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# Level 4 Software Developer

## Programme Overview

- Phase 1 Onboarding
- Phase 2 Training, Tutor Support Sessions & Quarterly Reviews
  - Introduction to Software Development
  - Software Development Methodologies
  - Methodologies & UI Design
  - Database
  - Developing Software using SQL
  - Java
  - Ai and Machine Learning
  - Certified Entry-Level Python Programmer (Opt)
- Phase 3 Assessment Gateway
- Phase 4 End Point Assessment



Tutor support sessions every six weeks

## Programme Delivery

All modules are either trainer-led remote training session or self-paced distance learning on our dedicated virtual learning environment (VLE).

All trainer-led training days are delivered across three online sessions at the following times:

9am - 10:30am  
11am - 12:30pm  
1:30pm - 4pm

Phase	Month	Training Modules	Length
Phase 1		Introduction & Onboarding	1-2 days
Phase 2	1	Introduction to Software Development	VLE
	1	Software Development Methodologies	3 days
	2	Methodologies & UI Design	3 days
	3	Databases	2 days
	4	Developing Software using SQL	3 days
	5	Java (1)	3 days
	6	Java (2)	3 days
	7	Java (3)	2 days
	8	Ai and Machine Learning (1)	2 days
	9	Ai and Machine Learning (2)	2 days
	10	Certified Entry-Level Python Programmer (Opt)	VLE
Phase 3	11 - 14	Assessment Gateway & EPA Preparation	
Phase 4		End Point Assessment	3-4 months



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## Programme Details

### Introduction to Software Development

- Overview of the role of a software developer
- Reasons software failed
- Introduction to the SDLC
- Introduction to different models

### Software Development Methodologies

- Lifecycle concepts, including stages, activities and deliverables associated with the software development lifecycle
- Software development methodologies, including waterfall and agile, and the strengths and weaknesses associated with different models
- Data roles and responsibilities, including the structure of software development teams and aspects needed in teams to ensure effective delivery of projects

### Methodologies and UI Design

- Quality assurance
- Lifecycle Management tools , CASE & Configuration and version control
- Verification and Validation.
- Features of UX and UI
- Accessibility
- Wireframing and Prototyping
- Mood boards and storyboarding

### Databases

- Relationships
- Data dictionaries
- Entity relationship diagrams
- Conceptual, logical and data models
- Designing and implementing a database

### Developing Software using SQL

- Introduction to SQL
- SQL server basics
- Manipulating data in tables
- Creating and managing tables using simple queries
- Querying multiple tables
- Creating queries and tables using complex queries and views
- Controlling user access

### Introduction to Programming using Java

- Understand Java fundamentals
- Data types
- Construct code that manipulates strings
- Construct and evaluate code that creates, iterates and manipulates arrays and array lists
- Construct and evaluate code that performs parsing, casting and conversion
- Construct and evaluate arithmetic expressions
- Construct and evaluate code that uses branching statements
- Construct and evaluate code that uses loops
- Declare, implement and access data members in a class
- Declare, implement and access methods
- Construct and evaluate class definitions
- Troubleshooting syntax

### AI and Machine Learning

- Introduction to Artificial Intelligence and Machine Learning
- The importance of AI and machine learning in software development
- Regression – Linear and Logistic
- Neural Networks
- Typical algorithms used in clustering analysis
- Fuzzy logic

### Certified Entry-Level Python Programmer (Opt)

- Logic and structure
- Control Flow
- Literals & variables
- Data collections
- Operators
- Functions
- Data types
- Exception handling
- I/O operations

### Assessment Gateway & EPA

- EPA Preparation  
Dedicated one-to-one sessions to support the learner as they head towards assessment, putting them in the best possible position for achievement
- Assessment Phase  
EPA can take up to 3-4 months to complete. This involves a Work-based project with questioning and Professional discussion underpinned by portfolio