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# The Professional Test Engineer Development Programme

## Developing Apprentices & Experienced IT People into World-Class Test Engineering Experts

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## Version Management

| Version | Date                        | Author         | Comments                                  |
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| 1.0     | May 23 <sup>rd</sup> , 2019 | Bernard Melson | Revised following client workshop         |
| 1.1     | Jun 13 <sup>th</sup> , 2019 | Bernard Melson | Internal changes                          |
| 1.2     | Jul 17 <sup>th</sup> , 2019 | Bernard Melson | Minor revision following market feedback  |
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## 1 Executive Summary

Following extensive market research, this document sets out a vision for increasing the capability and competency of professional Test Engineers through a targeted learning and development programme. People passing through the programme will increase their own thinking, skills and competencies in multiple disciplines and, importantly, organisational capability to help deliver systems solutions that underpin day to day business operations.

The programme has been developed in concert with (and rolled out to) a major systems integration company that was prepared to invest significantly in learning and development to increase capability and extend its value proposition to new and existing clients alike.

The days of people having a single skill have long gone, so this cogent learning and development programme is predicated on building multi-skilled competencies within people and organisations. It will maximise staff capability and utilisation to help reduce operational costs and staff attrition rates. The basis of the programme is to provide a solid foundation from which professional testers can grow as they develop and specialise in key disciplines that both challenge and grow them.

The programme comprises five learning and development streams, each of which seeks to imbue people with multi-layered competencies that are relevant to their experience and which provide extended capability and thinking to develop cogent solutions to business problems – regardless of the development method they employ. The first stream defines a programme for apprentices and people new to testing, with the remaining four streams providing learning matched to career growth and the needs of a modern Test Practice. Each course and optional pathway within a stream has been mapped to SFIA, industry-accepted core principles, competencies and roles, as follows:

1. **Test Engineer** for apprentices and entry level staff joining the Test Practice. Courses in this stream are aligned with the Government's 'Apprenticeship Programme'
2. **Senior Test Engineers** with at least 2 years' experience who are keen to develop their test capability further by specialise in one or more test disciplines
3. **Lead Test Engineers** with at least 4 years' experience who are looking to become test managers with an additional specialism
4. **Test Architects and Consultants** with at least 5-years' experience who will be setting out the stall for major test programmes and influencing decision makers and stakeholders
5. **Test Experts** who will be driving top level strategy and methods for corporate improvement.

We recommend that each of the five streams be scheduled to run over 2 years, with each one being structured to provide staff with the right blend of practical and certificated learning to become multi-skilled, competency based testing professionals. Within each stream is:

- A series of courses that provide the necessary foundation for each person to take as part of building their general test capability and career growth;
- A series of optional courses and routes to allow an individual and Test Practice to fulfil its specialist technical needs by developing staff with cross-functional competencies
- Coaching and mentoring to help people implement and use skills learned.

To give the programme additional kudos within companies adopting the programme, we further recommend that students graduating each stream be awarded an appropriate certificate and that an overall 'Diploma of Testing Excellence' be awarded to all staff reaching streams 4 and 5.

In closing, the programme develops and prepares the professional test engineer for future roles with clients and stakeholders, each of whom can be confident in the engineer's ability to deliver for them.

## 2 Learning Modes

TSG Training offers learning in a number of different modes, each of which provides its own benefit:

- **Traditional Classroom.** Courses in this mode follow standard timetables at public and private events.
- **Accelerated Classroom:** Most ISTQB courses and some others are offered in 12-hour day format so that students can train in a shorter period of time and be available to return to normal office duties earlier. ISTQB Test Manager, for example, is offered in 3-days, rather than the 5-days in a Traditional Classroom event. These courses are intensive and people sitting them need to be prepared accordingly if they are to sit them.
- **Virtual Classroom.** Remote learning is offered to accommodate people who are distributed, either locally or globally, and who cannot attend a public course. This type of course is generally delivered to private customers and follows the Traditional Classroom format.
- **Online Learning.** A number of courses are offered online so that students can sit them where and when they want at a time of their own choosing. Access is provided to materials for 6-months

Section [A](#), Training & SFIA Cross Reference, shows a complete list of courses within the programme and the different learning modes available for each.

Every course in the programme is provided with a lifetime's support from the tutor.

### 3 Principles and Competencies of the Programme

Following our experience of learning and development programmes and research into what companies require of testing in the future, we have defined a series of ‘Principles and Competencies’ that fit the gamut and need of corporate skills required to deliver first-class systems that help underpin business operations, ranging from the raw intake through to experienced Lead Engineers, Architects, and Experts as follows:

| Principles  | Test Engineer   | Senior Test Engineer   | Lead Test Engineer  | Test Architect   | Test Expert   |
|---|---|--|---|--|---|
| <b>Engineering at the heart of designing IT solutions</b>           | Implements demonstrable and measurable, structured design techniques appropriate to the technology under Test   | Responsible for Implementing demonstrable and measurable, structured design techniques appropriate to the technology under Test, aligned to the portfolio strategies   | Responsible for the implementation of the test strategies within the scope of their portfolio / squad, aligned to the overarching Strategy.   | Accountable for strategies to allow for demonstrable and measurable, implementation of structured design techniques across the estate  | Accountable for defining and implementing methods and improvements to corporate level testing and major programmes  |
| <b>Execution excellence through engineering</b>                     | Implement automation first approaches using industry best practices, targeting appropriate strategies for robust and repeatable automation and the appropriate exploratory / manual testing of change | Responsible for the Implementation of Right Testing approaches, utilising engineered design to enable automation first approaches using industry best practices leveraging test design approaches to maximise opportunity for automation | Responsible for the Implementation of Right Testing Approaches within Squad, including principles & patterns utilising automation first approaches using industry best practices  | Responsible for the Implementation of Right Testing Approaches utilising automation first approaches using industry best practices<br>Set Test Engineering principles & patterns   | Provision and guidance for testing excellence that helps deliver programmes that meet business needs, on time and to budget   |
| <b>Velocity - Pinpoint accuracy at speed, enabled by technology</b> | Is able to implement testing best practice methods specific to the technology under Test and aware of the benefits of using them. Has real world experience of implementing these practice            | Is able to present testing best practice methods specific to the technology under Test and the benefits of using them, agnostic to specific toolsets. Has real world experience of implementing these practice                           | Is able to present testing best practice methods and the benefits of using them to a disparate audience of technical and non-technical stakeholders, agnostic to specific toolset. As well as experience of implementing these practice | Is able to present to all levels the benefits, both tangible & non-tangible, best practice methods and the benefits of using them, agnostic to toolset. As well as experience of leading teams, in implementing these best practices | Working at board level to define and present the business case for corporate improvement and rollout of methods and competencies to meet it   |
| <b>Culture, Collaboration and lifecycle continual improvement</b>   | Works within squad of multi skilled teams to discuss / challenge and inform approach for testable solutions and educating best practices in Testing and Quality                                       | Leads a team within multi skilled teams to discuss / challenge and inform approach for testable solutions and educating best practices in Testing and Quality  | Works across squads & within multi skilled teams to discuss / challenge and inform approach for testable solutions and educating best practices in Testing and Quality  | Works across the organisation to influence strategy for engineering to challenge and inform approach for testable solutions and educating best practices in Testing and Quality  | Works across the organisation to ensure the right process, methods and skills within people is in place to deliver value for money to internal and external clients commissioning new or changed systems that will underpin business operations |

This programme isn't about certification alone, but is one that provides the right blend of theory and practical learning to develop consistently skilled professional test engineers who can deliver for their stakeholders.

