



# Bachelor of Science in Information Technology (Robotics).

SAQA ID 80887 NQF level 7

## 🕒 Qualification duration

### Full-Time

Minimum: 3 years

Maximum: 5 years

### Part-Time

Minimum: 5 years

Maximum: 7 years

## ☰ Qualification description

Be part of the next industrial revolution. The specialised nature of this degree prepares you for work in many areas in the Information Technology industry that are related to Robotics and Control Engineering.

Robotics is an exciting branch of Information Technology that involves the conception, design, manufacture, and operation of robots. It primarily deals with the design, construction, operation, and use of robots, as well as computer systems for their control, sensory feedback, and information processing.

Students will be taught the mechanics, planning and control of robots. They will also learn how to build and control autonomous robots using Python and Raspberry pi. This qualification is channelled toward students that are ready to use the above technologies for the development of machines that can substitute for humans and replicate human actions.

You will also develop essential skills for the world of work, such as analytical and abstract thinking, effective decision-making, self-discipline, being innovative, adapting to change, working in teams and communicating effectively.

## 📄 Qualification accreditation

- Accredited by the Higher Education Quality Committee (HEQC) of the Council on Higher Education (CHE).
- Registered with the South African Qualifications Authority (SAQA).

This qualification is offered at the following campuses:

- All Eduvos campuses

## ✅ Entry requirements

1. South African National Senior Certificate (NSC) with Bachelor degree endorsement.
2. Or a National Certificate (Vocational) level 4 issued by the Council of General and Further Education and Training with Bachelor's degree endorsement.
3. Or a letter or certificate confirming an exemption from Universities South Africa (USAf) for any other School leaving results.
4. Or completion of a Bachelor's degree.
5. Or completion of relevant Foundation Programme along with a letter or certificate of exemption from Universities South Africa (USAf).
6. Or completion of relevant Higher Certificate.
7. \*A student with Mathematics Literacy (50% or more) must enrol for, and complete, Introduction to Mathematics and Mathematics for Degree Studies B (IT) before attempting Mathematics 1A.  
A student with Mathematics (less than 50%, but greater than or equal to 30%) must enrol for, and complete Mathematics for Degree Studies B (FPMIA0) before attempting Mathematics 1A (ITMTA1).

## 📁 Possible career options

Career choices for you as a Bachelor of Science in Information Technology (Robotics) graduate are varied, and employment opportunities exist in both IT and in business:

- Database Administration
- Database Management
- IT Project Management
- Robotics Programming
- Systems Analysis and Design
- Robotics Engineering
- Control Engineering
- Cloud Computing



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## Qualification structure

### Year 1

This year of study lays the foundation for students and aims to focus on the basic principles of programming with regards to specific software languages, computer literacy (Microsoft), the fundamentals of hardware and networking as well as the general knowledge of what IT is about.

- Advanced Information and Computer Skills
- Business English
- Computer Network and Security
- Computer Skills
- Human Computer Interaction
- Introduction to Information Systems
- Introduction to Programming
- Mathematics 1A
- Procedural Programming
- Technical Writing and Communication

### Year 2

This year of study builds on the foundation of the first year. More group engagement is encouraged, and focus is placed on specialised modules that prepare the students for this specialised stream.

- Control Systems and Applications
- Data Structures and Algorithms in Python
- Database System Design, Implementation and Management
- Database Management System
- Internet Server Management
- IT Project Management
- Math Fundamentals for Robotics
- Machine Learning Algorithms
- Network Security
- Systems Analysis and Design

### Year 3

During this year students are encouraged to think for themselves. All modules focus mainly on higher-order thinking and are stated below:

- Cloud Computing: A Practical Approach
- Industry 4.0
- Logistics and Supply Chain Management
- Operating Systems
- Object Oriented System Analysis and Design
- Project: Python Robotics
- Soft Skills for IT Professionals
- Web Development and e-Commerce