The Wits Mining Research Institute is home to Africa’s leading multidisciplinary research in all technical, social, and economic aspects of mining. It plays a key part in helping the South African economy to reach its potential while developing sustainable communities and safeguarding the environment. The Institute aims to help reverse a recent decline in South Africa's mining research output. It works to expand mining research from geology and technical studies to include the social impact of mining, community participation, land rehabilitation and labour issues.

The Institute stimulates collaboration between disciplines as diverse as law, management, sociology, migration, economics, engineering, healthcare, materials science, geology, energy, environmental science and community development. Among specific challenges are the extraction of gold in narrow reefs at depths hostile to human survival, and the identification and exploitation of resources in remote and sensitive environments.

Professor Beric Skews, an ‘A’ rated scientist of the School of Mechanical, Industrial and Aeronautical Engineering was awarded an Honorary Fellowship of the Royal Aeronautical Society in London in December 2008. This is regarded as the world’s highest distinction for aerospace achievement, awarded only for the most outstanding contributions to the aerospace profession.

South Africa is the only country to have two recipients of the Fellowship of the International Society for Rock Mechanics (ISRM), an award that recognises international leaders in rock engineering – a very small and exclusive group of individuals both of whom are from the Wits School of Mining Engineering. These prestigious fellowships are lifetime awards and are highest and most senior grade of membership of the ISRM.
The Study of Engineering

Career opportunities for engineers are limitless and extend beyond the formal engineering sector. A career in engineering requires special talents – engineers need to be creative, practical and precise. A keen eye for detail is essential, as is organisational ability and the ability to solve abstract problems.

The profession offers a wide scope of activities to suit many different interests, abilities and aptitudes. As in any field, the top rung of the engineering ladder is often an engineering management position.

However, the engineer who wants to carry on with engineering technical work can practise as a consultant or contractor or go into research and development.

The Faculty also offers three year programmes in Biomedical Engineering and Digital Arts. These are not professional qualifications, but they do enable entrance into the third year of a professional engineering qualification. Other alternatives for graduates from these programmes are Honours in Physics or a Medicine qualification for biomedical graduates and an Honours in Digital Arts for the game design graduates.

The study of engineering involves the conservation and development of the earth’s natural, agricultural and mineral resources in order to serve humanity’s needs.

Engineering plays a vital role in the survival of the South African and international economies. We often take for granted our roads, bridges, buildings, cars, aeroplanes, fuels, electricity, television and telephones, but none of these would be possible without engineers. South Africa and indeed the world is facing a critical shortage of trained engineers.

In order to accept public responsibility as an engineer in one’s own right, it is necessary to be registered as a professional engineer (Pr Eng) with the Engineering Council of South Africa (ECSA).

Our BSc(Eng) is fully accredited by the Engineering Council of South Africa. The BSc(Eng) is accepted by ECSA as fulfilling all the academic requirements for registration as an ‘Engineer in Training’. Further practical experience is necessary, however, before professional recognition is obtained.

In terms of the Washington Accord signed in June 2000, official recognition of the BSc(Eng) has been approved by professional engineering accrediting bodies in the US, Canada, Australia, New Zealand, the UK, Ireland, Japan and Hong Kong.

The Study of The Built Environment

The Built Environment offers qualifications that address the social, spatial, cultural and infrastructural needs of a transforming South Africa. The delivery of affordable housing, the development of rural and urban environments and meeting other social and physical challenges form the basis of the teaching, learning and research programmes in the Built Environment at Wits.

The BSc(Hons) (Construction Management), the BSc (Hons)(Quantity Surveying) and the Bachelor of Architectural Studies are all internationally accredited.

The BSc(URP) Honours programme is accredited by the professional body, the South Africa Council of Planners (SACPLAN).

Working in the built environment requires a keen environmental and social awareness, mathematical, analytical and organisational ability.

Each of the Built Environment programmes deals with a different aspect of our physical environment.

