Take your next step now!
Follow through on your decision to enhance your life and your future prospects by enrolling in one of INTEC’s Electronics courses today!

Why study with us?
- Quality study material designed specifically for home study.
- The freedom to study at YOUR own pace, where and when it suits YOU.
- The widest range of courses for today’s world.
- Free consultations with INTEC’s career counselling and development specialists.
- Free study choice advice from INTEC’s Student Consultants.
- The convenience of online enrolment, contact and advice.
- Affordable, easy payment options.
- Ongoing study support and attention from qualified tutors.

Umalusi Accreditation
INTEC College (Pty) Ltd has been awarded provisional accreditation by Umalusi. Umalusi is the Council for Quality Assurance in General and Further Education and Training in South Africa - see www.umalusi.org.za
Provisional Accreditation No: FET 00037 PA

DHET Registration
INTEC College (Pty) Ltd has been granted provisional registration by the Department of Higher Education and Training as a private FET College, until 31 December 2014.
Provisional registration No. 2008/FE07/025 - see www.dhet.gov.za. For further information please refer to our website: www.intec.edu.za
INTEC College (Pty) Ltd is committed to meeting legislative requirements regarding accreditation and registration of private education and training providers in South Africa.
Wishing you every success in your studies and your future!

Call a Student Consultant:

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INTEC College (PTY) LTD FET 00037 PA is a member of both the National Association of Distance Education Organisations in South Africa (NADEOSA) and the Association of Private Providers of Education, Training and Development (APPETD).
INTEC is a Registered Credit Provider: NCRCP 2325

(E & OE)
TECHNICAL SCHOOL

Electronics

INTEC COLLEGE
Leader in Distance Learning

Build your future the INTEC way
Introduction 3
INTEC Basic Electronics Certificate 4
INTEC Understand and Test Basic Electronic Circuits Short Course Certificate 6
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Electronic Engineering Advanced Diploma 11
Electronics Technician Diploma 12
Home Appliance Repair Certificate 13
Radio and Hi-Fi Repair Diploma 14
TV and Video Repair Diploma 15
Pic Micro-Controller Development Diploma 16
Digital Systems Certificate 17
Digital Systems Diploma 18

Programme Types offered at INTEC College

**NQF**

National Qualifications are credit-bearing qualifications registered on the NQF (National Qualifications Framework) and accredited by a Quality Assurance Body, such as a SETA (Sector Education and Training Authority). A skills programme is an accredited component of a national qualification.

**Agent Programme**

Agent Programmes are programmes for which INTEC offers tuition, but where INTEC does not issue the final certificate. The Agent body issues the final certificate and manages the final examinations.

**INTEC Programme**

INTEC Programmes are INTEC’s own programmes that are not linked to the NQF and are not credit-bearing. However, they are in high demand and carry the approval of the INTEC Academic Board. INTEC Programmes fall into FIVE categories:

- **INTEC Career Programmes** are INTEC’s own programmes that are designed to teach you the skills and knowledge to succeed in a particular career.
- **INTEC Career Booster courses** are continuous professional development (CPD) short courses that help you add to your current professional knowledge in a particular field, and hence boost your abilities within your career.
- **INTEC Career Starter courses** are short courses that introduce you to a particular field or career; and that offer you the opportunity to explore an interest or a skills set without having to enrol on a full programme.
- **INTEC Job Creator courses** are designed to refine your skills in a particular field of interest; to teach you how to make a living from a particular skill, interest or hobby, and to help you start your own business.
- **INTEC Self-Enrichment courses** are offered for self-enrichment purposes. They will add value to your experience of life in a particular chosen field of interest.
Welcome to the dynamic and fast-growing world of electronics! Electronics is at the heart of modern industry and offers many career opportunities.

If you want to study at home and become involved in this exciting field, then our courses are right for you! We offer a wide range of distance-learning courses in electronics. These courses allow you the opportunity to receive electronics training and knowledge by studying at home through self-paced learning.

Our distance-learning courses make studying at home easy, since we supply the study material and electronics equipment for home experiments. We also provide you with a study programme designed for distance learning. No lab equipment or expensive books are required. Complete each of our courses at your own pace and schedule study times to suit your other commitments.