#### 4 The 5-Stream Programme

The professional Test Engineer career development programme contains five key streams, with each being rigorously designed and tested to reflect the principles and competencies that are key to success and growing capability within a Test Practice. Each stream interfaces seamlessly to the next to provide continuous investment in people and career growth:

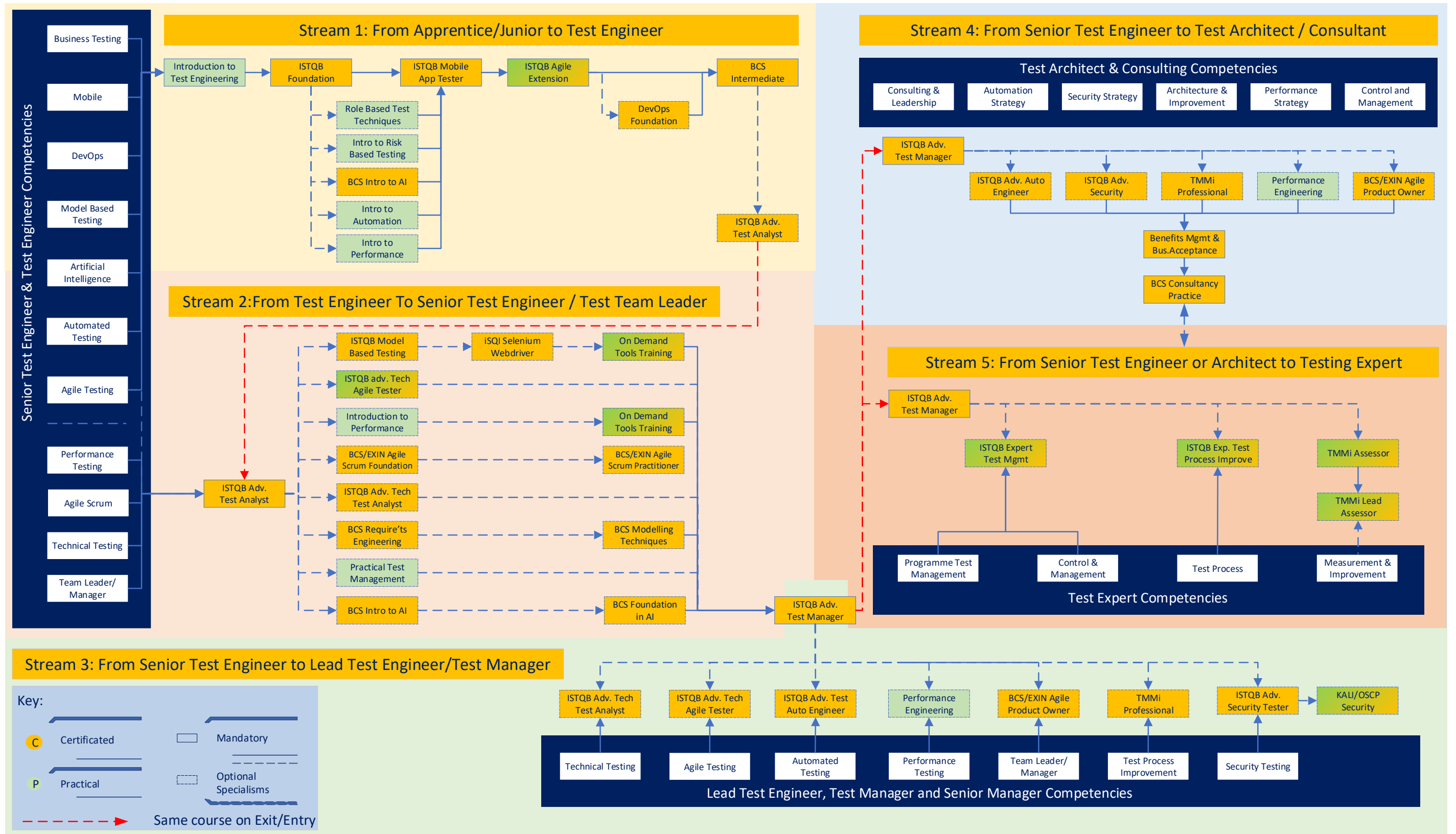


Figure 1 - The Long-Term Software Test Engineer Career Development Programme

## 4.1 The Five Key Streams

At the broadest level, each stream is designed to reflect modern test engineering principles, coupled with competencies that meet the needs of a Test Practice and varying development models, supported by capability from competent, multi-skilled individuals. The programme is designed for people to enter a learning stream that is relevant to their experience:

1. **The Test Engineer** is for apprentices and entry level staff embarking on a career in software testing, and for experienced staff from other disciplines who may be transferring in.
2. **The Senior Test Engineer** with at least two years' experience, who is ready to step up to using more advanced techniques, choosing to specialise or move to the early stages of team leadership.
3. **The Lead Test Engineer** with at least four years' experience, already specialising and needing to be ready for the demands of test management or increasingly complex technical roles.
4. **The Test Architect** with at least five years' experience, ready to make the jump to the business-critical role of defining and building test architectures for major programmes.
5. **The Test Expert** who has at least 10-years' experience of leading major programme delivery and organisational change and benefit.

## 4.2 The Test Engineer

The Test Engineer stream is designed for people with little or no software testing experience and for others with up to two years' experience who can join the stream at an appropriate point. The courses within the stream are mapped to the UK Government's Apprenticeship scheme and qualify for funding up to 90%

### 4.2.1 The Test Engineer Roadmap

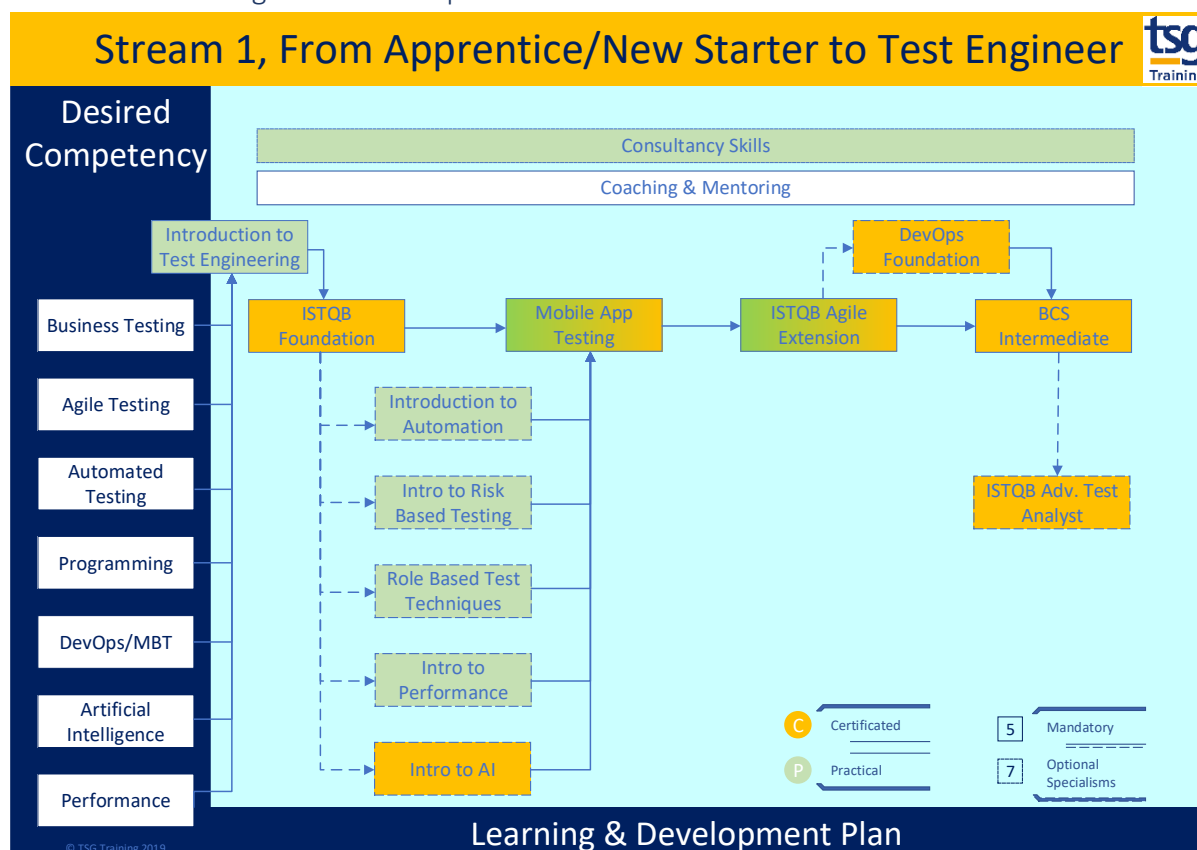


Figure 2 - The Test Engineer Capability Roadmap

The stream supports the key competencies of:

- Agile Testing
- Artificial Intelligence
- to Automated Testing
- Business Testing
- DevOps & Model Based Testing
- Performance Testing
- Programming

As can be seen in Figure 2 - The Test Engineer Capability Roadmap, there is:

- A series of mandatory courses to qualify for Government funding.
- Several optional courses to suit early specialisms.

People passing through the stream will have done so with the skills necessary to function as a Test Engineer who takes on and manages the tasks of:

- Requirements analysis and de-construction
- Test Analysis, Specification, Design, and Execution
- Test Reporting.

The skills learned are relevant and portable to all development methods.

Note: Unless someone is transferring into a Test Practice who has no software testing experience, we envisage the Test Engineer role being the only one of the five to be eligible for 'Government Apprenticeship Funding' in full.



