Distinction
  
- Independent assessors
  - managed by the Assessment Organisation and provided by Institute and Faculty of Actuaries (IFoA)
- Moderation service to be defined and operated by Assessment Organisation and) IFoA
- Electronic journal/log book to be utilised either provided by assessment service, training provider or employer

### **Certification**

Certification is claimed at the end of the apprenticeship when all components are complete. The relevant documents will then be required to be uploaded onto the ACE system for confirmation prior to the apprenticeship certificate being issued.

### **IFoA recognition**

Apprentices will be accepted as student members of the Institute and Faculty of Actuaries, which will provide them with the opportunity to develop as an Actuary or Certified Actuarial Analyst

### **Appeals**

In the event of an appeal against the grade awarded, the Assessment Organisation will carry out an independent review of the evidence to confirm or modify the grade.

The table below lists the competency requirements that are examples of what an Apprentice will need to cover to become an Actuarial Technician. It is not intended that the list is used as a pro-forma curriculum. Each provider will have its own approach to delivering the programme, but all outcomes for the standard must be covered.

**Typical information we need to gather relevant to their role:**

- Demonstrate understanding of actuarial techniques; can plan the use of actuarial techniques; can implement actuarial techniques; can apply actuarial techniques
- Understands and can support reasonableness tests; can manage their own workload
- Can gather and record data as required for use in their role; can isolate a/the problem
- Can accurately record and document a/the problem and take or suggest corrective action
- Ability to identify where problem is not fixed and return to start conditions
- Demonstrate knowing what process to follow to escalate problems

1. Skills	
Outcome	Examples to meet outcome
<p><b>Practical Numeracy</b> The ability to analytically and logically apply numerical techniques to given requirements and understand basic actuarial principles and calculations e.g. to review the claim reserve pool for an insurance company to ensure they have sufficient funds.</p>	<ul style="list-style-type: none"> <li>➤ Apply actuarial techniques relevant to their job role and clients' requirements</li> <li>➤ Understand and apply mathematical concepts such as discounting and compounding of interest / inflation</li> <li>➤ Able to select and apply relevant formulae to solve specific problems</li> <li>➤ Understand cash flows, their purpose and how to use them to solve problems</li> <li>➤ Able to analyse and summarise data (which can often be in very large volumes)</li> </ul>

Outcome	Examples to meet outcome
<p><b>Quality Service Delivery</b> Taking responsibility for assigned tasks, planning and delivering results to a high standard and within the required timescales, and adapting to new requests or unforeseen events, e.g. avoiding errors and omissions when working under pressure to ensure that clients receive the best results.</p>	<ul style="list-style-type: none"> <li>➤ Able to undertake basic project or task management and take ownership and responsibility for the delivery of own work</li> <li>➤ Able to multitask effectively and prioritise work to deliver required outcomes</li> <li>➤ Understand Service Level Agreements (SLA) – company standard or on a project-by-project basis</li> <li>➤ Able to check work thoroughly highlighting real/potential errors</li> <li>➤ Ability to perform effective “reasonableness tests”</li> <li>➤ Able to assess risk to understand the implications of either getting things wrong or the possibility of misinterpretation of advice given, and how best to avoid these possibilities</li> <li>➤ Able to deal with variety of clients and work types</li> <li>➤ Able to present work outputs and explain the actions/processes that were used to reach them</li> <li>➤ Able to provide and maintain audit trail to support actions</li> </ul>
<p><b>Clients, Colleagues and Stakeholders</b> Maintaining high levels of service standards, internally and externally. An awareness of clients’ needs and an understanding of the importance of maintaining a relationship with the client and the need for the company to benefit financially from the services offered e.g. responding promptly to client queries.</p>	<ul style="list-style-type: none"> <li>➤ Adapts own work to the working style of colleagues and clients</li> <li>➤ Able to meet the deadlines set by various stakeholders</li> <li>➤ Ensures own work is delivered in a timely manner and is accurate</li> <li>➤ Able to work with colleagues and (where required) external parties at all levels</li> <li>➤ Understand the importance of open communication and progress updates within a team to ensure project deadlines are met</li> <li>➤ Take account of the client charging mechanisms of the organisation when undertaking work for specific clients and set priorities/timescales accordingly</li> <li>➤ Begin to understand the value of the work completed</li> <li>➤ Able to manage expectations and provide solutions where deadlines have or cannot be met</li> <li>➤ Able to communicate results to a technical and non-technical audience</li> </ul>