When designing a building, the architect needs to take many factors into account. These include the purpose for which the building is intended, how to place the building in harmony with its surroundings, the restrictions of the site, as well as the creative expression of the architect.

Quantity surveyors are the financial specialists of the building industry. They contribute their skills and knowledge of costs and revenues to the planning of every kind of building and engineering project to ensure that the best designed building or structure will be the most cost effective.

Urban and regional planners help to shape better places where people live, work and relax. Good planning deals with population changes, community life, economic development, environmental questions and design.

The property studies specialist requires a combination of legal, financial and engineering skills to implement property solutions in line with corporate or government strategy. As such s/he needs to be up-to-date with latest thinking in the field of property investment and development.

Construction managers are experts in effective and efficient construction and property development. As such they are involved in the overseeing of projects which includes planning the layout of sites, overseeing the work of contractors and ensuring that building regulations are adhered to.
Programmes Offered

The Built Environment

Four undergraduate degrees (programmes) are offered in the Built Environment:

- Bachelor of Architectural Studies - BAS
- Bachelor of Science in Urban and Regional Planning – BSc (URP)
- Bachelor of Science in Construction Studies - BSc (CS)
- Bachelor of Science in Property Studies - BSc (PS)

Some of these provide an entry qualification into professional programmes: BAS into BAS(Honours) and MArch (Prof) in architecture; BSc(URP) into BSc(URP)(Honours) in Urban and Regional Planning and BSc(CS) into Honours in Quantity Surveying and Construction Management.

Engineering

The Bachelor of Science in Engineering - BSc(Eng) may be awarded in any of the following branches of engineering:

Bachelor of Science in Engineering

- Aeronautical Engineering
- Chemical Engineering
- Civil Engineering
- Electrical Engineering (option in Information Engineering from the third year of study)
- Industrial Engineering
- Mechanical Engineering
- Metallurgy and Materials Engineering
- Mining Engineering

Bachelor of Engineering Science

- in Biomedical Engineering - BEngSc(BME)
- in the field of Digital Arts

There are four innovative fields of study offered in the Faculty of Science that have been structured in such a way that graduates will only require an extra two years to complete the BSc(Eng) in the appropriate field:

- Chemistry with Chemical Engineering
- Material Science with Metallurgical Engineering
- Nuclear Science with Mechanical Engineering
- Applied Computing with Electrical and Information Engineering
Bachelor of Science in Engineering

The BSc (Eng) is divided into four years of study. There is a set curriculum for the first three years of study, but a choice of elective courses is offered in some branches in the fourth year of study. The first two years provide a solid foundation in the basic sciences and a general engineering education. Many of the courses taught in these two years of study are therefore not taught by the branch of engineering for which the student is registered. (Since this may lead to difficulty identifying with the branch of engineering chosen, first-year students may be assigned a Personal Tutor from their home branch to whom they may turn for advice and guidance.) Students should note that the curricula for the various engineering programmes are not all the same, even at the first-year level.

Courses in Mathematics, Mechanics and Physics are largely common but the courses in Engineering and Drawing differ to suit the needs of the different branches. Chemistry is taken for the entire year by Chemical Engineering and Metallurgy and Materials students; whereas all other students take a semester long course in Chemistry. All the branches also have branch specific courses in their first-year curricula.

Practical Training

In the second year some engineering students are required to undergo practical training during the year. The arrangements vary from branch to branch and the training may take place in vacations or during the term. The general objective is for students to be exposed to the more practical aspects of engineering such as visits to industries, "hands-on" work in workshops or in the field, or practical technical assistance with research projects. At the end of second and third year, students are required to be employed in industry for a prescribed period.

Design and Research Projects

The final examinations in the fourth year of study in all branches include a design project, in which students are required to undertake a full engineering design appropriate to their branch of engineering, and an extended research project.
**ENGINEERING PROGRAMMES**

**School of Civil and Environmental Engineering**

The School of Civil and Environmental Engineering offers the 4-year BSc(Eng) programme in Civil Engineering. Civil Engineering is “the practice of improving and maintaining the built environment to enhance the quality of life for present and future generations” (Institution of Civil Engineers, 1998).