Our distance-learning courses are also valuable for people currently working in this field.
The INTEC Basic Electronics Certificate is an INTEC Career Programme. This programme is approved by the INTEC College Academic Board. This INTEC provider programme does not result in certification of competency in performing a listed trade, and does not lead to an artisan qualification as defined in the Skills Development Act.*

Enter the fastest-growing industry in the world! With INTEC’s Basic Electronics Certificate course, you will receive the theoretical knowledge for a solid foundation in this field. The course is designed for studying at home, to ensure that you will grasp the most important terms, symbols, formulae, concepts and basic principles with ease. Included in the course is a range of experiments for you to try out with your experiment kit and multimeter, which are provided FREE with your course.

Programme Type
The INTEC Basic Electronics Certificate is an INTEC Career Programme. This programme is approved by the INTEC College Academic Board. This INTEC provider programme does not result in certification of competency in performing a listed trade, and does not lead to an artisan qualification as defined in the Skills Development Act.*

FREE with your course
Your own Electronics Experiment Kit and Multimeter.

*INTEC reserves the right to change kit items without prior notification

Entrance Requirements
Grade 9 (Std. 7) with Mathematics or equivalent, or relevant work experience (2 years).

Course Duration
You should be able to complete this course within 18 months.

* This programme does not lead to a qualification on the NQF.
On successful completion of this course, you will receive your INTEC Basic Electronics Certificate.

All assignments are optional but you are required to write and pass three formal exams. Please note that exams are written in June and October of each year. You should complete an examination entry form and submit it to the College, together with the prescribed examination fee, before the closing date for the next examination. Please note: The fee is not included in your tuition fee.

Award
On successful completion of this course, you will receive your INTEC Basic Electronics Certificate.

Endorsement
This course is endorsed by the Design Technology and Management Society International (DTMSI).
Learn how to understand and test basic electronic circuits.

In the modern world, with its rapid advances in technology, electronics is at the forefront. It plays an important role in almost every manufactured item around you.

This course will teach you the following:

- Understand principles of electronics
- Understand electronic and related components
- Understand basic electronic concepts
- Understand the operation of basic electronic circuits
- Use measuring equipment to test basic electronic circuits
- Construct basic electronic circuits
- Explain the basic concepts of electricity
- Explain magnetic theory
- Explain the basic fundamentals of power generation and distribution
- Apply and explain electrical units and symbols
- Draw and interpret series, parallel and series-parallel circuits
- Draw DC resistive circuits and calculate variables
Programme Type

The INTEC Understand and Test Basic Electronics Circuits Short Course Certificate is part of the INTEC Career Starter series. The INTEC Understand and Test Basic Electronics Circuits Short Course Certificate is an INTEC short course. This programme is approved by the INTEC College Academic Board. This INTEC provider programme does not result in certification of competency in performing a listed trade, and does not lead to an artisan qualification as defined in the Skills Development Act.*

Entrance Requirements
Grade 9 (Std. 7) with Mathematics and Physical Science or equivalent, or relevant work experience (2 years).

Course Duration
You should be able to complete this course within 12 months.

Course Content
• Construct and test basic electronic circuits
• Understand fundamentals of electricity

Assessment
You are required to complete and submit all the assignments to the college for marking. All assignments must be successfully passed in order to obtain the award.

Award
On successful completion of all your assignments, you will receive the INTEC Understand and Test Basic Electronic Circuits Short Course Certificate

* This programme does not lead to a qualification on the NQF.
INTEC Using Basic Electronic Test Instruments Short Course Certificate

This course will introduce you to the aspects of electrical test instruments. However, before you can use any of these instruments you have to learn how to protect yourself (and those working with or around you). It is important that you understand the dangers and hazards that exist when you work in an electrical environment.

Hand tools are an important component in the workplace. You need to take good care of your hand tools, as the quality of your work depends on the quality and condition of the tools that you use. You need to know how to identify and select the correct tools, as you should use only the appropriate tools – which are all designed for their intended purpose – in order to avoid damaging them or the components that you work on.

You will learn why it is important to adhere to safety signage regulations and safety procedures related to a working environment, as well as how to follow appropriate safety procedures before, during and after the job process.

Programme Type
The INTEC Using Basic Electronic Test Instruments Short Course Certificate is part of the INTEC Career Starter series. The INTEC Using Basic Electronic Test Instruments Short Course Certificate is an INTEC short course. This programme is approved by the INTEC College Academic Board. This INTEC provider programme does not result in certification of competency in performing a listed trade, and does not lead to an artisan qualification as defined in the Skills Development Act.*

Entrance Requirements
Grade 9 (Std. 7) with Mathematics and Physical Science or equivalent, or relevant work experience (2 years).