#### 4.2.2 Test Engineer Learning & Development Narrative

| Test Engineer Learning & Development        | Mandatory | Days | Pre-Requisites |  | Rationale   |
|---|-----------|------|----------------|--|---|
|   |           |      | Months Exp.    | Experience and Qualifications  |   |
| Introduction to Testing & Test Engineering  | Y         | 2    | 0              | None   | Provides the basics of testing and model-based testing in traditional, Agile and DevOps environments. Prepares students for the ISTQB Foundation course.  |
| ISTQB Foundation, 2018 Syllabus and Exam    | Y         | 3    | 0-6            | Ability to absorb significant amounts of information in a short space of time; attention to detail; willingness to do homework.                    | This is the course that provides students with the common terms and processes they will need through their careers and which are industry-recognised as the de facto standard.  |
| BCS Introduction to Artificial Intelligence | Optional  | 1    | 6-12           | A basic understanding of testing and an interest in knowing more about AI  | This introductory course addresses the potential benefits, types of Artificial Intelligence, the basic process of Machine Learning (ML), the challenges and risks associated with an AI project, and the future of AI and Humans in work. |
| Introduction to Automation                  | Y         | 1    | 6-12           | ISTQB/ISEB Foundation and an interest in specialising in or knowing more about test automation.  | Modern Test Practices support automation as a key stream and deliverable, and this course provides students with their first 'hands-on' experience. It can also be supplemented with an optional Introduction to Python or other language |
| Introduction to Python Programming          | Optional  | 3    | 6-12           | ISTQB/ISEB Foundation and an interest in specialising in or knowing more about technical script writing for automation and/or performance testing. | Provides Test Engineers with the basics of Python Programming, as may be used in automation and/or performance and/or other technologies they may be required to support.   |

| Test Engineer Learning & Development        | Mandatory | Days | Pre-Requisites |   | Rationale   |
|---|-----------|------|----------------|---|---|
|   |           |      | Months Exp.    | Experience and Qualifications   |   |
| Introduction to Risk Based Testing          | Y         | 2    | 18             | ISTQB/ISEB Foundation and those who are aware of the need to understand, profile and prioritise risk on the projects.   | Provides a practical approach to identifying, prioritising and managing risk.   |
| Role Based Techniques                       | Optional  | 1    | 12-18          | Those needing more techniques but who are not ready for ISTQB Advanced Test Analyst.  | The gap between Foundation and either BCS Intermediate or ISTQB Advanced can be too long for some, and this course bridges the gap.   |
| Introduction to Performance                 | Optional  | 1    | 6-24           | No pre-requisites, although some testing experience and an ISTQB Foundation certificate would be beneficial to learning and outcomes  | This hands-on course provides the basics of performance testing for those who wish to specialise in the subject and go on to specific tools-based training and strategy work  |
| ISTQB Mobile App Tester and Exam            | Y         | 2    | 12             | Ability to use a computer for basic functions such as accessing files and using the command line interface. Willingness to learn how to use virtual machines for testing. Dexterity with fingers to test functions on mobile devices. | With 'mobile' being increasingly used as a delivery platform, it is now accepted that Test Engineers must understand how to test applications on mobile devices.<br><br>Note: The iSQI CMAP qualification was retired in October 2019 in favour of the ISTQB Mobile App Tester qualification. |
| ISTQB Foundation – Agile Extension and Exam | Y         | 2    | 12-18          | An ISTQB/ISEB Foundation Certificate is required for students to sit the exam, but not the course.  | Agile is now mainstream, and students must be able to work within it. The course expands on the techniques and learning in the Foundation Course and the difference that Agile brings.  |

| Test Engineer Learning & Development  | Mandatory | Days    | Pre-Requisites |  | Rationale  |
|---------------------------------------|-----------|---------|----------------|--|--|
|                                       |           |         | Months Exp.    | Experience and Qualifications  |  |
| BCS Intermediate and Exam             | Y         | 4       | 18-24          | A solid understanding and usage of the terms, processes and techniques gained on prior courses.  | This course expands upon the skills taught by ISTQB Foundation. Passing the exam on this course is a pre-requisite for students to graduate from the Apprenticeship Scheme and qualify for full Government funding.  |
| DevOps Foundation                     | Optional  | 2       | 24             | None   | Provides the basics of DevOps that Test Engineers must master to work in this environment.   |
| ISTQB Advanced Test Analyst with exam | Optional  | 4       | 24             | <p>Must hold an ISTQB/ISEB Foundation certificate (from either the 2011 syllabus or the more recent 2018 syllabus) to sit the exam. At least 24-months solid testing experience using test design techniques, self-motivated, ability to analyse requirements. Ability to sit a multiple-choice exam lasting 3 hours.</p> <p>This is an optional course that may be sat at 18-months for the high-flyer or those on accelerated learning programmes.</p> | This course is the natural route and progression for those who want to move up the ladder. It will increase knowledge and understanding of industry standard functional techniques and imbue the students with additional skills to take on more complex work. |
| Coaching and Mentoring                | Optional  | Ongoing | Ongoing        | None   | Optional for those not on a government sponsored Apprenticeship programme, but mandatory for those who are if full funding is to be secured  |

| Test Engineer Learning & Development | Mandatory | Days | Pre-Requisites |   | Rationale  |
|--------------------------------------|-----------|------|----------------|---|--|
|                                      |           |      | Months Exp.    | Experience and Qualifications   |  |
| Consultancy Skills                   | Optional  | 1    | 0-24           | 0-2 years of testing experience for those expected to be deployed on client site as a fee-earning consultant. | Provides students with the behavioural and communication skills they will be expected to display to both internal and external stakeholders. |

Table 1 - Test Engineer Learning & Development, Pre-Requisites and Rationale

### 4.3 The Senior Test Engineer

The Senior Test Engineer stream is designed for people who have at least two-years' software testing on projects and have expressed a desire to make testing their career goal and move up the ladder of seniority within a Test Practice.

Students graduating The Test Engineer stream are expected to join this stream at the beginning, whereas others with relevant experience can join at any point.

#### 4.3.1 The Senior Test Engineer Roadmap

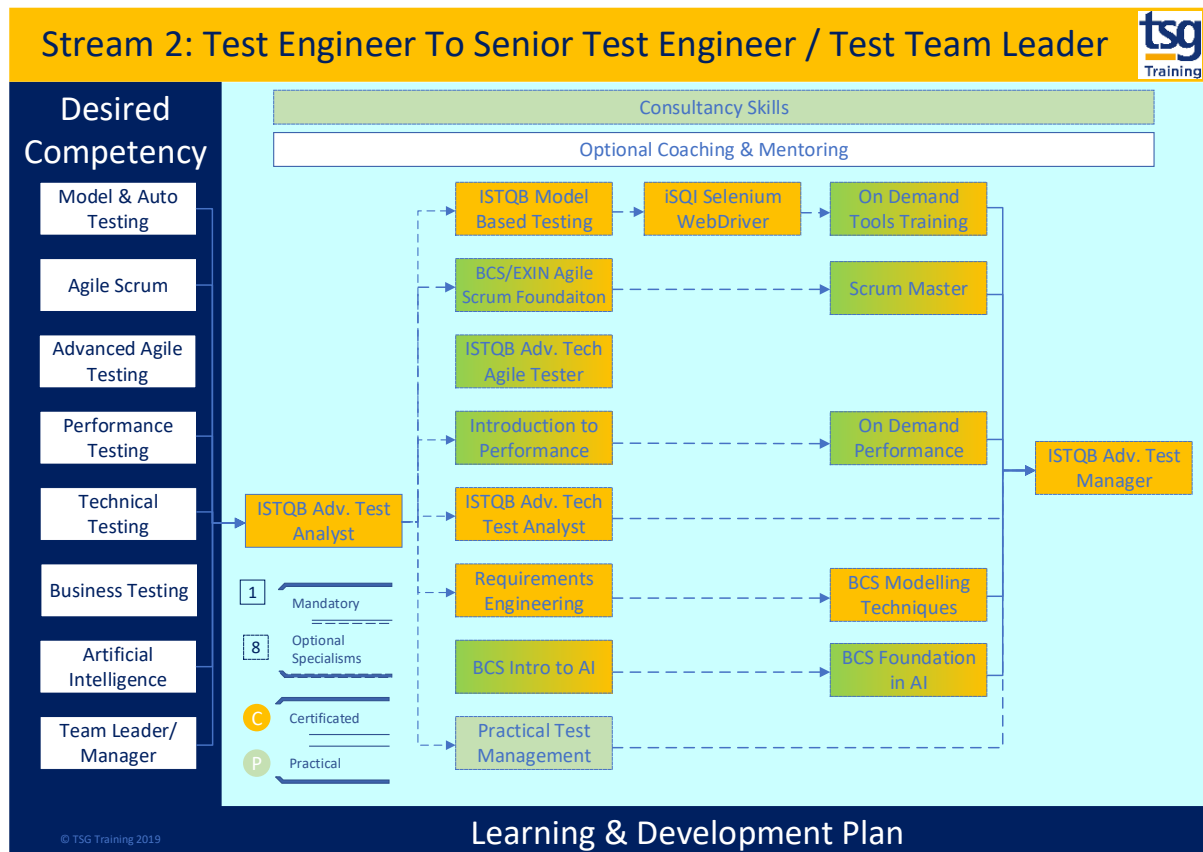


Figure 3 - The Senior Test Engineer Capability Roadmap

Some courses in Stream 2 are repeated from Stream 1. However, this is only to ensure that everyone has the full skill set. If a course has been taken in Stream 1 then it need not be taken again here.