A primary focus for civil engineers is the planning, design, construction, operation and maintenance of physical infrastructure – facilities that include water and waste management; transportation and communications; structures and public buildings. These provide for all people’s basic needs, as well as providing a platform for economic growth and are needed by people regardless of their level of economic development.

In the first two years of study the focus is on the development of competencies in mathematics, science, computing, communication and engineering design / problem-solving. Courses in the latter two years include geotechnical engineering, hydrology, hydraulics and infrastructure planning and management, structural engineering and construction materials. As developmental and environmental concerns make new demands and raise new challenges for our society, so the demand for high level civil engineering skills increases.

**School of Chemical and Metallurgical Engineering**

The School of Chemical and Metallurgical Engineering comprises two branches of engineering – Chemical Engineering and Metallurgy and Materials Engineering. The first two years of study are to some extent common to each of the branches.

**Chemical Engineering**

This is the branch of engineering which deals with large-scale industrial processes that convert, by physical or chemical change, raw materials into products with a higher economic and social value. For example, fuels and chemicals are produced from coal, petroleum natural gas, vegetation, microorganisms, etc. Industries in fields such as plastics, oil refining, explosives, fertilisers, detergents, food processing and mineral processing all need chemical engineers.

The curriculum reflects the need for a thorough understanding of mathematics, physics and chemistry. Courses such as Chemical Engineering Thermodynamics, Chemical Reactor Theory, Process Control, Solid Fluid Systems, Transport Phenomena, Mass-Transfer Operations and Chemical Plant Design are studied after first year, and in final year a number of elective subjects in advanced topics in chemical engineering are studied. The computer is an essential tool for any engineer today, and mastery of computing methods is necessary for solving many problems in chemical engineering. The curriculum therefore emphasises the use of the computer from the first year of study onwards, both in chemical engineering subjects given by the branch of Chemical Engineering and in the courses on Mathematics, Computing for Process Engineers and Numerical Methods. For this reason, mathematics is a vital element in the training of chemical engineers so the curriculum has a mathematical flavour.

An important role played by chemical engineering in modern society, is the minimisation and control of the impact of modern industrialised society on the environment. Engineering practice also impacts on society and business in many ways. Accordingly, the curriculum includes courses on environmental engineering, management principles and professional practice and ethics.

**Metallurgy and Materials Engineering**

This branch of engineering is concerned with the engineering principles required to concentrate, extract and refine metals, materials and carbon (coal) materials as well as to develop new and novel alloys and materials including ceramics and composites.

In the first two years of study the students are given a solid foundation in physics, mathematics, chemistry and computer usage. They are also introduced to process engineering principles, materials science and mineralogy.

In the third and fourth years of study, students take courses in extractive metallurgy (an introduction to metallurgical process engineering, mineralogy and minerals processing, hydrometallurgy, metallurgical thermodynamics, pyrometallurgy, and iron and steel manufacture). In regard to materials engineering, students take courses on engineering sciences related to materials (micro structure, crystal structures, the structure and properties of materials) and the processing and behaviour of materials (materials processing, heat treatment, corrosion, wear, welding and forming processes, failure analysis, and powder metallurgy). Core subjects in materials engineering focus on the structure and behaviour of materials (failure analysis, crystal structures, corrosion and wear) and their formation into usable forms (heat treatment, welding and forming processes, and powder metallurgy). As in the chemical engineering curriculum, the curriculum also focuses on the issues of environmental engineering, management and professional ethics. There is a strong emphasis on design and project work and the programme culminates with an extensive laboratory project and a large design project. Altogether, the degree programme provides a sound foundation for future postgraduate study as well as a career in technical management.
School of Electrical and Information Engineering

Electrical Engineering covers a very broad range of activities involving the generation and use of electrical energy for all applications.