Outcome	Examples to meet outcome
<p><b>Prioritisation</b> Working in an organised manner with attention to detail in order to deliver good outcomes for the business e.g. working on a number of different actuarial/technical projects at the same time with different clients and deadlines.</p>	<ul style="list-style-type: none"> <li>➤ Able to manage time using appropriate techniques</li> <li>➤ Able to project manage to handle multiple and potentially different tasks for a number of or single client(s) and manages work by setting priorities/timescales</li> <li>➤ Demonstrates attention to detail to provide information for the client to the level of detail required</li> <li>➤ Ability to check their own work to ensure it meets client requirements within project deadlines</li> </ul>
<p><b>Data Extraction and Manipulation</b> Obtaining, analysing, modelling and interpreting data to solve actuarial challenges e.g. understanding previous motor claims to work out the next year's premium.</p>	<ul style="list-style-type: none"> <li>➤ Able to interpret output of mathematical calculations</li> <li>➤ Able to use ICT tools for activities that are liable to be complex and non-routine, devising solutions as required</li> <li>➤ Able to check data and information received to identify gaps and assess suitability for completing the task required</li> <li>➤ Understand and be able to carry out key processes of actuarial valuations as part of a team or under supervision appropriate to the level of their role and organisation</li> <li>➤ Able to compare data from different periods of time to interpret and present results, drawing conclusions, identifying past trends and adjusting for these if necessary</li> <li>➤ Select and use specific models to manipulate and analyse data appropriate to the project</li> <li>➤ Able to define and understand what should be expected from the results</li> <li>➤ Provide solutions to overcome areas of missing data, such as the use of averages, and estimate the possible impact of such solutions on the final results of the project</li> <li>➤ Able to interpret results in a general business context</li> <li>➤ Able to communicate results to a technical audience</li> </ul>

## 2. Technical knowledge and understanding

Outcome	Examples to meet outcome
<p><b>Actuarial Techniques</b> A broad knowledge of actuarial techniques relevant in the appropriate industry (pensions, insurance or investment) e.g. carrying out financial and mortality projections in order to estimate the future cashflows from a client's pension scheme.</p>	<p><b><u>General Techniques</u></b></p> <ul style="list-style-type: none"> <li>➤ Understands the theory of projecting cashflows based on assumptions including the probability of particular outcomes happening</li> <li>➤ Understands the life expectancy model / basics of longevity i.e. understand individual life expectancy and how to apply survival probabilities.</li> <li>➤ Understands the need for different assumptions for different projects, products and customers</li> <li>➤ Understands how to use a variety of calculations and why each may fit a particular product or project.</li> <li>➤ Understands assumptions made when inputting a variety of information</li> <li>➤ Understand the limitations of the modelling approach chosen.</li> <li>➤ Understands the difference between "best estimate" and "prudent" or conservative assumptions for valuing cashflows and when each may be suitable for use.</li> <li>➤ Can demonstrate understanding of the sensitivity of results to the key inputs to actuarial work: the model used, the data input and the (individual and as a group) assumptions made</li> </ul> <p><b><u>Pensions</u></b></p> <ul style="list-style-type: none"> <li>➤ Understands the concept of an annuity and how it is calculated</li> <li>➤ Understands the principles used to calculate transfer values and the circumstances when these might be requested/required</li> <li>➤ Understands how to analyse membership data</li> </ul>

Outcome	Examples to meet outcome
<p><b>Actuarial Techniques / continued</b></p>	<p><b><u>Insurance</u></b></p> <ul style="list-style-type: none"> <li>➤ Understand how to project paid and incurred claim values to estimate claim reserves</li> <li>➤ Understand standard actuarial techniques to estimate claim values, such as the chain ladder or BF method</li> <li>➤ Understand how to calculate and interpret claim loss ratios</li> <li>➤ Understand how to validate a capital model</li> <li>➤ Understand the use of GLMs (Generalised Linear Models) in pricing policies</li> <li>➤ Understand the use of claims triangles and projection methods in calculation of the reserves</li> </ul>
<p><b>Process and Principles</b>            Technical knowhow and general awareness of the impact of the various actuarial concepts, models and approaches, e.g. how changing the assumptions into a model (such as future rates of inflation) affects the output, which may be the level of premiums for an insurance policy.</p>	<ul style="list-style-type: none"> <li>➤ Understands the importance of accurate base data</li> <li>➤ Understands the significance of assumptions when developing/using a model</li> <li>➤ Understands the impact of changing specific assumptions</li> <li>➤ Understands the context of their role, as an Actuarial Technician, in the wider industry</li> <li>➤ Understands the organisations processes and systems to be used in their role and is able to use them effectively</li> <li>➤ Able to apply the actuarial techniques in their work and in line with company procedures</li> <li>➤ Understand and is able to use models rather than just individual calculations, but understands and can identify when the use of a complex model may not be the best solution</li> <li>➤ Understand how the data input can affect the outcome of the analysis</li> </ul>

