

What is Civil Engineering?

Civil Engineering professionals are:

- creative, logical thinkers and problem solvers
- interested in improving the quality of life
- environmentally conscious and enjoy nature
- confident and like challenges
- independent decision-makers but also good team players
- systematic in their approach to studies and work
- able to sell their ideas both verbally and graphically
- registered with the Engineering Council of South Africa to be professionally recognised

The CIVIL ENGINEERING professional will:

- plan, design and build infrastructure
- examine the site and likely impact on the environment
- carry out necessary technical analysis and design
- communicate with the client, the community and other interested parties to ensure that needs, expectations and concerns are addressed adequately
- supervise the preparation of plans and details
- evaluate all the financial requirements
- plan and execute the construction
- ensure that the required standards of quality are met
- monitor performance and maintenance

Address enquiries to:

The Communications Department The South African Institution of Civil Engineering

Tel: (011) 805-5947 Private Bag X 200
Fax: (011) 805-5971 Halfway House
E-mail: civilinfo@saice.org.za 1685

Website: www.civils.org.za

SAICE has been the mouthpiece & representative of the Civil Engineering professional since 1903

The TECHNOLOGIST will:

- undertake work where engineering principles are applied in a well recognized or standard manner
- do similar tasks to those performed by professional engineers but in one or more specialist fields
- work independently and are held responsible for the work under their control
- often become associates, partners or directors in consulting firms
- or may be appointed to senior positions in local, provincial or national government

The TECHNICIAN will:

- make the practical contribution to the civil engineering team
- be responsible for translating the ideas and calculations of the professional engineer to workable schemes in design
- understand and apply standard engineering techniques
- assume a management role over artisans on construction
- or may be concerned with laboratory testing and control

The Civil Engineering professional of the 21st century is not only a technical person but also deals with other issues including:

- information technology
- project management
- contract law and document preparation
- business management and development
- survey techniques
- mediation and arbitration
- social and communication skills to deal with indemnity issues

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Careers in CIVIL Engineering



Structural
Bridges, buildings & towers
Dams & sewers



Railway and Harbour
Railway networks
Facilities in harbours
Coastal structures



Information Technology
Transmission & storage of data
Computers in civil engineering design



Environment
Impact studies
Elements & resources



Water
Dams
Pipelines
Reservoirs
Water treatment
Wastewater treatment

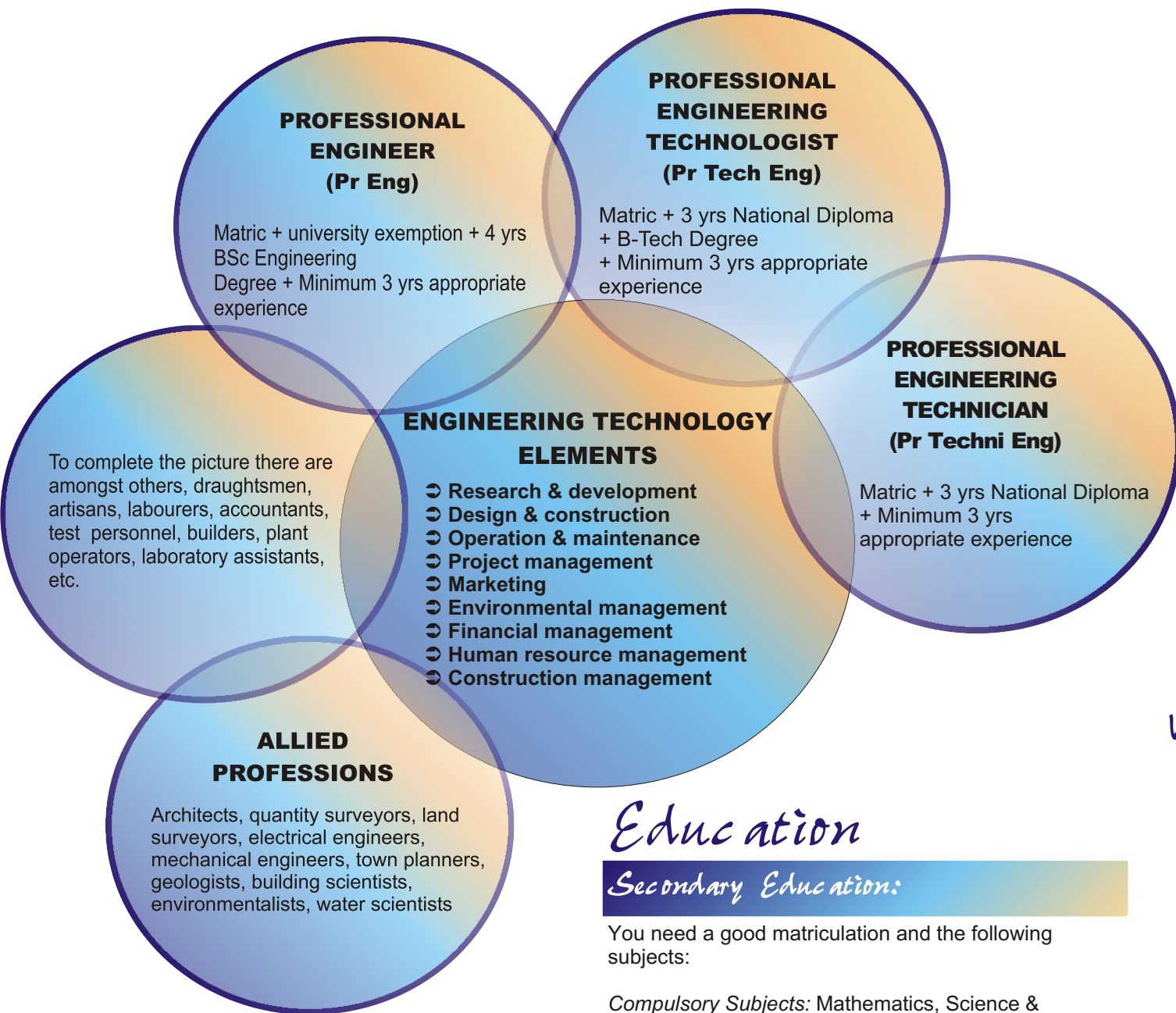


Geotechnical
Rock anchors & piling,
tunnels & foundations



Transportation
Public transport
Airports
Traffic Control
Roads





Education

Secondary Education:

You need a good matriculation and the following subjects:

Compulsory Subjects: Mathematics, Science & 1st Language on Higher Grade

Recommended Subjects: English, Computer Science & Geography

Tertiary Education:

THE PROFESSIONAL ENGINEER

(innovative, holistic approach, leader, conceptual thinker)
 4 yrs BSc Eng (Civil Engineering) at a university
 3 yrs post degree appropriate engineering experience

THE PROFESSIONAL TECHNOLOGIST

(applied technology, transferring ideas into practice)
 3 yrs National Diploma at a technikon & in addition 2 yrs of part-time study to obtain a BTech degree
 3 yrs post degree appropriate engineering experience

THE REGISTERED TECHNICIAN

(practical, hands-on, technical)
 3 yrs National Diploma at a technikon
 3 yrs post degree appropriate engineering experience

Bursary opportunities:

Employers
 Government
 Universities
 Technikons
 SAICE

Where will my education take me?



Work in the public sector in municipalities, government departments & government agencies



Work in the private sector in consulting or contracting



Work indoors/outdoors



Work almost anywhere in the country & abroad



Further education to become a specialist or a generalist