* This programme does not lead to a qualification on the NQF.
You are required to complete and submit all the assignments to the college for marking. All assignments must be successfully passed in order to obtain the award.

On successful completion of all your assignments, you will receive the INTEC Using Basic Electronic Test Instruments Short Course Certificate.
This programme has been designed for individuals interested in a career in electronics. The qualification will enable the transfer of skills and competencies applicable to basic electronics and electronic principles used for the repairs and maintenance of electrical/electronic circuitry. In addition, you will be able to construct electronic components, and describe the role and functioning of both analogue and digital logic circuits in a safe manner. The qualification also allows access into further qualifications in the field of electrical sciences.

**Admission Requirements**

Grade 10 (Standard 8) with Mathematics or equivalent, or verifiable and relevant working experience (8 months) preferably in a technical environment

**Duration**

You should be able to complete this course within 18 months.

**Certification**

On successful completion of this course, you will receive a Certificate: Basic Electronics.

**Career Opportunities**

This qualification will enable you to pursue a career in:

- Home Entertainment Equipment Repair
- Power Tool Repair
- Telecommunications Equipment Repair
- Electronics
Description

The Advanced Diploma in Electronic Engineering provides a solid overview of the current state of electronic engineering practice. The programme will enable you to describe the pulse generation for use in electronics circuits and systems, explain the operation of circuits for forming square, rectangle, saw tooth and triangular waves, discuss electronic solid-state motor control and servo systems and conduct troubleshooting. The programme thus ensures the relevant skills and competencies to enable the use and application of electronic engineering principles in a variety of operational contexts.

Admission Requirements

Grade 12 (Std 10) or equivalent. Student may be given exemptions upon completion of the Certificate: Basic Electronics or the Diploma: TV and Video Repair with INTEC, or Electronics Technician Diploma or based on previous qualifications (prior learning), age and working experience.

Duration

You should be able to complete this course within 36 months.

Certification

On successful completion of this course, the student will receive an Advanced Diploma: Electronic Engineering.

Career Opportunities

This qualification will enable you to pursue a career in:

- Electronics Engineering
- TV and Radio Repairing
- Computer Repairing
- ICT Systems
- Electrical Engineering
- Telecommunications Industry
The Diploma: Electronics Technician will provide you with a broad knowledge and understanding of the mathematical and physical science principles relevant to the field of electronics technology. These skills and competencies will support effective troubleshooting, maintenance, repair, testing, installation and assembly of electronic circuits and equipment within a workshop environment. The programme furthermore enables the construction of electronic components with specific emphasis on their functioning and the physical science principles informing their operation. The programme will broaden your knowledge and competencies as a multi-skilled technician in various electronics industries.

Admission Requirements

Grade 12 (Standard 10) or equivalent, or the Certificate: Basic Electronics, with INTEC, or the Certificate: Digital Systems, with INTEC, or relevant working experience (3 years) preferably in a technical environment.

Duration

You should be able to complete this course within 24 months.

Certification

On successful completion of this course, you will receive a Diploma: Electronics Technician.

Career Opportunities

This qualification will enable you to pursue a career in:

- Electronics
- Electrical Engineering
- Digital Systems
Certificate: Home Appliance Repair
Qualification: CertHomAppRep
(INTEC) NQF 4
SAQA ID: 21107
NQF Level 4 Credits: 120

Description
Within the field of Home Appliance Repair, you will be able to repair main household appliances, such as washers and dryers, gas and electric stoves, microwave ovens, dishwashers and refrigerators through the use and application of physical science and electrical and electronics principles and calculations. From the knowledge and skills achieved through this programme, individuals will have the ability to identify faults, predict possible causes and repair appliances. The programme also supports the necessary competencies to replace or repair faulty components whilst maintaining relevant operational safety.

Admission Requirements
Grade 10 (Standard 8) or equivalent, or verifiable and relevant working experience (2 years) preferably in a technical environment.

Duration
You should be able to complete this course within 18 months.

Certification
On successful completion of this course, you will receive a Certificate: Home Appliance Repair.

Career Opportunities
This qualification will enable you to pursue a career in:

• Home Appliance Repairs
Description

If you are interested in the use of physical science (electrical and electronics) for the maintenance of home audio equipment, the Diploma: Radio and Hi-Fi Repair is a good choice. The qualification will empower you with the technical skills and competencies to test and repair receivers, amplifiers and recorders amongst other components. The underpinning mathematical and physical science knowledge will furthermore ensure a solid understanding of electrical and electronic circuitry, enabling additional use and application in the field of electrical science.