Outcome	Examples to meet outcome
<p><b>Technology</b> A good understanding of how actuarial software, technology and tools can be used to provide answers and solutions to clients, e.g. using Microsoft Excel to manipulate large data sets.</p>	<ul style="list-style-type: none"> <li>➤ Able to use ICT tools for activities that are liable to be complex and non-routine, devising solutions as required</li> <li>➤ Able to use specialist or bespoke software required within their role</li> <li>➤ Able to use word processing and presentation software to produce clear and accurate communications (e.g. reports, correspondence) in required format by either internal or external clients</li> </ul>
<p><b>Industry Regulation</b> A broad understanding of the structure of the Financial Services market, the Institute and Faculty of Actuaries, and the professional requirements and regulatory environment in which they operate.</p>	<ul style="list-style-type: none"> <li>➤ Understand and work within the professional regulatory requirements of their job role</li> <li>➤ Able to explain the impact of regulatory framework(s) on their job role</li> <li>➤ Demonstrates their continuous professional development and how they will maintain this in the future</li> <li>➤ Understand and demonstrates their ability to work within the Actuaries Code of Conduct</li> <li>➤ Understand money laundering regulations and when and how they need to be applied</li> <li>➤ Understand and comply with data protection legislation</li> <li>➤ Keep up to date with relevant current regulatory issues.</li> </ul>



3. Occupational Behaviours		
Description	Attributes to be explored	Assessment techniques
<i>A. Thinking and developing solutions</i>		
Apprentices should demonstrate an ability to solve problems using logical and creative thinking using actuarial techniques	<p>a. Logical thinking:</p> <ul style="list-style-type: none"> <li>• Understanding initial premise(s) and preconditions</li> <li>• Analysing situations from known facts</li> <li>• Recognising the conclusion to be reached</li> <li>• Proceeding by rational steps</li> <li>• Evaluating information, judging its relevance and value</li> <li>• Supporting conclusions, using reasoned arguments and evidence</li> </ul> <p>b. Creative thinking:</p> <ul style="list-style-type: none"> <li>• Looking at situations from a fresh perspective</li> <li>• Exploring ideas and possibilities</li> <li>• Making connections between different aspects</li> <li>• Questioning assumptions</li> <li>• Generating solutions that may be imaginative or unconventional</li> <li>• Devising new approaches</li> <li>• Adapting ideas and approaches as conditions or circumstances change</li> </ul> <p>c. Problem-solving:</p> <ul style="list-style-type: none"> <li>• Analysing situations</li> <li>• Defining goals</li> <li>• Developing solutions</li> <li>• Prioritising actions</li> <li>• Dealing with unexpected occurrences</li> </ul>	<p>Behavioural questioning, e.g. :</p> <ul style="list-style-type: none"> <li>• Tell me about how you approached this task.</li> <li>• Describe the approach that would be taken for a theoretical task (specific to industry/employer)</li> <li>• How did you recognise the problem?</li> <li>• Give me an example of thinking differently about a task.</li> <li>• Describe a decision that you made using a logical approach.</li> <li>• How did you overcome a challenge that arose mid way through a task/project?</li> </ul>
<i>B. Commitment and enthusiasm</i>		
Apprentices should demonstrate a passion and desire for a career in the actuarial profession and a drive to succeed at everything they do, so that they deliver the best results for the business	<p>a. Positive approach;</p> <ul style="list-style-type: none"> <li>• Understanding their role in the organisation and its importance</li> <li>• Proactively keep updated with changes happening in their relevant sector which will have potential impact on their job role</li> <li>• Making the most of internal and external networking opportunities and any buddy/mentoring relationships in order to develop knowledge and skill set</li> <li>• Looking to develop skills and gain knowledge for personal/business improvement</li> <li>• Reviewing own work to better develop themselves</li> </ul>	<p>Commitment questioning, e.g.:</p> <ul style="list-style-type: none"> <li>• How have you worked with other teams or individuals to understand your role?</li> <li>• Describe the ways you have used your mentor/coach/manager to develop your skills and knowledge.</li> <li>• What processes do you go through to ensure you deliver your best work?</li> </ul>