The stream supports and enables people to acquire skill in the key competencies of:

- Advanced Agile Testing
- Agile Scrum
- Artificial Intelligence
- Automated Testing
- Business Testing
- Model Based
- Performance Testing
- Team Leaders and aspiring Test Managers
- Technical Testing, such as SI, Infrastructure, etc.

Supporting 9 key competencies, Stream 2 contains a mandatory course and 8-optional course paths that allow the Senior Test Engineer to specialise in key skills areas as they progress toward Lead Test

Engineer or Test Architect. Whilst the paths are optional, we recommend that at least one be completed to graduate. Staff not taking ISTQB Test Manager in this stream will face it in the next

It is not envisaged that any of the courses in this stream will be eligible for 'Government Apprenticeship Funding' unless someone is transferring into a role where there is a requirement to learn at least 51% of new skills to fulfil it.

#### 4.3.2 Senior Test Engineer Courses Narrative

| Senior Test Engineer Learning & Development   | Mandatory | Days           | Pre-Requisites |  | Rationale   |
|---|-----------|----------------|----------------|--|---|
|   |           |                | Months Exp.    | Experience and Qualifications  |   |
| <b>ISTQB Advanced Test Analyst with exam</b>  | Y         | 4              | 24-30          | <p>Must hold an ISTQB/ISEB Foundation certificate (from either the 2011 syllabus or the more recent 2018 syllabus) to sit the exam. At least 24-months solid testing experience using test design techniques, self-motivated, ability to analyse requirements. Ability to sit a multiple-choice exam lasting 3 hours.</p> <p>The course may be sat at 18-months for the high-flyer or those on accelerated learning.</p> | <p>This course is the natural route and progression for those who want to move up the ladder. It will increase knowledge and understanding of industry standard functional techniques and imbue the students with additional skills to take on more complex work.</p>   |
| <b>ISTQB Model based Testing</b>  | Optional  | 2              | 24-36          | <p>ISTQB/ISEB Foundation certificate and an interest in learning about the use of models in testing.</p>   | <p>Useful predominantly in manufacturing and non-service-based industries to generate test cases from models. Also used more and more in Automation, where it sits at the top-end of the approach.</p>  |
| <b>On-Demand Automation Tools and/or iSQI Selenium Foundation with WebDriver and Exam</b> | Optional  | 3/<br>Variable | 24-36          | <p>Attendees should have general knowledge of basic programming and some knowledge of Python and a desire to embark on automation at a practical level.</p>  | <p>This leading shareware tool has now become accepted as mainstream and is being used by more and more companies. The course provides people with the skills to develop, run and maintain automated test packs with Selenium at the heart.</p> <p>Other specific tools-based training on request to meet client demand</p> |

| Senior Test Engineer<br>Learning & Development | Mandatory | Days     | Pre-Requisites |   | Rationale  |
|--|-----------|----------|----------------|---|--|
|  |           |          | Months<br>Exp. | Experience and Qualifications   |  |
| ISTQB Advanced Technical Agile Tester          | Optional  | 3        | 36-42          | ISTQB Foundation – Agile Extension would be beneficial (but not mandatory) as would 3-years of solid testing experience, 2 of which should have been spent testing on Agile Projects/Sprints. | This course is principally aimed at test practitioners who have achieved an advanced point in their careers in software testing and are expecting to be actively involved in the technical aspects of software testing using advanced techniques in an Agile Environment |
| Introduction to Performance                    | Optional  | 1        | 24             | No pre-requisites, although some testing experience and an ISTQB Foundation certificate would be beneficial to learning and outcomes  | This hands-on course provides the basics of performance testing for those who wish to specialise in the subject and go on to specific tools-based training and strategy work   |
| On-Demand Performance Tools                    | Optional  | Variable | 24             | Some hands-on experience of performance testing would most definitely benefit learning and help facilitate desired outcomes   | Specific tools-based training on request to meet client demand   |
| BCS/EXIN Agile Scrum Foundation                | Optional  | 3        | 30-36          | 3-years of solid testing experience, at least 1 of which should have been spent testing on Agile Projects and Sprints   | This hands-on course provides the skills for a Lead Test Engineer to work effectively in Agile Scrum environments  |



| Senior Test Engineer<br>Learning & Development | Mandatory | Days | Pre-Requisites |  | Rationale  |
|--|-----------|------|----------------|--|--|
|  |           |      | Months<br>Exp. | Experience and Qualifications  |  |
| BCS/EXIN Agile Scrum Practitioner              | Optional  | 3    | 36-48          | A BCS/EXIN Agile Scrum Foundation certificate must be held before sitting this exam for this course<br><br>3-years of solid testing experience, at least 2 of which should have been spent testing on Agile Projects and Sprints | This hands-on course provides the skills for a Lead Test Engineer to advance to Scrum Mater, lead sprints and run agile teams  |
| ISTQB Advanced Technical Test Analyst          | Options   | 3    | 36             | 3-years of solid testing experience across different life cycle stages.  | The ISTQB Certified Technical Test Analyst Advanced Level is principally aimed at test practitioners who have achieved an advanced point in their careers in software testing and are expecting to be actively involved in the technical aspects of software testing using advanced techniques |
| BCS Requirements Engineering and Exam          | Optional  | 3    | 24-36          | Some practical experience of working with requirements or use cases would be beneficial, although not mandatory.   | The course teaches the business Test Engineer how to ensure that requirements are correct and complete to fulfil the needs of the business and other stakeholders.   |
| BCS Modelling Techniques and Exam              | Optional  | 3    | 30-48          | None   | Teaches students how to work with systems modelling, static modelling, dynamic modelling and modelling in context in order to provide the right models on client programmes.   |

| Senior Test Engineer<br>Learning & Development | Mandatory | Days | Pre-Requisites |   | Rationale   |
|--|-----------|------|----------------|---|---|
|  |           |      | Months<br>Exp. | Experience and Qualifications   |   |
| Practical Test Management                      | Optional  | 4    | 30-48          | <p>ISTQB/ISEB Foundation certificate and the will to learn the techniques and behavioural characteristics of a Team Leader or aspiring Test Manager.</p> <p>Note: This course was originally commissioned by IBM to help their team leaders and test managers to develop the consultancy skill necessary to manage client projects.</p> | This course is based around a detailed and realistic case study and follows this 'virtual' project from inception, risk analysis and the generation of the test plan, the application of this plan to perform the testing, and then considers the testing that needs to be performed once the application goes 'live' by reviewing the appropriate responses to both ongoing and new risks. |
| BCS Introduction to Artificial Intelligence    | Optional  | 1    | 6-12           | A basic understanding of testing and an interest in knowing more about AI   | This introductory course addresses the potential benefits, types of Artificial Intelligence, the basic process of Machine Learning (ML), the challenges and risks associated with an AI project, and the future of AI and Humans in work.   |
| BCS Foundation in Artificial Intelligence      | Optional  | 2    | 24-36          | A basic understanding of testing and an interest in establishing a strong foundation in AI from which a student can advance   | Anyone with an interest in (or need to implement) artificial intelligence in an organisation, especially those working in areas such as science, engineering, knowledge engineering, finance, education or IT services.   |

| Senior Test Engineer Learning & Development | Mandatory | Days    | Pre-Requisites |   | Rationale   |
|---|-----------|---------|----------------|---|---|
|   |           |         | Months Exp.    | Experience and Qualifications   |   |
| ISTQB Advanced Test Manager and Exam        | Yes       | 5       | 36-48          | ISTQB/ISEB Foundation certificate and at least 36 months testing experience. Some team management experience helpful. Interest in setting the direction of testing. Familiarity with the challenges facing test teams in projects. Willingness to sit a multiple-choice exam lasting 3 hours. High flyers or those on accelerated learning may be ready to take this course at 24-months. | To provide the industry view of test management practices and principles to set test policy, strategy and plans.<br><br>This course is the last in the stream, but may optionally be sat at the beginning of Stream 3, The Lead Test Engineer |
| Coaching and Mentoring                      | Y         | Ongoing | Ongoing        | None  | Floor walking, telephone or mail support to help apply skills learned and with solution developed to solve client requirements.   |
| Consultancy Skills                          | Optional  | 1       | None           | 2-4 years testing experience for those expected to be deployed on client site as a fee-earning consultant.  | Provides students with the behavioural and communication skills they will be expected to display to both internal and external stakeholders.  |

Table 2 - Senior Test Engineer Learning & Development, Pre-Requisites and Rationale

## 4.4 The Lead Test Engineer

The Lead Test Engineer stream is designed for people who have already gained a good deal of testing experience, but who are beginning to think about specialising, either in leadership and management or more technical disciplines. It is recommended that people embarking on or entering this stream have a minimum of 4-years' experience.

