

SAQA ID
119458

DURATION
18 Months

CREDITS
240

QCTO
SETA

Occupational Certificate:
**SOFTWARE
ENGINEER**
NQF Level 6



WHO SHOULD STUDY THIS COURSE?

The purpose of this qualification is to prepare a learner to function as a Software Engineer.

A 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.

- A qualified learner will be able to:
- Design software to meet clients' needs.
- Design and manipulate databases.
- Develop software to add value to the organization.
- Test or debug source code to ensure client's needs are met.

Rationale

The National Certificate: Information Technology (Systems Development) qualification that is currently registered with the South African Qualification Authority (SAQA) is due for realignment. To address this, the Media Information Communication and Technology Sector Education and Training Authority (MICT SETA) has initiated the process of realigning this qualification through the Quality Council for Trades and Occupation (QCTO) qualification development model. The need to realign this qualification was further motivated by the fact that there are no registered occupationally based software engineering related qualifications. The design of the revised Software Engineer qualification comprises one (1) part qualification, namely, Software Tester.

Typical learners to enroll for this qualification are people with workplace experience in the systems development areas who would like to formalize their training; other professionals, school leavers and qualifying learner, who have already been exposed to the system development area and want to pursue a career towards Software Engineers. Upon completion of this qualification, learners may gain employment in the Software Engineering field within the Information and Communication Technology (ICT) industry and all other industries that require ICT services.

Career mobility is possible within the ICT environment with a wide variety of specialization options within the Telecommunications, Information Technology and Electronic Industries and other industries where IT is a key component, like the Financial Services or Insurance Industries. Learners who successfully complete the Software Engineering qualification can advance their careers by taking additional responsibilities such as leadership roles or pursuing entrepreneurial opportunities. Businesses, organizations and communities will benefit from this qualification by being served by qualified Software Engineers. These professionals will perform their roles efficiently and effectively by contributing to the building of the economy and South Africa as a whole, through developing innovative software solutions facing the country.

Exit Level Outcomes

- Apply knowledge to design software to meet clients' needs.
- Design and manipulate databases.
- Develop software to add value to the organisation.
- Test or debug source code.

Admission Requirements

The minimum entry requirement for this qualification is:

- Any NQF Level 4 qualification.

ASSOCIATED ASSESSMENT CRITERIA

Exit Level Outcome 1:

- Discuss design principles, methodologies and different types of solutions and explain the application, thereof.
- Apply information gathering techniques.
- Identify and recommend appropriate Information Technology (IT) solutions to business problems.
- Document system design.
- Create documentation for a software application..

Exit Level Outcome 2:

- Discuss general principles of databases, database models, database components and concepts and explain,
- the application thereof.
- Design database accordingly.
- Manipulate data within a database.

Exit Level Outcome 3:

- Discuss general principles of system integration, deployment methodologies and processes.
- Write code.
- Debug source code.
- Deploy applications to attain the desired systems' results.

Exit Level Outcome 4:

- Discuss general principles of software and system testing methodologies and techniques.
- Design functional and non-functional test specifications.
- Perform functional and non-functional tests against given test specifications.
- Record and report all relevant activities where required.
- Produce a software and system testing report.

Integrated Assessment:

Integrated Formative Assessment

The Skills Development Providers will use the curriculum to guide them on the stipulated internal assessment criteria and weighting. They will also apply the scope of practical skills and applied knowledge as stipulated by the internal assessment criteria. This formative assessment leads to entrance into the integrated External Summative Assessment.

Integrated summative assessment.

An External Integrated Summative Assessment, conducted through the relevant QCTO Assessment Quality Partner is required to issue this qualification. The External Integrated Summative Assessment will focus on the Exit Level Outcomes and Associated Assessment Criteria.

ARTICULATION OPTIONS

- Diploma in Information Technology in Software Development, NQF Level 6.
- Diploma in Information Technology in Web Development, NQF Level 6.
- Diploma in Information Technology Management, NQF Level 6.
- Bachelor of Information Technology in Business Systems, NQF Level 7.



KNOWLEDGE		Unit Standard	
	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
			75
PRACTICAL		Unit Standard	
	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
			70
WORK XP		Unit Standard	
	Software Design	6	30
	Database Design and Manipulation	5	20
	Software Development	6	30
	Software Testing	5	15
			95

CONTACT US

T: 011 568 6629 **E:** info@apexu.co.za

A: 100 West Street, Block C. Wierda Valley, Sandton.
apexu.co.za

