

# AI+ Quality Assurance

Certification



# Executive Summary

This course provides a comprehensive curriculum for professionals and technical experts to harness the power of Artificial Intelligence (AI) in Quality Assurance (QA). Through use cases, case studies, and hands-on projects, participants will learn how to implement AI techniques to improve software testing, defect prediction, and process optimization. The curriculum is designed to build practical skills and culminates in a capstone project where learners apply their knowledge to solve real-world QA challenges.

# Prerequisites

- **Programming Skills:** Basic knowledge of Python and familiarity with software testing lifecycle and tools.
- **Basics of QA:** Basic knowledge of Quality Assurance principles and practices.
- **Basics of AI:** Foundational knowledge of machine learning concepts is beneficial but not mandatory.

# Exam Blueprint

Number  
of Questions

**50**

Passing  
Score

**35/50 or 70%**

Duration

**90 Minutes**

Format

**Online via AI  
Proctoring platform**

Question Type

**Multiple Choice/Multiple  
Response**

# Exam Overview

<b>Module</b>	<b>Weight</b>
<b>Introduction to Quality Assurance (QA) and AI</b>	<b>7%</b>
<b>Fundamentals of AI, ML, and Deep Learning</b>	<b>9%</b>
<b>Test Automation with AI</b>	<b>9%</b>
<b>AI for Defect Prediction and Prevention</b>	<b>9%</b>
<b>NLP for QA</b>	<b>9%</b>
<b>AI for Performance Testing</b>	<b>12%</b>
<b>AI in Exploratory and Security Testing</b>	<b>12%</b>
<b>Continuous Testing with AI</b>	<b>12%</b>
<b>Advanced QA Technique With AI</b>	<b>12%</b>
<b>Capstone Project</b>	<b>9%</b>
	<b>100%</b>

 AI CERTs™  
The logo features a stylized 'AI' icon with a signal-like symbol to its left, followed by the text 'CERTs' with a trademark symbol. AI+  
Quality Assurance™  
The logo consists of the text 'AI+' in a large font, with 'Quality Assurance' and a trademark symbol below it. A stylized, glowing blue head profile composed of circuitry and data points, set against a dark blue background with abstract digital patterns.

# Certification Modules

## Module 1

### Introduction to Quality Assurance (QA) and AI

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1.1 Overview of QA

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1.2 Introduction to AI in QA

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1.3 QA Metrics and KPIs

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## 1.3 QA Metrics and KPIs

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### Module 2

# Fundamentals of AI, ML, and Deep Learning

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## 2.1 AI Fundamentals

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## 2.2 Machine Learning Basics

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## 2.3 Deep Learning Overview

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## 2.4 Large Language Models (LLMs)

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### Module 3

# Test Automation with AI

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## 3.1 Test Automation Basics

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## 3.2 AI-Driven Test Case Generation

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## 3.3 Tools for AI Test Automation

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## 3.4 Integration into CI/CD Pipelines

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## Module 4

# AI for Defect Prediction and Prevention

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## 4.1 Defect Prediction Techniques

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## 4.2 Preventive QA Practices

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## 4.3 AI for Risk-Based Testing

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## 4.4 Use of AI for Continuous Monitoring

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## Module 5

# NLP for QA

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## 5.1 Basics of NLP

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## 5.2 NLP in QA

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## 5.3 LLMs for QA

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## 5.4 NLP for Bug Resolution and Analysis

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## Module 6

# AI for Performance Testing

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## 6.1 Performance Testing Basics

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## 6.2 AI in Performance Testing

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## 6.3 Visualization of Performance Metrics

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## 6.4 AI in Performance Testing of a Cloud App

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## Module 7

# AI in Exploratory and Security Testing

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## 7.1 Exploratory Testing with AI

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## 7.2 AI in Security Testing

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## 7.3 Case Study: Enhancing Security Testing with AI

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## 7.4 AI for Threat Analytics

## Module 8

# Continuous Testing with AI

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## 8.1 Continuous Testing Overview

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## 8.2 AI for Regression Testing

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## 8.3 Advanced Continuous Testing Techniques

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## 8.4 Use-Case: Risk-Based Continuous Testing

## Module 9

# Advanced QA Techniques with AI

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## 9.1 AI for Predictive Analytics in QA

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## 9.2 AI for Edge Cases

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## 9.3 Future Trends in AI + QA

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## 9.4 Integration of Emerging Technologies

## Module 10

# Capstone Project

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# Certification Outcome

Upon completing the AI+ Quality Assurance certification, participants will gain expertise in integrating AI and machine learning into software testing processes. They will be proficient in utilizing AI-driven tools for test automation, defect prediction, performance testing, and security analysis. Additionally, participants will understand the application of NLP techniques for bug triaging and test case generation. With hands-on experience in predictive analytics, continuous testing, and advanced QA practices, they will be equipped to enhance testing efficiency, accuracy, and scalability, ultimately contributing to higher-quality software development and faster delivery cycles.



## Market Insight

The demand for AI-driven solutions in Quality Assurance is growing as businesses seek to enhance testing efficiency, accuracy, and scalability. AI integration improves defect detection, automates complex tasks, and accelerates software delivery, making it a crucial factor for competitive advantage.



## Value Proposition

The AI+ Quality Assurance certification empowers professionals to implement cutting-edge AI tools for smarter testing, faster defect detection, and enhanced software quality. It provides a comprehensive skill set that boosts efficiency, reduces manual errors, and optimizes development cycles for high-quality software products.



## Additional Features

The course includes interactive discussions, hands-on activities, real-world case studies, and practical demonstrations to enhance learning. Participants will gain industry insights, explore AI tools, and engage in debates, ensuring a well-rounded understanding of AI's impact and applications across various sectors.

# AI Experts



## Jason Kellington

AI Expert

As a consultant, trainer, and technical writer with more than 25 years of experience in IT, I specialize in the development and delivery of solutions focused on effective and efficient enterprise IT.



## Justin Frébault

AI Expert

I'm a boutique data consultant specializing in data mesh and lakehouse solutions. I've dedicated my career to helping organizations transform their approach to data, moving beyond mere knowledge.



## J Tom Kinser

AI Expert

I have over forty years of experience in software development, data engineering, management, and technical training. I am a Microsoft Certified Trainer and a software developer, holding multiple certifications.



## Terumi Laskowsky

AI Expert

Country Manager for Global Consulting Services in Japan, Specialties: Information Security (Compliance, Policy, Application, Host, Network)

The logo for AI CERTS features a stylized yellow and white circuit board icon to the left of the text. The text 'AI' is in yellow, 'CERTS' is in white, and a registered trademark symbol (®) is to the right.

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