### 4.4.1 The Lead Test Engineer Roadmap

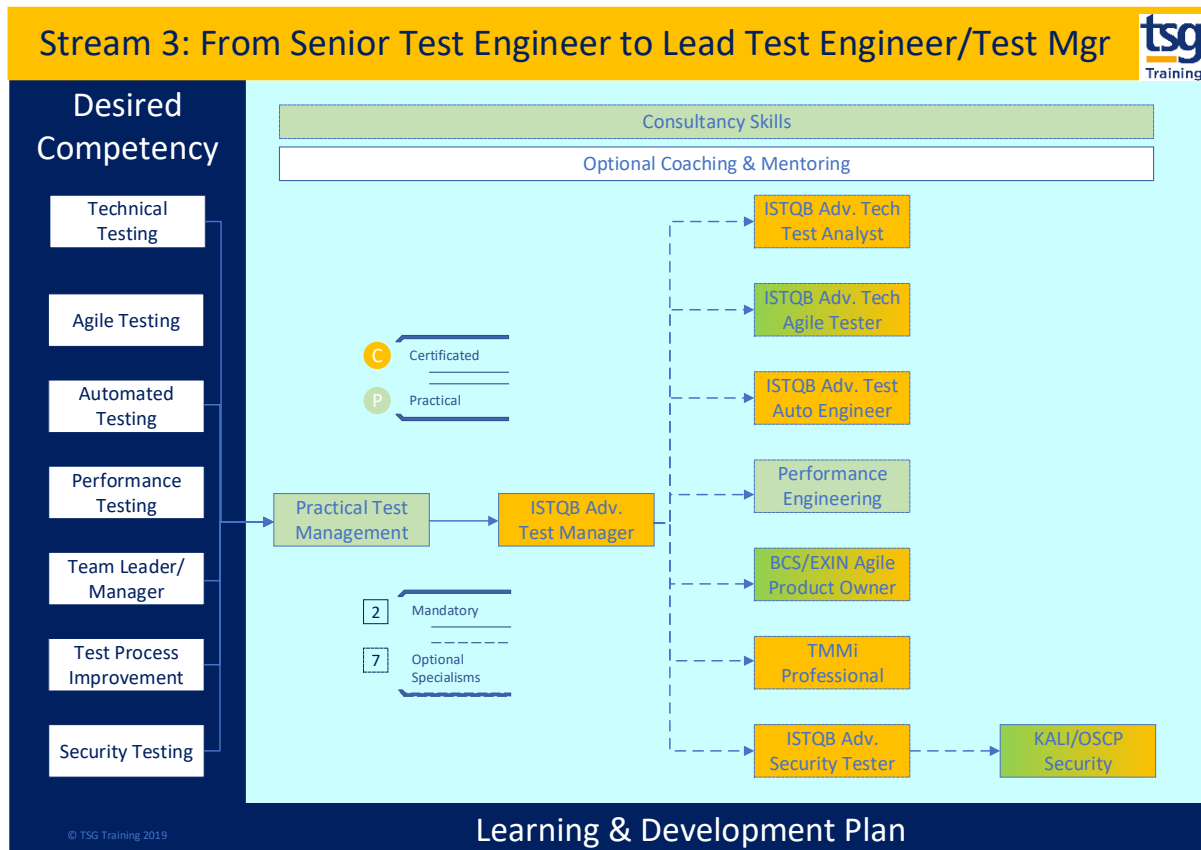


Figure 4 - The Lead Test Engineer Capability Roadmap

The stream supports the key competencies of:

- Technical Testing
- Agile Testing
- Advanced Automated Testing
- Performance Testing
- Test Team Leader or Test Manager or Product Owner
- Test Process Improvement
- Security Testing

As can be seen in Figure 4 - The Lead Test Engineer Capability Roadmap, there is a series of mandatory courses and optional paths for Advanced Test Automation, Test Process Improvement and other key competencies. Whilst the paths are optional, we recommend at least one be completed to graduate from the stream and attain an 'Test Practice Diploma'.

Note: It is not envisaged that any of the courses in this stream will be eligible for 'Government Apprenticeship Funding' unless someone is transferring into a role where there is a requirement to learn at least 51% of new skills to fulfil it.

#### 4.4.2 Lead Test Engineer Learning & Development Narrative

| Lead Test Engineer Course                   | Mandatory | Days | Pre-Requisites |  | Rationale  |
|---|-----------|------|----------------|--|--|
|   |           |      | Months Exp.    | Experience and Qualifications  |  |
| <b>Practical Test Management</b>            | Optional  | 4    | 30-48          | <p>ISTQB/ISEB Foundation certificate and the will to learn the techniques and behavioural characteristics of a Team Leader or aspiring Test Manager.</p> <p>Note: This course was originally commissioned by IBM to help their team leaders and test managers to develop the consultancy skill necessary to manage client projects.</p>  | <p>This course is based around a detailed and realistic case study and follows this 'virtual' project from inception, risk analysis and the generation of the test plan, the application of this plan to perform the testing, and then considers the testing that needs to be performed once the application goes 'live' by reviewing the appropriate responses to both ongoing and new risks.</p> <p>The course may have been taken as an option in Stream 2, and in such a case it need not be taken here.</p> |
| <b>ISTQB Advanced Test Manager and Exam</b> | Yes       | 5    | 36-48          | <p>ISTQB/ISEB Foundation certificate and at least 36 months testing experience. Some team management experience helpful. Interest in setting the direction of testing. Familiarity with the challenges facing test teams in projects. Willingness to sit a multiple-choice exam lasting 3 hours. High flyers or those on accelerated learning may be ready to take this course at 24-months.</p> | <p>To provide the industry view of test management practices and principles to set test policy, strategy and plans.</p>  |

| Lead Test Engineer Course                        | Mandatory | Days | Pre-Requisites |  | Rationale  |
|--|-----------|------|----------------|--|--|
|  |           |      | Months Exp.    | Experience and Qualifications  |  |
| ISTQB Advanced Technical Test Analyst            | Optional  | 3    | 36             | 3-years of solid testing experience across different life cycle stages.  | The ISTQB Certified Technical Test Analyst Advanced Level is principally aimed at test practitioners who have achieved an advanced point in their careers in software testing and are expecting to be actively involved in the technical aspects of software testing using advanced techniques |
| ISTQB Advanced Technical Agile Tester            | Optional  | 3    | 36-42          | ISTQB Foundation – Agile Extension would be beneficial (but not mandatory) as would 3-years of solid testing experience, 2 of which should have been spent testing on Agile Projects/Sprints.  | This course is principally aimed at test practitioners who are expecting to be actively involved in the technical aspects of software testing using advanced techniques in an Agile Environment  |
| ISTQB Advanced Test Automation Engineer and Exam | Optional  | 3    | 36-48          | ISTQB/ISEB Foundation certificate, Introduction to Automation and, ideally, the Selenium Foundation course, at least 36 months testing experience or some real hands-on experience of the different test models that can be applied to reusable frameworks. Interest in test automation practices and procedures. Leadership skills needed to influence the test automation strategy and approaches for programmes. Significant analysis and evaluation and skills in a technical setting. | To develop a deeper understanding of designing, developing, and maintaining the correct frameworks and techniques for test automation solutions  |

| Lead Test Engineer Course          | Mandatory | Days | Pre-Requisites |  | Rationale  |
|------------------------------------|-----------|------|----------------|--|--|
|                                    |           |      | Months Exp.    | Experience and Qualifications  |  |
| Performance Engineering            | Optional  | 5    | 36-48          | Experience of performance tools-based training is required to further learning through tools specific courses  | To enable effective performance engineering that goes beyond simple testing. Provides for strategy and plan development, profiling processes and analysis and usage of outputs to identify problems and correct them across the life cycle   |
| BCS/EXIN Agile Scrum Product Owner | Optional  | 3    | 36-48          | 2-years agile testing and test management are recommended to step up to the role of Product Owner in an agile environment  | When an organization makes the decision to adopt agile, it takes much more than pulling together a development team and allowing them to work in an iterative manner. Agile is a true shift in how individuals collaborate, communicate and operate. Agile requires an "all in" mindset from both business and technology where all individuals work together to deliver business value in the form of working software. |
| TMMi Professional and Exam         | Optional  | 2    | 36-48          | No qualifications are required to embark on the TMMi Professional course. However, it is thoroughly recommended that students have some good test management and 'lessons learned' experience. | This course teaches people to assess the test maturity of organisations and to put in place plans and actions to increase it. TMMi is now the most widely used test improvement model worldwide.   |

