



Careers in Construction



Master Builders is an employers' organisation registered in terms of the Labour Relations Act and exists to represent the interests of members, as well as to provide them with specialist support services to assist them in the successful running of their businesses. The organisation has been in existence since 1901 and is recognised and respected by a wide range of role players in the building industry and beyond.

The Master Builders KwaZulu-Natal Training Academy is housed at the Master Builders Centre in Westville and boasts modern training facilities. Training is also provided at our satellite offices in Zululand and the South Coast.

A key priority has been making construction a career of choice and creating awareness of construction-related disciplines and career options at the school level. To this end, the Academy has held many successful career days and engaged in numerous school visits.

The Training Academy is CETA accredited and offers CPD point validation for several courses. Our training programmes are intended to provide access to employed candidates, unemployed candidates, and school leavers, as well as to facilitate workplace training.

Master Builder's Association KwaZulu Natal makes no representations or warranties of any kind, expressed or implied, about the completeness, accuracy, reliability, suitability, or availability with respect to the information provided. Any reliance you place on such information is therefore strictly at your own risk. Availability of any study programme and entry requirements thereof must be confirmed by the University concerned.

What does the construction industry do?

The construction industry focuses on the ideation, creation, and maintenance of residential, commercial, and industrial buildings. They also work on building and maintaining structures such as roads, bridges, and utility systems. While many people may think the construction industry only relates to new developments, professionals within this industry are also involved in additional remodelling, repairing and maintaining of existing structures. Furthermore, the construction sector is a major driver of employment and socio-economic development.



Construction Education & Training

The National Qualifications Framework groups construction qualifications into field number 12 – Physical Planning and Construction and this is then further divided into four sub-themes.

The four sub-themes are:

1. **Building Construction** - This category includes skills qualifications such as plumbing, shop fitting, bricklaying, plastering, tiling, etc.
2. **Built Environment Professions** – This category covers professional qualifications such as architectural and engineering degrees, quantity surveyors and land surveyors.
3. **Roads and Civil Construction** - This includes contractor development, site preparation, construction management and supervision and maintenance & repair of roads.
4. **Materials Manufacturing** – This relates to the manufacture of materials used in construction, such as tiles, bricks, concrete, cement, plaster and aluminium assembly and installations.

Career pathways through tertiary studies

PLEASE NOTE THAT TERTIARY INSTITUTIONS ENTRANCE REQUIREMENTS MAY DIFFER FROM EACH OTHER, AND THE FOLLOWING CONTENT IS MEANT TO GUIDE PROSPECTIVE LEARNERS HOWEVER EACH LEARNER SHOULD CONTACT THE INSTITUTION IN QUESTION TO LEARN THE SPECIFIC ADMISSION REQUIREMENTS.

Architect

An Architect is a person who plans, designs, and oversees the construction of buildings.

School subject requirements: A Level 4 pass (50%) in English as a home language or First Additional Language, and a Level 4 pass in Mathematics (Maths Literacy not accepted).

What to study: BSc: Architectural Design.

Where to study: Durban University of Technology; Tshwane University of Technology; Nelson Mandela University; University of Pretoria; University of KwaZulu-Natal; Cape Town University.

Building Science

Building science is the collection of scientific knowledge that focuses on the analysis of the physical phenomena affecting buildings. Building physics, architectural science and applied physics are terms used for the knowledge domain that overlaps with building science.

Building science traditionally includes the study of the indoor thermal environment, including the acoustics lighting, air quality, and energy efficiency. These areas are studied in terms of physical principles. Their relationship to building occupant health, comfort, productivity, and how they can be controlled by the buildings electrical and mechanical systems.

School subject requirements: A level 4 (50%) for Mathematics; Physical Science; English (first or additional Language).

What to study: ND: Structural Steelwork Detailing, Diploma in Built Environment in Construction studies, Diploma in Construction, Diploma in Building, Bachelor of Building Science.

Where to study: Durban University of Technology; Central University of Technology; Tshwane University of Technology; Nelson Mandela University; Walter Sisulu University.

Civil Engineering

A Civil Engineer is a person who is involved with the application of planning, designing, constructing, maintaining and operating infrastructure, while protecting the public and environmental health, as well as improving existing infrastructure that may have been neglected.