### 3. Occupational Behaviours

Description	Attributes to be explored	Assessment techniques
<p><i>C. Working with others</i></p> <p>Apprentices should demonstrate the ability to develop collaborative and productive relationships by sharing information, effectively building on the ideas of others and proactively seeking work to support other members of the actuarial and non-actuarial</p>	<p>a. Managing relationships:</p> <ul style="list-style-type: none"> <li>• Understanding the value and importance of good relationships</li> <li>• Adopting a way of working that maintains and improves relationships</li> <li>• Involving other people in decisions and actions</li> <li>• Influencing others by listening to and incorporating their ideas and views</li> <li>• Acknowledging other people’s accomplishments and strengths</li> <li>• Overcoming barriers that prevent productive action</li> <li>• Managing conflict constructively</li> <li>• Promoting teamwork by encouraging others to participate</li> </ul> <p>b. Stakeholder relationships:</p> <ul style="list-style-type: none"> <li>• Understanding who they are and what their ‘stake’ is</li> <li>• Establishing contact with customers/clients and keeping in touch</li> <li>• Keeping customers/clients informed (‘no surprises’)</li> <li>• Understanding their requirements, including constraints and limiting factors</li> <li>• Setting reasonable expectations</li> <li>• Involving them in decisions and actions (‘co-production’)</li> <li>• Interacting positively with them</li> <li>• Communicating in different ways</li> <li>• Providing a complete answer in response to queries (‘transparency’, ‘full disclosure’)</li> <li>• Actively seeking feedback</li> <li>• Prioritising stakeholders in terms of their importance, power to affect the task and interest in it</li> <li>• Using stakeholders’ views to shape projects early on</li> <li>• Gaining support from stakeholders, e.g. to win resources</li> <li>• Agreeing objectives</li> <li>• Managing expectations</li> </ul>	<p>Process questioning, e.g. :</p> <ul style="list-style-type: none"> <li>• What are the most important ways that you have found to manage relationships in your work?</li> <li>• Who do you manage relationships with?</li> <li>• What do stakeholders respond to well?</li> <li>• In what ways do you try to make relationships with customers and clients more productive?</li> <li>• What are the main differences between types of stakeholder?</li> <li>• How do you manage the various stakeholders?</li> </ul>

### 3. Occupational Behaviours

Description	Attributes to be explored	Assessment techniques
<p><i>D. Communicating effectively</i></p> <p>Apprentices should demonstrate the ability to use effective communication techniques to build rapport with a range of colleagues and clients, e.g. using positive questioning and active listening to be able to communicate technical actuarial content in a non-technical manner.</p>	<p>a. Intention/purpose:</p> <ul style="list-style-type: none"> <li>• Understanding the purpose of communicating in a particular situation or circumstance (e.g. inform, instruct, suggest, discuss, negotiate etc.)</li> <li>• Checking that the person/people with whom one is communicating also understand the purpose</li> <li>• Being sensitive to the dynamics of the situation</li> <li>• Being aware of anything that might disrupt the effectiveness of the communication (e.g. status, past history)</li> </ul> <p>b. Method:</p> <ul style="list-style-type: none"> <li>• Knowing the range of possible communication methods (e.g. spoken, written, graphical, multimedia)</li> <li>• Choosing a good, appropriate method for the situation</li> <li>• Being aware of the limitations of the chosen method, and the possible risks of miscommunication (e.g. ambiguity)</li> <li>• Taking account of the affective dimensions of the method (e.g. body language, tone of voice, eye contact, facial expression etc.)</li> </ul> <p>c. Execution:</p> <ul style="list-style-type: none"> <li>• Expressing oneself clearly and succinctly, but not over-simplifying</li> <li>• Checking that the other person/people understand what is being expressed</li> <li>• Taking account of the potential barriers to understanding (e.g. filtering, selective perception, information overload)</li> <li>• Modifying the purpose and methods of communication during a situation in response to cues from the other person/people</li> </ul>	<p>Observation, e.g.:</p> <ul style="list-style-type: none"> <li>• Examples of written, graphical and multimedia communication in the summative portfolio and synoptic project.</li> <li>• How the apprentice communicates verbally and non-verbally during the course of the interview, including listening and responding.</li> </ul> <p>Funnelling questioning, e.g. :</p> <ul style="list-style-type: none"> <li>• Tell me about a time when you needed to communicate something important, e.g. to             <ul style="list-style-type: none"> <li>• Colleagues</li> <li>• Superiors</li> <li>• Customers/clients</li> </ul> </li> <li>• What worked well in this situation?</li> <li>• What didn't work as well as you had hoped?</li> <li>• What did you learn about communication from this situation (or any other)?</li> </ul>