| Lead Test Engineer Course                            | Mandatory | Days   | Pre-Requisites |   | Rationale  |
|--|-----------|--------|----------------|---|--|
|  |           |        | Months Exp.    | Experience and Qualifications   |  |
| ISTQB Advanced Security Tester and Exam              | Optional  | 4      | 36-48          | ISTQB/ISEB Foundation certificate, at least 36 months testing experience Interest in security practices and procedures. Leadership skills needed to influence the security testing strategy and approaches for programmes. Significant analysis and evaluation and skills in a technical setting. | To develop a deeper understanding of issues and how to build in security to systems and complex solutions that risk being compromised, either internally or from external threats. |
| KALI/OSCP Advanced and Certificated Security Testing | Optional  | Online | 36-48          | An ISTQB Advanced Security Tester certificate is a pre-requisite of this course, as is 1-years actual security testing  | To develop ethical hackers who can build in security measures and protect client systems.  |



## 4.5 The Test Architect

The Test Architect stream is designed for people who want to drive technology solutions, set strategy, influence the business and operate as an experienced consultant on behalf of both internal and external stakeholders. It is recommended that people embarking on or joining this stream have at least 6-years of relevance experience and hold an ISTQB Foundation Level certificate.

### 4.5.1 The Test Architect Roadmap

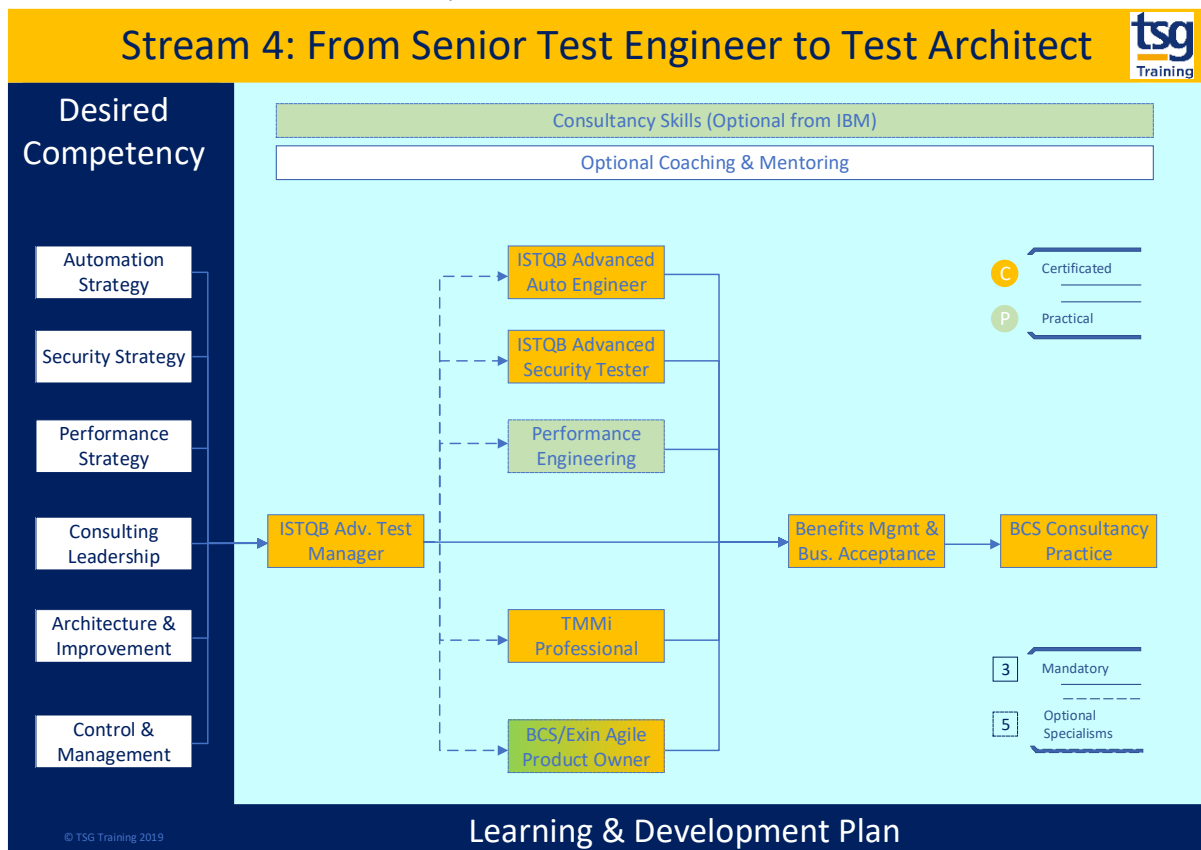


Figure 5 - The Test Architect Capability Roadmap

The stream supports the key competencies of:

- Automation Strategies
- Security strategy
- Performance Strategy
- Test Management and Architecture
- Architecture and Process Improvement
- Control & Management for Consulting Leadership & Business Management

As can be seen in Figure 5 - The Test Architect Capability Roadmap, there are three mandatory courses, interspersed with five optional paths within the stream. Whilst the paths are optional, they link back to mandatory courses that a student must pass if they are to graduate the stream and achieve a 'Test Practice Diploma'.

Note: It is not envisaged that any of the courses in this stream will be eligible for 'Government Apprenticeship Funding' unless someone is transferring into a role where there is a requirement to learn at least 51% of new skills to fulfil it.

#### 4.5.2 Test Architect Courses Narrative

| Test Architect Learning & Development            | Mandatory | Days | Pre-Requisites |  | Rationale  |
|--|-----------|------|----------------|--|--|
|  |           |      | Months Exp.    | Experience and Qualifications  |  |
| ISTQB Advanced Test Manager and Exam             | Yes       | 5    | 36-48          | ISTQB/ISEB Foundation Certificate and at least 36 months testing experience. Some team management experience helpful. Interest in setting the direction of testing. Familiarity with the challenges facing test teams in projects. Willingness to sit a multiple-choice exam lasting 3 hours. High flyers or those on accelerated learning may be ready to take this course at 24-months.  | To provide the industry view of test management practices and principles to set tests policy, strategy and plans.                                |
| ISTQB Advanced Test Automation Engineer and Exam | Optional  | 3    | 36-48          | ISTQB/ISEB Foundation certificate, introduction to automation and, ideally, the Selenium Foundation course, at least 36 months testing experience or some real hands-on experience of the different test models that can be applied to reusable frameworks. Interest in test automation practices and procedures. Leadership skills needed to influence the test automation strategy and approaches for programmes. Significant analysis and evaluation and skills in a technical setting. | To develop a deeper understanding of designing, developing, and maintaining the correct frameworks and techniques for test automation solutions. |

| Test Architect<br>Learning & Development | Mandatory | Days | Pre-Requisites |   | Rationale  |
|--|-----------|------|----------------|---|--|
|  |           |      | Months<br>Exp. | Experience and Qualifications   |  |
| Performance Engineering                  | Optional  | 5    | 36-48          | Experience of performance tools-based training is required to attend this proprietary, practical and non-certificated IBM course.   | To enable effective performance engineering that goes beyond simple testing. Provides for strategy and plan development, profiling processes and analysis and usage of outputs to identify problems and correct them across the life cycle   |
| BCS/EXIN Agile Scrum Product Owner       | Optional  | 3    | 36-48          | 2-years agile testing and test management are recommended to step up to the role of Product Owner in an agile environment   | When an organization makes the decision to adopt agile, it takes much more than pulling together a development team and allowing them to work in an iterative manner. Agile is a true shift in how individuals collaborate, communicate and operate. Agile requires an "all in" mindset from both business and technology where all individuals work together to deliver business value in the form of working software. |
| ISTQB Advanced Security Tester and Exam  | Optional  | 4    | 36-48          | ISTQB/ISEB Foundation certificate, at least 36 months testing experience Interest in security practices and procedures. Leadership skills needed to influence the security testing strategy and approaches for programmes. Significant analysis and evaluation and skills in a technical setting. | To develop a deeper understanding of issues and how to build in security to systems and complex solutions that risk being compromised, either internally or from external threats.   |