Civil engineering is one of the oldest engineering disciplines because it deals with the constructed environment including planning, designing, and overseeing the construction and maintenance of building structures and facilities, such as roads, railroads, airports, bridges, harbours, channels, dams, irrigation projects, pipelines, power plants and water and sewage systems.

School subject requirements: A level 4 (50%) for Mathematics; Physical Science; English (First or additional Language).

What to study: ND: Management of Civil Engineering Construction Processes, BEng: Bachelor of Engineering, BSc: Civil Engineering, BEng: Civil Engineering, Diploma in Civil Engineering.

Where to study: Durban University of Technology; Central University of Technology; Mangosuthu University of Technology; Nelson Mandela University; Walter Sisulu University; University of Pretoria; University of KwaZulu-Natal; Cape Town University.

Construction Management

Construction management (CM) is a professional service that uses specialised, project management techniques to oversee the planning, design, and construction of a project, from its beginning to its end. Contractors are assigned to a construction project during the design or once the design has been completed by a licensed Architect or a licensed Civil Engineer. A Construction Manager needs to have time management, cost management and quality management skills. They need to be able to make decisions and handle members of the public. They also need the technical skills of mathematics, working with drawings and human resources.

School subject requirements: A level 4 (50%) for Mathematics; Physical Science; English (First Language) OR a Level 5 for English (First Additional Language). CUT requires all subjects at a level 5.

What to study: BSc: Construction Studies/Management, Bachelor of Construction, Bachelor of Construction Management, BSc: Construction Economics and Management.

Where to study: Durban University of Technology; Central University of Technology; Nelson Mandela University; Walter Sisulu University; University of Pretoria; Cape Town University.

Electrical Engineering

Electrical engineering deals with the study, design, and application of equipment, devices, and systems which use electricity, electronics, and electromagnetism. Electrical engineering is now divided into a wide range of different fields, including computer engineering, systems engineering, power engineering, telecommunications, radio-frequency engineering, signal processing, instrumentation, photovoltaic cells, electronics and optics and photonics. Practising engineers may have a professional certification and belong to a professional body or an international standards organisation. Electrical Engineers work in a very wide range of industries and the skills required also vary. These skills range from circuit theory to the management skills of a project manager.

School subject requirements: A level 4 (50%) for Mathematics; Physical Science; English (First or additional Language).

What to study: BSc: Electrical Engineering, BEng: Electric & Electrical Engineering, Diploma in Electrical Engineering.

Where to study: Central University of Technology; Mangosuthu University of Technology; Tshwane University of Technology; Nelson Mandela University; Walter Sisulu University; University of Pretoria; University of KwaZulu-Natal; Cape Town University.

Property Development

Property development, is a business process, encompassing activities that range from the renovation and re-letting of existing buildings to the purchase of raw land and the sale of developed land to others. Property developers are the people and companies who coordinate all of these activities, converting ideas from paper to property. Property development is different from construction or housebuilding; however many developers also manage the construction process or engage in housebuilding. Developers work with many different counterparts along each step of this process, including Architects, City Planners, Engineers, Surveyors, Inspectors, Contractors, Lawyers, Leasing Agents, etc.

School subject requirements: A level 5 for Mathematics and English (First or additional Language).

What to study: BSc: Property Development.

Where to study: University of Witwatersrand, Johannesburg.

Quantity Surveying

A Quantity Surveyor (QS) is a construction industry professional with expert knowledge of construction costs and contracts. Qualified professional Quantity Surveyors are known as Chartered Surveyors. Quantity Surveyors are responsible for managing all aspects of the contractual and financial side of construction projects. They help to ensure that the construction project is completed within its projected budget. Quantity Surveyors are also hired by contractors to help with the valuation of construction work for the contractor, help with bidding and project budgeting, and the submission of bills to the client. Some of the duties include the following:

- Cost estimation, planning and management.
- Analysing terms and conditions in the contract and predicting potential risks and taking precautions to mitigate such risks.,
- Forecasting the costs of different materials needed for the project, preparing tender documents, contracts, budgets and other documentation and taking note of changes made and adjusting the budget accordingly.

School subject requirements: A level 5 for Mathematics and English (First or additional Language) and a level 4 for Physical Science.

What to study: BSc: Quantity Surveying, BSc: Land Surveying, Bachelor of construction Quantity Surveying.

Where to study: Central University of Technology; Mangosuthu University of Technology; Nelson Mandela University; University of Pretoria.

