PURPLE GRIFFON
The IT Service Management Training & Consultancy Specialists

Course Title: ISTQB® Foundation - AI For Testers	**Course Duration**: 4.0 Days
Exam: Included	**Exam Type**: Proctored Exam
Qualification: ISTQB® Foundation - AI For Testers Certificate	

Course Syllabus

Our ISTQB® Foundation - AI For Testers training course covers the following Modules:

Module 1: Introduction To A.I

- Definition of A.I and A.I effect
- Narrow, general and super A.I
- A.I-based and conventional systems
- A.I technologies
- A.I Development Frameworks
- Hardware for A.I-based systems
- A.I as a service
- Pre-trained Models
- Standards, regulations and A.I

Module 2: Quality Characteristics Of A.I-Based Systems

- Flexibility and adaptability
- Autonomy
- Evolution
- Bias
- Ethics
- Side effects and reward hacking
- Transparency and interpretability
- Safety and A.I

Module 3: Machine Learning(ML) Overview

- Forms of (ML)
- (ML) Workflow
- Selecting a form of (ML)
- Factors involved in (ML) Algorithm selection
- Overfitting and underfitting

Module 4: (ML) Data

- Data preparation as part of (ML) workflow
- Training, Validation and Test datasets in (ML) workflow
- Dataset quality issues

- Data quality and its effect on the (ML) model
- Data labelling for supervised learning

Module 5: (ML) Functioning Performance Metrics

- Confusion Matrix
- Add (ML) functioning performance metrics for classification, regression and clustering
- Limitations of (ML) functional performance metrics
- Selecting (ML) functional performance metrics
- Benchmark suites for (ML) performance

Module 6: (ML) Neural Networks And Testing

- Neural Networks
- Coverage measure for Neural Networks

Module 7: Testing A.I-Based Systems - Overview

- Specifications of A.I-based systems
- Test levels for A.I-based systems
- Test Data for testing A.I-based systems
- Testing for automation bias in A.I-based systems
- Documenting an A.I-based component
- Testing for concept drift
- Selecting a test approach for an (ML) system

Module 8: Testing A.I Specific Quality Characteristics

- Challenges testing self-learning systems
- Testing autonomous self-learning systems
- Testing for algorithmic, sample and inappropriate bias
- Challenges testing complex A.I-based systems
- Testing transparency of A.I-based systems
- Test oracles for A.I-based systems
- Test objectives and acceptance criteria

Module 9: Methods And Techniques For The Testing Of A.I-Based Systems

- Attacks and Data poisoning
- Pairwise testing
- A/B testing
- Back-to-back testing
- Metamorphic testing
- Experience-based testing of A.I-based systems
- Selecting test techniques of A.I-based systems

Module 10: Test Environments For A.I-Based Systems

- Test environments for A.I-based systems
- Virtual test environments of A.I-based systems

Module 11: Using A.I For Testing

- A.I technologies for testing
- Using A.I to analyse defect reports

- Using A.I for test case generation
- Using A.I for optimisation of regression test suites
- Using A.I for defect prediction
- Using A.I for testing user interface

Course Overview

Our four-day ISTQB® Foundation - AI For Testers training course extends the broad understanding of testing acquired at Foundation Level to enable the role of AI Tester to be performed.

Course Learning Outcomes

Our ISTQB® Foundation - AI For Testers training course will teach you to become proficient in the following. Including but not limited to:

- Understanding the current state and expected trends of AI
- Experience the implementation and testing of a ML model and recognise where testers can best influence its quality
- Understand the challenges associated with testing AI-Based systems, such as their self-learning capabilities, bias, ethics, complexity, non-determinism, transparency and explainability
- Contribute to the test strategy for an AI-Based system
- Design and execute test cases for AI-based systems
- Recognise the special requirements for the test infrastructure to support the testing of AI-based systems
- Understand how AI can be used to support software testing

Audience

Our ISTQB® Foundation - AI For Testers training course will benefit several individuals and organisations, including but not limited to:

- Software Testers
- Test Automation Engineers
- Quality Assurance (QA) Professionals
- Developers
- Test Managers
- AI and Machine Learning Professionals
- Quality Analysts
- Anyone involved in software testing, quality assurance, test automation, or software development can benefit from learning AI testing.

Entry-Level Requirements

Our ISTQB® Foundation - AI For Testers training course requires delegates to have experience at the level of our BCS Certificate In Software Testing course.

Recommended Reading

There is no recommended reading for our ISTQB® Foundation - AI For Testers training course.

What's Included

Our ISTQB® Foundation - AI For Testers training course contains the following:

- Pre-reading
- Course Manual
- Quizzes
- Exercises

Exam Information

ISTQB® Foundation - AI For Testers Exam:

- Format: Multiple choice
- Duration: 1 hour
- Questions: 40
- Pass score: 65% (26 out of 40).

What's Next

Attendees may enjoy our training course three-day BCS Artificial Intelligence (AI) Foundation course to understand how AI services are produced.

Additional Information

Our ISTQB® Foundation - AI For Testers training course offers several benefits to individuals and organisations, including but not limited to:

- **Enhanced Test Automation**: AI techniques can improve test automation by enabling intelligent test case generation, adaptive test execution, and self-healing test automation.
- **Improved Test Coverage**: AI testing techniques can help identify and generate test cases that cover a broader range of scenarios and inputs.
- **Early Defect Detection**: AI can aid in early defect detection by analysing data and identifying patterns that indicate potential issues.
- **Efficient Test Planning and Execution**: AI techniques can assist in optimising test planning and execution processes.
- **Intelligent Test Result Analysis**: AI can help in intelligent analysis of test results, making it easier to identify patterns, trends, and areas of concern.
- **Advanced Test Data Generation**: AI techniques can assist in generating realistic and diverse test data for testing purposes.
- **Adaptability to Evolving Technologies**: As AI continues to advance and become more prevalent in software development and testing, learning AI testing ensures that testers stay up-to-date with the latest trends and techniques.