### 3. Occupational Behaviours

Description	Attributes to be explored	Assessment techniques
<p><i>E. Professionalism</i></p> <p>Apprentices should demonstrate the ability to conduct themselves with honesty and integrity, and demonstrating an ability to adapt across different mediums. Role modelling positive behaviours for the employer, the actuarial apprenticeship and the actuarial profession, both understanding and complying with the principles of the Actuaries' Code.</p>	<p>a. The environment:</p> <ul style="list-style-type: none"> <li>• Knowing the 5 key principles of the Actuaries' Code and how they apply to their role and that of their colleagues.</li> <li>• Being aware of the position of the organisation in the economy and its contribution to society</li> <li>• Understanding the key external factors that shape the way the organisation functions, e.g. the need for compliance with regulation and professional requirements</li> <li>• Acting with integrity and knowing where and how to register their concerns if they are aware of any illegal or unprofessional activity at their workplace or observed elsewhere</li> <li>• Knowing how the organisation can gain advantage in the industry, e.g. through innovation, technology, customer service etc.</li> </ul> <p>b. The job:</p> <ul style="list-style-type: none"> <li>• Understanding the scope of the job role</li> <li>• Knowing what skills, knowledge and behaviours are needed to do the job well</li> <li>• Being aware of their own strengths in the job role, and any areas for improvement (under the competence and care principle)</li> <li>• Appreciating who else is important, for them to do their job and fulfil the role effectively (e.g. colleagues, managers, other stakeholders)</li> <li>• Being aware of potential risks in the job role (e.g. security, privacy, regulatory)</li> <li>• Using personal attributes effectively in the role, e.g. entrepreneurship and clear communication</li> <li>• Understanding how the job fits into the organisation as a whole</li> </ul> <p>c. The organisation:</p> <ul style="list-style-type: none"> <li>• Understanding the goals, vision and values of the organisation, and knowing how they contribute to these in their own work</li> <li>• Being aware of the commercial objectives of the tasks/ projects they are working on</li> <li>• Understanding the importance of meeting or exceeding customers' requirements and expectations</li> <li>• Being in tune with the organisation's culture</li> </ul>	<p>Factual questioning, e.g.:</p> <ul style="list-style-type: none"> <li>• What are the main risks in your work?</li> <li>• How does the regulatory environment affect what you do?</li> <li>• What are the five key principles of the Actuaries' Code?</li> <li>• When and to whom does the Actuaries' Code apply?</li> <li>• What are the organisation's commercial goals?</li> <li>• What factors are shaping your industry at the moment?</li> </ul> <p>Process questioning, e.g. :</p> <ul style="list-style-type: none"> <li>• What are the key things that make a difference to how well you do your job?</li> <li>• How do other people you work with, including customers and clients, affect the way you work?</li> <li>• What action would you take if you were asked to perform a task which you felt was beyond your level of knowledge and expertise?</li> </ul>

	<ul style="list-style-type: none"><li>• Knowing how the organisation works, including its informal culture, internal networks etc.</li><li>• Understanding how conflicts of interest can arise in actuarial work situations and how these should be dealt with (the impartiality principle).</li></ul>	
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## Actuarial Technician Apprenticeship Standard

### Occupation: Actuarial Technician

The actuarial profession is a diverse sector which involves the management of uncertainty and risk to help clients, both internal and external, meet their objectives. Actuarial teams build mathematical models to predict future financial outcomes; from setting car insurance premiums to helping people provide for retirement. The Actuarial Technician Apprenticeship is an entry level role into the industry which is supported by the Institute and Faculty of Actuaries. The apprentice will work as part of a team supporting qualified actuaries using data to provide solutions for clients. The role will develop key business skills and behaviours, including servicing clients and supporting the advice given by qualified actuaries, through a focus on “on-the-job” training whilst also studying for some professional exams. The role has been designed to support further career development within the sector.