Other pathways into a career in Construction

Apprenticeship - An apprenticeship is a technical training system, which includes practical and theoretical components under the guidance of a mentor to pass phase tests. After successfully completing the above, the apprentice will sit for a final trade test and qualify as an artisan.

Trade Test - To qualify as a designated tradesman, an apprentice must pass an approved trade test in the relevant trade. Such trade tests must be taken at a test centre accredited by the National Artisan Moderation Body (NAMB).

Candidacy - This is a programme that enables qualified people to obtain professional registration with the respective council. A candidate is a person who has completed a University Degree or University of Technology Diploma and met the requirements for registration in a category. They are in a position to gain experience through employment.

Internship - A structured and monitored work experience opportunity offered by an employer to a graduate for a fixed period of time with the objective of gaining work experience within a real work environment. An intern must be in possession of a University Degree, a University of Technology Diploma, or a TVET College Qualification.

Learnership - A learnership is a learning programme that leads to an occupational qualification or a part qualification. A learnership is traditionally a twelve-month programme which combines institutional learning (theory) and work experience (practical).

A skills programme is occupationally based and when completed, provides credits towards a full qualification. A skills programme is a shorter version of a learnership and is meant to address short-term needs with long-term benefits. The intention is to ultimately complete an entire qualification.

Recognition of Prior Learning (RPL) is a process that compares previous learning of a learner, whether it's done formally or informally with experience. In practice, the learners or employees with non-traditional training are assessed against the same unit standards or exit-level outcomes of qualifications using the same assessment criteria for learners studying at traditional institutions.



General Prerequisite requirements for skills programmes:

General communication skills should be at a higher level or
equal to NQF level 2

English skills should be at a higher level or equal to NQF Level 1

Mathematical literacy should be equal to NQF Level 2

Basic knowledge of construction works Safe work practices on a
construction site and working effectively as part of a team.

National and Occupational Certificates can be done at various training colleges across the country, such as:

Eastern Cape: Buffalo City TVET College

Gauteng: Central Johannesburg TVET College

KwaZulu-Natal: Coastal KZN TVET College

Mpumalanga: Nkangala TVET College

Western Cape: Boland TVET College





Community House Builder

A Community House Builder has a range of limited technical skills that are required to build a house according to basic designs. They need to be able to understand the legislative, safety and quality systems that govern the construction workplace. Some job tasks include:

- The erection, connection and cladding of light steel frames.
- The erection of ceilings and installing appropriate insulation where required.
- The ability to measure and order building materials and identify, select and maintain required tools and equipment.

What to study: NC: Construction Tiling, NC: Surveying, NC: Construction: Concreting, NC: Construction, NC: Building And Civil Construction, GETC : Construction.

Bricklayer

A Bricklayer, which is related to but different from a mason, is a craftsman and tradesman who lays bricks to construct brickwork. The terms also refer to personnel who use blocks to construct blockwork walls and other forms of masonry. A stone mason is one who lays any combination of stones, cinder blocks, and bricks in the construction of building walls and other works. Bricklaying is a part of masonry.

What to study: NC: Construction Masonry.

Plumber

A Plumber is a tradesperson who specializes in installing and maintaining systems used for potable (drinking) water, and for sewage and drainage in plumbing systems. Common plumbing tasks and skills include:

- Reading drawings and specifications.
- Detecting faults in plumbing appliances and systems.
- Installing, repairing, and maintaining domestic, commercial, and industrial plumbing fixtures and systems.
- Testing pipes for leaks using air or water pressure gauges and ensuring that all safety standards and Building Regulations are met.

What to study: NC: Construction Plumbing, FETC: Plumbing, NC: Hot Water System Installation.

Electrician

An Electrician is a tradesperson specialising in the electrical wiring of buildings, transmission lines, stationary machines, and related equipment. Electricians may be employed in the installation of new electrical components or the maintenance and repair of existing electrical infrastructure. An auto electrician is a tradesperson specialising in the electrical wiring of motor vehicles.

What to study: FETC: Electrical Engineering.

Construction Health and Safety Officer

A Construction Health and Safety Officer is a person who is appointed by an employer to assist site management with the planning, implementation and management of construction health and safety systems and who has satisfied the registration criteria of the SACPCMP to perform the prescribed functions in compliance with the Occupational Health and Safety Act. Construction Health and Safety Officers are expected to demonstrate detailed knowledge of construction health and safety requirements at operational levels, with the ability to support construction management, identify relevant legal requirements and monitor continuous implementation controls. A construction Health and Safety Officer is also required to show the ability to mentor, coach and guide construction health and safety representatives.