Admission Requirements

Grade 10 (Standard 8) or equivalent or the Certificate: Basic Electronics with INTEC, or verifiable and relevant working experience (8 months) preferably in a technical environment.

Duration

You should be able to complete this course within 24 months.

Certification

On successful completion of this course, you will receive a Diploma: Radio and Hi-Fi Repair.

Career Opportunities

This qualification will enable you to pursue a career in:

- Radio and Hi-Fi Repair
- Electronics
Description

Repair Technicians set up and fix televisions, audio and video equipment, entertainment systems and satellite dishes. Repair staff may work in a retail service environment or travel to customers’ homes. The qualification supports a solid understanding of electronics and current TV/Video technology. It furthermore enables understanding and use of television receivers, signal propagation and reception principles as well as the reading and interpretation of circuit diagrams in order to troubleshoot and repair electrical circuits. This qualification will provide a good foundation for entering the electronics industry.

Admission Requirements

Grade 10 (Standard 8) or equivalent or the Certificate: Basic Electronics Certificate with INTEC, or verifiable and relevant working experience (8 months), preferably in a technical environment.

Duration

You should be able to complete this course within 24 months.

Certification

On successful completion of this course, you will receive a Diploma: TV and Video Repair.

Career Opportunities

This qualification will enable you to pursue a career in:

• TV and Video Repairs
• Basic Electronics
• Basic Computer Repairs

Diploma: TV and Video Repair
Qualification: DiplTvRep (INTEC) NQF 6
SAQA ID: 21124
NQF Level 6 Credits: 240
PICs are popular with industrial developers and hobbyists alike due to their low cost, wide availability, large user base, extensive collection of application notes, and availability of low-cost or free development tools. The Diploma: PIC Micro-Controller Development is an instructional hands-on training experience in the operation and application of PIC micro-controllers. Skills and competencies gained will enable the designing and building of application systems, the development of object-oriented applications software in the Assembler language, the simulation of applications, the programming of controllers and the evaluation of controller applications.

Admission Requirements

Grade 12 (Standard 10) or equivalent, or the Introduction to Programming Certificate with INTEC, or verifiable and relevant working experience (3 years) preferably in an IT or programming environment.

Duration

You should be able to complete this course within 24 months.

Certification

On successful completion of this course, you will receive a Diploma: PIC Micro Controller Development.

Career Opportunities

This qualification will enable you to pursue a career in:

• PIC Controller Development
• Assembler Programming
Description

The Diploma: Analytical Chemistry provides you with advanced knowledge of physical chemistry, quantitative analysis, inorganic chemistry and micro-chemical analysis amongst other scientific skills. Additional skills and competencies include report writing, cost controlling, management skills and qualitative and quantitative analysis. The programme equips the student with the required background and knowledge to build a career in the field of chemical analysis and its application in various industries.

Admission Requirements

Grade 12 (Standard 10) or equivalent, or the Certificate: Chemical Laboratory Assistant with INTEC, or verifiable and relevant working experience (3 years).

Duration

You should be able to complete this course within 24 months.

Certification

On successful completion of this course, you will receive a Diploma: Analytical Chemistry.

Career Opportunities

This qualification will enable you to pursue a career as a:

• Chemical Technologist
• Chemical Analyst
• Research Assistant
• Quality Controller
• Laboratory Manager
Description

The Diploma: Digital Systems covers the principles and techniques that are common to all digital systems from a simple on/off switch to the most complex computer systems. You will gain a full understanding of the operational principles of digital systems and will gain the ability to use and apply these skills in order to analyse and troubleshoot digital system design, operation and maintenance. The programme likewise focuses on the operations and limitations of digital to analogue systems, the use of computer control systems and the ability to write entry-level controller programmes. The programme will broaden your knowledge and competencies applicable to various industries utilising electronics and digital systems.

Admission Requirements

Grade 12 (Standard 10) or equivalent, or the Certificate: Digital Systems with INTEC, or verifiable and relevant working experience (3 years) preferably in a technical environment.

Duration

You should be able to complete this course within 24 months.

Certification

On successful completion of this course, you will receive a Diploma: Digital Systems.

Career Opportunities

This qualification will enable you to pursue a career in:

- Digital System Design
- Digital Systems Engineering
- Digital Systems Controls
- Electronics