Fields of activity ranging from planning and operation of large power generating stations, through digital computers and information transfer, to telecommunication systems, all form part of Electrical Engineering.

Owing to the very rapid growth and expansion of the whole field of Information Technology, an Information Engineering option is also offered within the programme for those wishing to pursue a career in this field.

The first two years of the curriculum are common to both options and focus on enhancing knowledge in Mathematics, Physics and Chemistry of Materials.

In the third year there is more emphasis on the Electrical Engineering Science subjects as well as including more advanced courses in mathematics (for example, Electronics, Power Engineering, Electromagnetic Engineering and Mathematical Methods). The Information Engineering option has more emphasis on Software Engineering, Telecommunications and Computer Networking.

In the final year, there are five compulsory courses for each option, which include Engineering Design, Engineering Laboratory and Systems Management.

In addition, students choose three elective courses that allow a small degree of specialisation within either of the two options.

Engineering Design and Engineering Laboratory are both project-based subjects in which the student is required to submit a report for examination. These simulate real world engineering projects and are evaluated as such.

The course Engineers in Society introduces the student to the many sociological issues relating to engineering decision-making, while Systems Management reflects the fact that, for a large number of electrical engineering graduates, career paths will lead to senior management and leadership positions.

Biomedical Engineering, within the School of Electrical and Information Engineering, is a discipline in which engineering and other quantitative sciences are applied to the solution of medical and biological problems. Common examples include the development of sophisticated x-ray imaging systems, artificial organs, image recognition systems, other medical devices, as well as achieving a quantitative understanding of disease processes.

The three-year undergraduate degree known as Bachelor of Engineering Science in Biomedical Engineering BEngSc (BME) combines subjects in science, engineering, medicine and biology, as well as specific biomedical engineering courses.

It is a pre-professional qualification, thus, the graduate is not eligible for any professional registration based on this degree alone. Graduates of this qualification have various routes they can pursue to obtain a professional qualification, such as: Medicine (MB BCh) and BSc(Eng) in Electrical Engineering (or the Information option) or a BSc(Hons) in Physics.

Graduates of this degree can apply for admission into the third year of BSc(Eng) in Electrical/Information Engineering, however, the entry requirements for MBBCCh and BSc(Hons) in Physics are competitive and may vary.

The Biomedical programme, combined with one of the professional qualifications described, will produce a range of graduates with professional skills well suited to the highly technical health care environment of today.

Since 2012, the School has been offering the three year BEngSc in Digital Arts. The specialised programme combines Electrical Engineering and Digital Art courses in a way that will prepare students for careers in game design and development. The game design programme is a collaboration between the Wits School of Arts and the School of Electrical and Information Engineering. Students accepted for this programme will complete selected Electrical Engineering courses as well as some specialised game design courses.

On completion of the BEngSc in Digital Arts students may continue into the third year of the BSc(Eng) (Electrical) (Information Engineering) option or into the Honours course in Digital Arts.

School of Mechanical, Industrial and Aeronautical Engineering

The School comprises three branches of engineering – Aeronautical Engineering, Industrial Engineering and Mechanical Engineering.

The undergraduate curriculum consists of courses in pure mathematics, physics, statistical methods, numerical methods, applied computing and the various engineering sciences such as applied mechanics, electrical engineering, fluid mechanics and engineering thermodynamics.

Individual branches emphasise different subjects, but all have the common philosophy that this knowledge together with an intensive research/laboratory component, is used with the problem solving strategy referred to as the engineering method to design new devices, products, machines and systems.

The first two years of study are common to each of the three branches. The curricula become increasingly specialised and from third year onwards the branches become more focused on their individual disciplines. In all branches the second half of the final year is dedicated to project (design and research) work, regarded as being an important culmination of the programmes.
Aeronautical Engineering

The curriculum for the later years of study provides graduates with a broad background in aeronautical engineering. It includes an introductory course in Aeronautics as well as courses such as Aircraft Design, Aircraft Structures, Aerodynamics, Propulsion Systems and Flight Dynamics. The undergraduate curriculum also provides a sound basis for postgraduate study.