| Test Architect Learning & Development                             | Mandatory | Days | Pre-Requisites |   | Rationale  |
|---|-----------|------|----------------|---|--|
|   |           |      | Months Exp.    | Experience and Qualifications   |  |
| <b>TMMi Professional and Exam</b>                                 | Optional  | 2    | 36-48          | No qualifications are required to embark on the TMMi Professional course. However, it is recommended that students have some good test management and 'lessons learned' experience.   | This course teaches people to assess the test maturity of organisations and to put in place plans and actions to increase it. TMMi is now the most used improvement method worldwide.  |
| <b>BCS Benefits Management &amp; Business Acceptance and Exam</b> | Yes       | 3    | 36-48          | The are no qualifications as pre-requisites to take this course. However, it is strongly recommended that delegates have a good understanding of business analysis, have led major programmes and want to provide additional benefits to help drive projects forward from inception.  | The course explores how systems are tested for business acceptance and cover other areas such as user acceptance testing, test design and planning, and delivery of business benefits. The course reinforces theoretical concepts by using realistic, practical case studies, to gain experience of applying benefits management and business acceptance techniques. |
| <b>BCS Consultancy Practice and Exam</b>                          | Yes       | 5    | 42-48          | The are no qualifications as pre-requisites to take this course. However, it is strongly recommended that delegates can demonstrate good consultancy practices, have led major programmes and are interested in business environment analysis, defining cogent solutions to tricky problems, writing bids and proposals, measuring and managing solutions and change. | This provides consultants with the skills beyond testing to help them become more rounded individuals who can lead programmes effectively from a business and management perspective.  |

## 4.6 The Test Expert

The Test Expert stream is designed for the people who are moving to the very top of their career to the point where they can lead major programmes, such as business critical integration, drive technology solutions, set organisational strategy, lead the business and operate as an experienced consultant on behalf of both internal and external stakeholders.

### 4.6.1 The Test Expert Roadmap

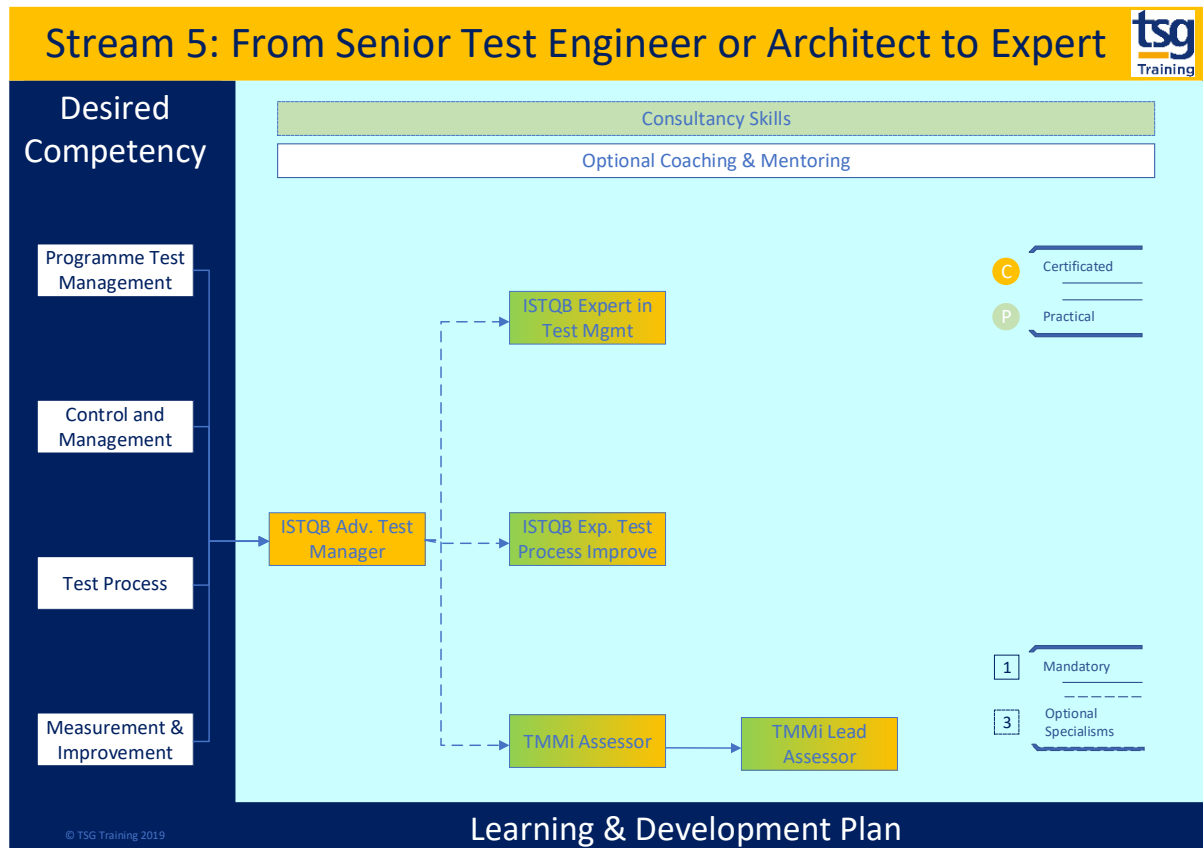


Figure 6 - The Test Expert Capability Roadmap

The stream supports the key competencies of:

- Programme Test Management for large scale programmes
- Control and Management
- Test Process Development and Improvement
- Measurement and Improvement

As can be seen in Figure 6 - The Test Expert Capability Roadmap, there is one mandatory course, ISTQB Test Manager (which is more of a requirement that should have been fulfilled previously), interspersed with three optional paths within the stream that are targeted to achieving excellence in key areas of developmental quality and delivery. Whilst the paths are optional, they link back to mandatory courses that a student must pass if they are to graduate the stream and be awarded a 'Test Practice Diploma'.

Note: It is not envisaged that any of the courses in this stream will be eligible for 'Government Apprenticeship Funding' unless someone is transferring into a role where there is a requirement to learn at least 51% of new skills to fulfil it.

#### 4.6.2 Test Expert Learning & Development Narrative

| Test Expert Learning & Development   | Mandatory | Days | Pre-Requisites |  | Rationale  |
|--------------------------------------|-----------|------|----------------|--|--|
|                                      |           |      | Months Exp.    | Experience and Qualifications  |  |
| ISTQB Advanced Test Manager and Exam | Yes       | 5    | 36-48          | <p>ISTQB/ISEB Foundation Certificate and at least 36 months testing experience. Some team management experience helpful. Interest in setting the direction of testing. Familiarity with the challenges facing test teams in projects. Willingness to sit a multiple-choice exam lasting 3 hours. High flyers or those on accelerated learning may be ready to take this course at 24-months.</p> <p>It is expected, however, that people entering this stream will have previously completed this course and passed the exam</p> | To provide the industry view of test management practices and principles to set tests policy, strategy and plans.  |
| ISTQB Expert Test Management         | Optional  | 8    | 60+            | <p>This course, delivered over three separate sessions of 3+3+2 days, represents the pinnacle in test management and requires and ISTQB Advanced Test Manager Certificate and significant experience and dedication to the cause before it is attempted.</p>   | <p>This course is taken only by the few who seek further industry acceptance above and beyond their already significant experience as a Test Manager.</p> <p>It is likely that people taking this course are those who possess the capability to lead large teams on major programmes, such as integration following a merger.</p> |

| Test Expert Learning & Development       | Mandatory | Days | Pre-Requisites |   | Rationale   |
|--|-----------|------|----------------|---|---|
|  |           |      | Months Exp.    | Experience and Qualifications   |   |
| ISTQB Expert in Test Process Improvement | Optional  | 7    | 60+            | This course, delivered over three separate sessions of 3+2+2 days, is for those who seek to develop and define test process at the corporate level and who will then provide guidance to teams on further development and capture of metrics and measures. An ISTQB Advanced Test Manager and significant experience of lessons learned and implementing improvement over several years is mandatory. | <p>This course is aimed at those taking an holistic view of test and operational processes who are tasked with:</p> <ul style="list-style-type: none"> <li>• Developing new ones</li> <li>• Improving existing ones</li> <li>• Managing metrics and measures for organisational excellence</li> <li>• Alignment of processes and metrics with corporate strategy and goals</li> </ul> |
| TMMi Assessor                            | Optional  | 5    | 60+            | Good experience of test process definition and improvement, coupled with an ISTQB Advanced Test Manager certificate.  | This course is aimed at those who expect to assess and report on test process and measurements within a contained project   |
| TMMi Lead Assessor                       | Optional  | 5    | 60+            | 24+ months of activity and 7 assessments as a TMMi Assessor   | This course is aimed at those who expect to assess and report on organisational test policy, strategy, plans and measurement and how can lead teams of assessors  |

## 5 Benefits of the Approach

In helping to meet the requirements of building capability within a modern Test Practice we have clearly delineated the roles and mapped them to training functions to be supported, aligned with stated principles and competencies:

- Courses will be delivered by experienced staff who have at least 20-years' experience gained from training and programme delivery at the sharp-end.
- The experience the trainers bring will allow them to offer the ever-important analogies and war-stories to make training relevant and accessible.
- All courses are ready to go, except for ISTQB Certified Mobile App Tester.
- Courses can be tailored to meet specific requirements; although for ISTQB courses we are limited to 10% variation without having to reaccredit.
- We can provide private training courses anywhere or staff can attend any of the courses that we run on our public schedule.
- We will agree and put in place a monitoring and measurement system to make sure that:
  - The delegate experience is rich.
  - People are passing exams at the expected rate.
  - The overall programme is delivering against its aims.



