



Software Engineer

Course Information

2024 - 2025

Occupational Qualification: Software Engineer

Qualification Information

Level	SAQA ID	Credits
NQF 6	119458	240

Entry Requirements:

- NQF Level 4 Or
- Information Communication Technology related qualification Or
- At least three years' experience in Software Development

Occupational Purpose

A Software Developer (Software Engineer) researches, analyses and evaluates requirements for existing or new software applications and designs, develops, deploys, tests within scope of work(debugs) and maintains software applications.

Occupational Tasks:

- Design software to meet clients' needs, (NQF Level 6)
- Design and manipulate databases, (NQF Level 6)
- Develop software to add value to the organisation, (NQF Level 6)
- Test or debug source code to ensure client's needs are met, (NQF Level 5)

Assessments

- Formative assessment activities during the course of each module.
- Summative assessments at the end of each module
- An External Integrated Summative Assessment (EISA) at the end of the qualification.

NB: Access to the EISA is dependent on the successful of all qualification deliverables and formative and summative assessment at IQ.

Knowledge, Practical and Workplace Modules comprise the following competencies.

Knowledge Experience Module	Level	Credits
Software Engineering	6	20
Programming	6	20
Database Design and Information Systems	6	15
Fundamentals of Project Management in Relation to Software Engineering	5	5
Digital and Business Mathematics	5	15
Practical Module		
Document System Design	6	25
Design and Manipulate Databases	5	5
Programme and Deploy Applications	6	25
Test or Debug Source Code to Ensure Client's needs are met	5	15

Workplace Modules	Level	Credits
Software Design	6	30
Database Design and Manipulation	5	20
Software Development	6	30
Software Testing	5	15

Knowledge Module 01

Systems analysis and design	6	60%
Software and system testing	6	15%
System deployment and integration	6	15%
System management	6	5%

Knowledge Module 02

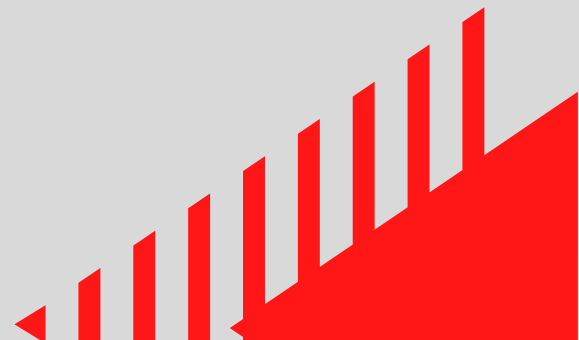
Introduction to programming	6	10%
Data structures & Algorithms	6	50%
Logical flow	6	30%
Error handling	6	10%

Knowledge Module 03

Introduction to information systems	6	20%
Components of an information system	6	20%
Principles of Database design	6	60%

Knowledge Module 04

Fundamentals of projects	6	40%
Fundamentals of Project management	6	60%



Knowledge Module 05

Knowledge Modules Breakdown

Basic Algebra	5	20%
Analytical Geometry	5	5%
Calculus	5	20%
Exponents and Logarithms	5	5%
Basic statistics and probability	5	25%
Equations and graphs	5	10%
Linear Programming	5	10%
Inequalities	5	5%

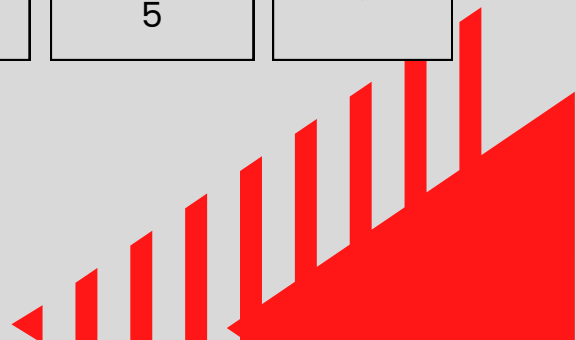
Practical Module 01

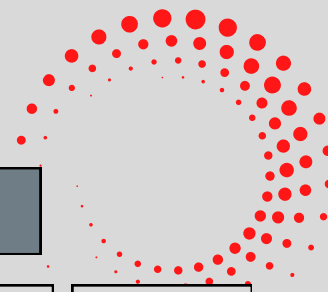
Practical Modules Breakdown

Define the problem	6	Credits 25
Conduct research to determine requirements	6	
Design the solution	6	