Industrial Engineering

This is the business side of Engineering. Industrial engineers innovatively improve the design, management and maintenance of all forms of productive systems for finance and IT, manufacturing, government, mining, trade, transport and healthcare. Coursework in the degree overlaps business, technology and manufacturing and involves a variety of practical and applied projects. Industrial engineering at Wits has strong links with corporate partners and the majority of our students carry out their final year projects within industry. Because Industrial Engineers are equipped with a skill set including analytical problem solving and the ability to engage with technology, people and processes, the qualification travels unusually well across industries. They often end up leading enterprises and managing complex systems and problems. They negotiate contracts, set up manufacturing and production systems and coordinate functions to create efficiencies.

Students who have successfully completed two years of study in any other branch of Engineering at this University, may be admitted into the third year of Industrial Engineering.

Mechanical Engineering

From the third year of study onwards the subjects become biased towards the study of mechanical engineering systems, reflected in courses such as Fluid Dynamics, Mechatronics, Mechanical Engineering Design, Mechanical Vibrations and Thermal Systems.

Open-ended research projects are provided in both the third and fourth years of study, while design retains substantial emphasis in its role as the synthesis of course material. Many of the projects are industry related whilst others are at the forefront of research, and frequently lead on to postgraduate studies.

School of Mining Engineering

Mining engineers play a key role in the planning, exploitation and excavation of mineral resources. Mining requires the skills and technology of a number of other branches of engineering and the curriculum for years one and two, in addition to the foundation in the basic sciences common to all branches of engineering, includes courses in civil, electrical and mechanical engineering, geology and surveying. Third and fourth years are devoted mainly to mining engineering subjects and include courses in all aspects of mining such as technical valuation, ventilation and environmental engineering, mine transportation and rock mechanics.

The programme is primarily designed to provide the graduate with the engineering expertise which he or she will require as a mining engineer but it is recognised that many graduates will eventually be employed as mine managers. Subjects such as mine management principles and techniques help prepare graduates for the responsibilities they are likely to assume at an early stage in their career.

The final stage of the undergraduate programme is a mine design exercise in which the student is required to apply all the engineering knowledge he or she has acquired to the design of a mine and to assess the economic feasibility and profit potential of the design. It should be noted that by law, all persons working on mines require a certificate of fitness.
Frequently asked questions and answers by Engineering students

Q  Can I change branches at the end of first year?
A  This is possible in principle, if there are places available in the branch to which you wish to transfer and if the standard of your results is acceptable to the Head of that School. However, the curricula for the various branches of Engineering are not all the same, even in first year. If your application to change branches is accepted, you will be given credit for those courses which you have passed, but there might be other first-year courses which you would have to complete in your new branch.

Q  If I study Maths, Physics, Chemistry and Applied Maths at Unisa will I get credit for the whole of first year?
A  Although Wits may give you credit for certain first-year courses if you have passed the relevant Unisa modules, there will always be at least one further course (not equivalent to anything at Unisa) which you need to pass to complete first year. You will therefore not be able to proceed immediately to a full second year in the Engineering Faculty. Credit in a subject is granted at the discretion of the Head of the School in which the course is given and is never automatic.

Q  What is the difference between a technician and an engineer?
A  A technician is trained at a university of technology, whereas an engineer will usually have a degree from a university. Engineers are responsible for designing engineering projects whereas a technician will usually carry out the designs.

Engineers have a broader and deeper knowledge of the branch of engineering in which they have qualified than technicians, whose training is much more narrowly specialised and practically orientated.

Q  Is English an important subject for an engineer?
A  Yes, English language is important because engineers work with many other people and they must be able to communicate well both in writing and in speech.

Q  Can I study engineering part-time?
A  No, the Faculty does not offer any classes for part-time study in the BSc(Eng) programme. Part-time study is possible, however, at the postgraduate level.