### Occupational Profile – Duties that this role could be asked to perform:

- Data preparation and checking for accuracy
- Use spreadsheets and models to populate reports and presentations for clients
- Technical support for the wider actuarial team
- Systems development and testing
- Appropriate use of IT to complete a wide range of tasks
- Providing support for queries from clients, third parties and other business areas
- Develop an understanding of hot topics which affect the industry
- Study for professional exams
- Completion of internal and external compliance documentation

### Requirements:

Knowledge	What is required
Actuarial Techniques	A broad knowledge of actuarial techniques relevant in the appropriate industry (pensions, insurance or investment) e.g. carrying out financial and mortality projections in order to estimate the future cashflows a client’s pension scheme.

<b>Processes and Principles</b>	Technical know-how and general awareness of the impact of the various actuarial concepts, models and approaches, e.g. how changing the assumptions into a model (such as future rates of inflation) affects the output, which may be the level of premiums for an insurance policy.
<b>Technology</b>	A good understanding of how actuarial software, technology and tools can be used to provide answers and solutions to clients, e.g. using Microsoft Excel to manipulate large data sets.
<b>Industry regulation</b>	A broad understanding of the structure of the Financial Services market, the Institute and Faculty of Actuaries and the professional requirements and regulatory environment in which they operate.

<b>Skills</b>	<b>What is required</b>
<b>Practical numeracy</b>	The ability to analytically and logically apply numerical techniques to given requirements and understand basic actuarial principles and calculations e.g. to review the claim reserve pool for an insurance company to ensure they have sufficient funds.
<b>Quality Service Delivery</b>	Taking responsibility for assigned tasks, planning and delivering results to a high standard and within the required timescales, and adapting to new requests or unforeseen events, e.g. avoiding errors and omissions when working under pressure to ensure that clients receive the best results.
<b>Clients, Colleagues and Stakeholders</b>	Maintaining high levels of service standards, internally and externally. An awareness of clients' needs and an understanding of the importance of maintaining a relationship with the client and the need for the company to benefit financially from the services offered e.g. responding promptly to client queries to keep them happy.
<b>Prioritisation</b>	Working in an organised manner with attention to detail in order to deliver good outcomes for the business e.g. working on a number of different actuarial/technical projects at the same time with different clients and deadlines.
<b>Data extraction and Manipulation</b>	Obtaining, analysing, modelling and interpreting data to solve actuarial challenges e.g. understanding previous motor claims to work out the next year's premium.

<b>Behaviours</b>	<b>What is required</b>
<b>Commitment and Enthusiasm</b>	A passion and desire for a career in the actuarial profession and a drive to succeed at everything they do, so that they deliver the best results for the business.
<b>Working with others</b>	The ability to develop collaborative and productive relationships by sharing information, effectively building on the ideas of others and proactively seeking work to support other members of the actuarial and non-actuarial team.
<b>Communicating Effectively</b>	Using effective communication techniques to build rapport with a range of colleagues and clients, e.g. using positive questioning and active listening to be able to communicate technical actuarial content in a non-technical manner.



<b>Professionalism</b>	Conducting selves with honesty and integrity, and demonstrating an ability to adapt across different mediums. Role modelling positive behaviours for the employer, the actuarial apprenticeship and the actuarial profession, both understanding and complying with the principles of the Actuaries' Code.
<b>Approach to thinking</b>	Logical thinker with the ability to problem solve through a variety of techniques.

**Duration:** The apprenticeship will typically take 2 -3 years to complete.

**Qualifications:** Apprentices will be assessed via:

- Modules 0 (Entry Exam) and 1 (Finance and Financial Mathematics) from the Institute and Faculty of Actuaries' Certified Actuarial Analyst qualification; or

Apprentices will also be required to pass the Institute and Faculty of Actuaries' Online Professional Awareness Test

**Link to professional registration:** This apprenticeship provides professional membership of the Institute and Faculty of Actuaries.

**Level:** Level 4

**Review:** The apprenticeship should be reviewed after a maximum of 3 years.