Practical Module 02

Design a database	5	Credits 5
Manipulate data in the database	5	





Practical Module 03

Practical Modules Breakdown

Write code	6	Credits 25
Debug source code	6	
Deploy applications to attain the desired systems' results	6	

Practical Module 04

Perform functional and non-functional tests.	5	15
--	---	----

Workplace Modules

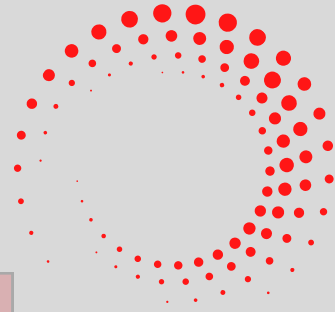
Workplace Modules Breakdown

Determine requirements for different software at least twice, within six to nine months	6	30
Participate as a team member in creating a software design at least twice, within six to nine months	6	

Workplace Modules

Participate as a team member in designing various databases at least twice, within six to nine months	5	20
Participate as a team member in manipulating data in various databases at least twice, within six to nine months.	5	





Workplace Modules

Write software code at least twice, within six to nine months

6

30

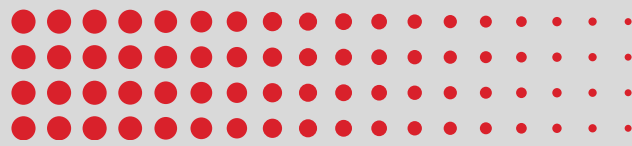
Workplace Modules

Execute functional and non-functional test at least twice, within six to nine months

5

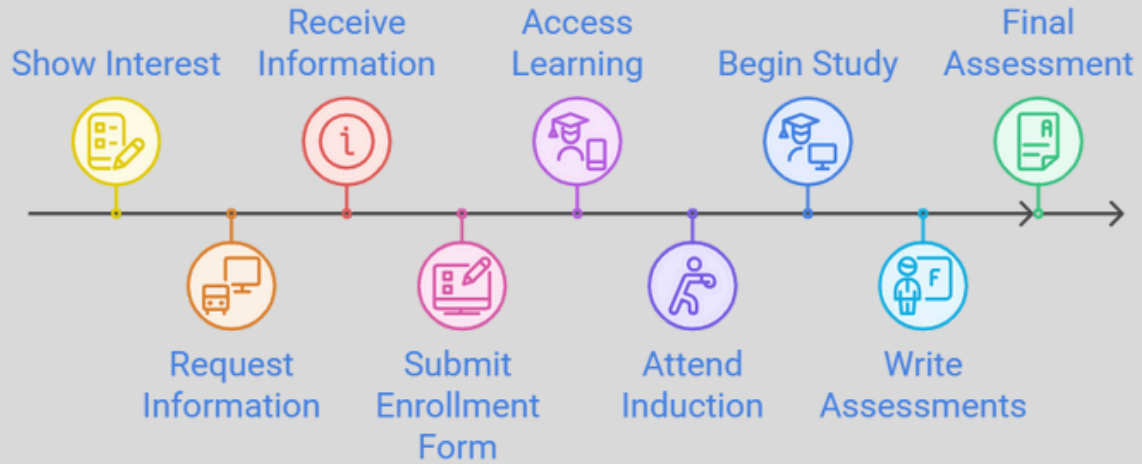
15





Customer Journey

Enrollment and Completion Process for IQ Programmes



IQ Commitment

Our Commitment to Your Success: Responsibilities to Our Learners from Enrolment

- Seamless Onboarding & Personalised Support
- Flexible, Engaging Learning
- Continuous Communication & Unrivalled Support
- Tailored Learning Paths & Career Development
- Recognition of Prior Learning
- Innovative Assessments & Real-World Learning
- Lifelong Learning & Alumni Support

Why Choose Us?

We don't just offer an education; we provide a transformative, personalised journey from day one to graduation—and beyond. With our flexible learning options, dedicated support, and focus on real-world success, we're more than just a college—we're your partner in achieving your future dreams.

Join Us Today and Experience the Difference!



www.iqetd.co.za



admin.iqetd.co.za



(031) 3045050

(011) 472 0918

