Aldabri 106 (Pty) Ltd t/a

Institute for Quality

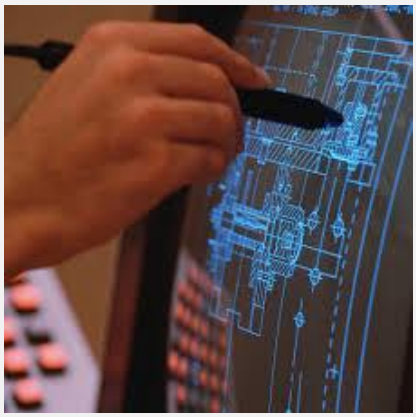
Education, Training and Development

ETDP - 0164

Learning for Life

National Certificate: Electrical Engineering

NQF Level 3



Course Information

Qualification: **National Certificate: Electrical Engineering**
SAQA ID: **63790**
Credits: **133**
NQF Level: **3**

This is the second of a three-level qualification series that reflect the workplace-based needs of the electrical field that is expressed by employers and employees, both now and for the future. This electrical engineering qualification provides the intermediate competencies required to work on integrated electrical circuits and installations. This qualification provides the learner with accessibility to be employed within the electrical engineering field and provides the flexibility to pursue different careers across various industry sectors and articulate within industries such as:

- √ Manufacturing and Engineering.
- √ Energy Sector.
- √ Mining.
- √ Chemical.
- √ Transport.
- √ Other related engineering industry sectors.

This qualification will enhance the status and productivity of the learner as well as contribute to improved quality, production rate and growth within the engineering sector. The range of typical learners at this level could include individuals preparing to qualify in occupations or trades such as:

- √ Electrician.
- √ Domestic Appliance Repair.

This intermediate set of skills acquired at NQF Level 3 enables the learner to work on integrated circuits and installations. Further learning at NQF Level 4 will enable the learner to work on integrated systems and installations and operate as a skilled worker performing Artisan duties in the electrical field.

This qualification could assist with the achievement of national government and industrial development policies and strategies to grow a pool of scarce and other related skills in support of sustainable economic growth. People working in the electrical engineering fields require specialized technical skills and knowledge in order to meet the requirements of continually changing environment of the various

industries. Through its design, this qualification will meet the needs of learners within the electrical engineering sectors who require technical expertise and essential knowledge needed to earn formal qualifications. This qualification facilitates access for previously disadvantaged groups and other learners to acquire the technical knowledge and skills that are required as well as provide access and mobility into higher-level more specialised occupations. This will allow the learner greater employability and support the development of small and medium enterprises (SME).

The purpose of this qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively within various industries, making use of electrical engineering knowledge and skills to meet the challenges of such an environment.

Qualifying learners will also be able to relate their learning to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures related to the safety, health, environment and quality systems that govern their workplace. This qualification will enable the learner to find employment as a skilled worker or become self employed as a single phase worker in the electrical field.

Qualifying learners at NQF Level 3 will be able to:

- √ Understand electrical equipment and protection technology and interpret integrated circuit schematics.
- √ Install and commission electrical equipment on integrated electrical circuits.
- √ Maintain and repair electrical equipment on integrated electrical circuits.
- √ Evaluate and solve familiar problems pertaining to electrical equipment, integrated electrical circuits and related processes.
- √ Accept responsibility for utilising and maintaining equipment without working under direct supervision.

The status and relevance of this qualification will attract and retain quality learners and employees, and is the second step along a recognised and meaningful career path. Qualifying learners will be able to relate the tasks and processes to scientific and technological principles and concepts. They will also be able to maintain and support the various policies and procedures integral to safety, health and the environment. Learner achievements in this qualification will also serve as a basis for

further learning to engage in more complex installation, maintenance and repair activities and processes.

Assessment

- √ Learners will be required to write an integrated summative assessment, for each module.
- √ Learners will be expected to compile a portfolio of evidence, which comprise all learning activities, assignment and projects.
- √ A logbook must be completed during the work-integrated learning.

RPL

IQ has a well-designed toolkit to RPL persons against this qualification. If you have worked in a management role for at least 4 years, you could have your competencies measured and get awarded the qualification.

Course outline

	ID	UNIT STANDARD TITLE	NQF	CREDITS
Core	259078	Install and commission electrical metering units, measuring instruments and control devices	Level 02	8
Core	10270	Construct Basic Electronic Circuits	Level 03	4
Core	258966	Inspect and test a single phase domestic installation	Level 03	10
Core	259077	Install and commission direct-on-line AC rotating machines and control gear	Level 03	10
Core	259038	Maintain and repair direct-on-line AC rotating machines and control gear	Level 03	8
Core	258965	Maintain lighting systems	Level 03	4
Core	9530	Manage work time effectively	Level 03	3
Core	258959	Operate on Low Voltage networks	Level 03	12
Core	258961	Repair and maintain electric power tools	Level 03	6

Core	258977	Understand basic electronic theory and components	Level 03	4
Core	258968	Wire and commission domestic or commercial electrical circuits	Level 03	8
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 03	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 03	2
Fundamental	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 03	4
Fundamental	119457	Interpret and use information from texts	Level 03	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 03	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 03	5
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 03	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 03	5
Elective	10244	Maintain and repair a high voltage security fence system	Level 02	4
Elective	116674	Demonstrate an understanding of energy efficiency	Level 03	4
Elective	258924	Fault Find, Test and Repair Domestic Appliances	Level 03	6
Elective	258997	Install batteries	Level 03	4
Elective	258930	Isolate a three-phase transformer and carry out tap changes	Level 03	2
			Total Credits	**133**