What to study: NC: Construction Health and Safety.

Construction Supervisor

Construction Supervisors are responsible for the management and safety of construction projects. Through planning, organizing, and controlling projects, they create an efficient and safe workplace, including materials and personnel. Depending on the size of the project or company, they may supervise teams of electricians, mechanics, or engineers. Construction supervisors also help develop contracts, liaise with subcontractors and vendors, and perform other administrative tasks.

What to study: NC: Construction Contracting, NC: Community House Building, NC: Supervision of Building Construction Processes

Plasterer

A Plasterer is a tradesman who works with plaster, such as forming a layer of plaster on an interior wall or plastering decorative mouldings on ceilings or walls. The process of creating plasterwork, called plastering, has been used in building construction for centuries.

What to study: NC: Construction Plastering.

Carpenter

Carpentry is a skilled trade and a craft in which the primary work performed is the cutting, shaping and installation of building materials during the construction of buildings, ships, timber bridges, concrete formwork, etc. Carpenters traditionally worked with natural wood and did rougher work such as framing, but today many other materials are also used and sometimes the finer trades of cabinetmaking and furniture building are considered carpentry.

What to study: NC: Construction Carpentry.

Painter

A Construction Painter applies paint, stain, and coatings to a wide variety of structures, including walls, interiors, and exteriors of buildings and bridges. They may work both indoors and outdoors and on high and low-rise structures executing general and custom maintenance painting and finishing. Construction painters read blueprints/instructions and examine surfaces to ascertain the kind and amount of work required and costs involved in executing the project, including making on-site preparations such as building scaffolding, covering fixtures, etc., as well as preparing walls and other surfaces for painting by scraping using sandpaper in removing old paint. It also involves utilising appropriate materials to fill cracks and holes, as well as applying a variety of tools to paint surfaces according to instructions. Construction painters are also responsible for ordering paint supplies and mixing the paint and other materials to achieve the desired colour or texture.

What to study: NC: Construction Painting.

Wall and Floor Artisan

A Flooring Specialist who can install wall to wall carpets, laminate wood floors, solid wood floors, wood decking and vinyl flooring. They may also specialise in the installation of drywalling and ceilings.

What to study: NC: Construction: Installation of Floor Coverings, NC: Ceiling And Partitioning Installation.

Welder / Ironworker

Welding is a fabrication process that joins materials, usually metals or thermoplastics, by using high heat to melt the parts together and allowing them to cool, causing fusion. Welding is distinct from lower temperature techniques such as brazing and soldering, which do not melt the base metal. An ironworker is a tradesman who works in the iron-working industry. Ironworkers assemble the structural framework in accordance with engineered drawings and install the metal support pieces for new buildings. They also repair and renovate old structures using reinforced concrete and steel. Ironworkers may work in factories, steel mills and utility plants.

What to study: NC: Construction: Steelwork.

Construction Roadworker

Road workers are responsible for maintaining the safety of roadways and highways. They clear debris from roads after accidents or storms, repair potholes, paint lines on the road, install signs and more. Road workers often work outside in all types of weather conditions. This can be physically demanding work that requires a great deal of endurance and patience.

What to study: NC: Construction: Roadworks.

Professional Construction Bodies or Councils for Built Environment and others

South African Council for Project and Construction Management Professions (SACPCMP)

Engineering Council of South Africa (ECSA)

South African Council for the Architectural Profession (SACAP)

South African Council for the Quantity Surveying Profession (SACQSP)

South African Council for the Landscape Architectural Profession (SACLAP)

South African Council for the Property Valuers Profession (SACPVP)

Voluntary Associations

South African Institute of Civil Engineers (SAICE)

Civil Engineering South Africa (CESA)

Flooring Industry Trade Association (FITA)

Engineering Council of South Africa (ECA)

What the Master Builders KwaZulu-Natal Training Academy can offer you

The Training Academy is accredited by CETA for the following qualifications:

National Certificate: Construction Contracting

National Certificate: Supervision of Construction Processes

National Certificate: Construction Health and Safety

There is also a short skills programme in Health and Safety which runs over a ten day period, and various skills development courses we offer.



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Making Construction a career of choice