## A. Training & SFIA Cross Reference

The following table identifies:

- The Knowledge Levels (K) that each course and exam is aimed at:
- The SFIA Levels and the suitability of courses by the identified role types.

| Courses & SFIA Levels                       | Stream 1: Test Engineer          |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   | Stream 2: Senior Test Engineer |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              | Stream 3: Lead Test Engineer |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   | Stream 4: Test Architect       |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 | Stream 5: Test Expert                    |               |                    |   |  |  |  |  |  |  |  |  |
|---|----------------------------------|------------------|----------------------------|------------------------------------|----------------------------|-----------------------------|----------------------------------|----------------------|--------------------------|--|------------------|-------------------|--------------------------------|-----------------------------|---------------------------|------------------------|-------------------------------------|---------------------------------------|-----------------------------|--------------------------------------|---------------------------------|-----------------------------------|---------------------------------------|------------------------------|------------------------------|---------------------------|----------------------------------|---|-----------------------------|-----------------------------|---------------------------------------|---------------------------------------|---|-------------------------|------------------------------------|-------------------|--------------------------------|--------------------|-----------------------------|--------------------------------|---|-------------------------|---|--------------------------|-------------------|------------------------------------|-----------------------------|---------------------------------|--|---------------|--------------------|---|--|--|--|--|--|--|--|--|
|   | Introduction to Test Engineering | ISTQB Foundation | Introduction to Automation | Introduction to Risk-Based Testing | Role Based Test Techniques | Introduction to Programming | Intro to Artificial Intelligence | Intro to Performance | ISTQB Mobile App Testing | ISTQB Foundation Level Agile Extension | BCS Intermediate | DevOps Foundation | ISTQB Advanced Test Analyst    | ISTQB Advanced Test Analyst | ISTQB Model based Testing | isQ Selenium WebDriver | On Demand Automation Tools Training | ISTQB Advanced Technical Agile Tester | Introduction to Performance | On Demand Performance Tools Training | BCS/EXIN Agile Scrum Foundation | BCS/EXIN Agile Scrum Practitioner | ISTQB Advanced Technical Test Analyst | BCS Requirements Engineering | BCS Modeling Techniques      | Practical Test Management | Intro to Artificial Intelligence | BCS Foundation in Artificial Intelligence | ISTQB Advanced Test manager | ISTQB Advanced Test Manager | ISTQB Advanced Technical Agile Tester | ISTQB Advanced Technical Test Analyst | ISTQB Advanced Test Automation Engineer | Performance Engineering | BCS/EXIN Agile Scrum Product Owner | TMMi Professional | ISTQB Advanced Security Tester | KALI/OSCP Security | ISTQB Advanced Test Manager | ISTQB Advanced Security Tester | ISTQB Advanced Test Automation Engineer | Performance Engineering | BCS Benefits Management & Business Acceptance | BCS Consultancy Practice | TMMi Professional | BCS/EXIN Agile Scrum Product Owner | ISTQB Advanced Test Manager | ISTQB Expert in Test Management | ISTQB Expert in Test Process Improvement | TMMi Assessor | TMMi Lead Assessor |   |  |  |  |  |  |  |  |  |
| <b>Mandatory or Optional</b>                | M                                | M                | O                          | O                                  | O                          | O                           | O                                | M                    | M                        | O                                      | M                | O                 | M                              | O                           | O                         | O                      | O                                   | O                                     | O                           | O                                    | O                               | O                                 | O                                     | O                            | O                            | O                         | O                                | O   | O                           | M                           | O                                     | O                                     | O                                       | O                       | O                                  | O                 | O                              | O                  | O                           | M                              | O                                       | O                       | O   | M                        | M                 | O                                  | O                           | M                               | O  | O             | O                  | O |  |  |  |  |  |  |  |  |
| <b>Training Mode</b>                        |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| <b>Classroom Days</b>                       | 2                                | 3                | 1                          | 2                                  | 2                          | 2                           | 1                                | 1                    | 2                        | 2                                      | 4                | 2                 | 4                              | 4                           | 2                         | 3                      | 4                                   | 3                                     | 1                           | 5                                    | 2                               | 3                                 | 3                                     | 3                            | 3                            | 4                         | 1                                | 2   | 5                           | 5                           | 3                                     | 3                                     | 3                                       | 5                       | 2                                  | 2                 | 4                              | N                  | 5                           | 4                              | 3                                       | 5                       | 3   | 5                        | 2                 | 2                                  | 5                           | 8                               | 7  | 5             | 5                  |   |  |  |  |  |  |  |  |  |
| <b>Accelerated Days</b>                     | N                                | 2                | N                          | N                                  | N                          | N                           | N                                | N                    | N                        | N                                      | N                | 3                 | 3                              | N                           | N                         | N                      | 2                                   | N                                     | N                           | N                                    | N                               | 2                                 | N                                     | N                            | N                            | N                         | N                                | N   | 3                           | 3                           | 2                                     | 2                                     | 2                                       | N                       | N                                  | N                 | N                              | N                  | 3                           | 4                              | 2                                       | N                       | N   | N                        | N                 | N                                  | 3                           | N                               | N  | N             | N                  |   |  |  |  |  |  |  |  |  |
| <b>Virtual Classroom</b>                    | 2                                | 3                | 1                          | 2                                  | 2                          | 2                           | 1                                | 1                    | 2                        | 2                                      | 4                | 2                 | 4                              | 4                           | 2                         | 3                      | 4                                   | 3                                     | 1                           | 5                                    | 2                               | 3                                 | 3                                     | 3                            | 3                            | 4                         | 1                                | 2   | 5                           | 5                           | 3                                     | 3                                     | 3                                       | 5                       | 2                                  | 2                 | 4                              | N                  | 5                           | 4                              | 3                                       | 5                       | 3   | 5                        | 2                 | 2                                  | 5                           | 8                               | 7  | 5             | 5                  |   |  |  |  |  |  |  |  |  |
| <b>Online</b>                               | N                                | Y                | N                          | N                                  | N                          | N                           | N                                | N                    | N                        | Y                                      | N                | Y                 | N                              | N                           | N                         | N                      | N                                   | N                                     | N                           | N                                    | N                               | Y                                 | N                                     | N                            | N                            | N                         | N                                | Y   | Y                           | N                           | Y                                     | N                                     | N                                       | N                       | N                                  | N                 | Y                              | Y                  | N                           | N                              | N                                       | N                       | N   | N                        | N                 | N                                  | Y                           | N                               | N  | N             | N                  |   |  |  |  |  |  |  |  |  |
| <b>Blooms Taxonomy</b>                      |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| <b>K-Levels</b>                             |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| 6: Evaluate                                 |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| 5: Synthesis                                |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| 4: Analyse                                  |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| 3: Apply                                    |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| 2: Understand                               |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| 1: Remember                                 |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| <b>SFIA Levels &amp; Course</b>             |                                  |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| Strategy/Inspire<br><i>Head of Testing</i>  | 7                                |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| Initiate/Influence<br><i>Test Architect</i> | 6                                |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| Ensure/Advise<br><i>Lead Test Engineer</i>  | 5                                |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| Enable<br><i>Senior Test Engineer</i>       | 4                                |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |
| Apply<br><i>Test Engineer</i>               | 2/3                              |                  |                            |                                    |                            |                             |                                  |                      |                          |  |                  |                   |                                |                             |                           |                        |                                     |                                       |                             |                                      |                                 |                                   |                                       |                              |                              |                           |                                  |   |                             |                             |                                       |                                       |   |                         |                                    |                   |                                |                    |                             |                                |   |                         |   |                          |                   |                                    |                             |                                 |  |               |                    |   |  |  |  |  |  |  |  |  |

Table 3 - SFIA Levels by Course and Role Type