Q  Will my engineering degree be recognised if I want to work overseas or work on an international project?
A  Yes. All nine branches have formal recognition both locally and overseas.
CURRICULUM INFORMATION - BUILT ENVIRONMENT PROGRAMMES

School of Architecture and Planning - Bachelor of Architectural Studies (BAS)

Architecture is part of the social and cultural heritage we leave for future generations. An architect is responsible for the design of buildings and their environment. Through planning, the manipulation of space and light, creative problem-solving, using structure and materials, an architect makes places for human beings to use, enjoy and which extends their perception of the world.

The curriculum for the BAS extends over three years. Acceptance into the course is subject to a competitive selection process for applicants who meet the required minimum standards, as a limited number of students can be accepted each year.

Architectural Design and Theory forms the main component of the degree together with Theory and Practice of Construction and Histories and Theories of Architecture.

These courses are presented through lectures and seminars, but the core learning takes place in the studios, around which all activities revolve. Much time is spent here doing projects under guidance of staff members. In this degree, all subjects inform and are integrated into Architectural Design and Theory and many projects run across the courses.

Practicing architects and international guests visit the School and participate both in seminars and juries during which students’ work is critically examined.

After completing the BAS programme, a student is required to spend a year away from University working for 12 months in an architectural practice. It is then possible to apply to proceed to the BAS(Hons) qualification which extends over one year of full-time study, followed by the MArch (Professional), which extends over a year of full time study. Wits BAS graduates who meet the required minimum standard are granted automatic admission to the BAS(Hons), while there is a selection process for the remaining places.

In terms of the new legislation, the award of a BAS qualifies the student for registration with the South African Council for the Architectural Professions as a Senior Architectural Technologist. The Master of Architecture (Professional) qualifies the graduate for registration as a Candidate Professional Architect.

After two years of work in the offices of a registered architect the Candidate Professional Architect may qualify for registration as an architect.

The South African Council of the Architectural Professions, the Royal Institute of British Architects and the Commonwealth Association of Architects accredit the BAS and MArch degrees.

Bachelor of Science in Urban and Regional Planning BSc(URP)

Urban and Regional Planning is concerned with sustaining the environment and developing economic and social well-being. In a context of increased technological change, rapid urbanisation, social transformation and a changing natural environment, planning is about efficient and effective management of space and the creation of place with meaning and quality.

The planning programme aims to provide students with the tools necessary to manage space in a just and equitable way. In order to do this, students need to know about a range of different fields of study, including Geography, Economics, Sociology and Mathematics.

These courses support the core subjects of planning, which develop the professional and academic skills of the student. An example of one of the core planning courses, Settlements through History, traces urban developments in southern Africa from pre-colonial times to contemporary cities. Courses such as Land Management are aimed at understanding legal issues and the effective management of land. The core planning subjects range from the design of urban spaces and principles of place making in a culturally diverse context to policies for the planning and management of entire spatial regions.

Many of the planning subjects are both theoretical and practical.

The classes involve mostly small group teaching, with a large proportion of the courses having a practical field trip where students are exposed to real life issues.

Planners have a wide choice of careers once they are qualified. The public sector offers opportunities for planners in local, provincial or national government, while large companies with property portfolios such as insurance companies may employ planners. A number of planners establish their own consultancies and there is the rewarding field of working with communities and non-governmental organisations.

At the end of the three year BSc(URP) programme, students who obtain the minimum requirements may register for the professional BSc(URP) Honours programme. This fourth year Honours programme will enable students to register with the professional body, the South Africa Council of Planners (SACPLAN) after necessary practical experience. Students with the required minimum standards may be encouraged to register for a further year of study where they can obtain a Masters degree in a specialised area offered in the School of Architecture and Planning, such as a Master of Science in Development Planning, Master of the Built Environment in the field of Housing, Master of Urban Studies or Master of Urban Design.
School of Construction Economics and Management

The School of Construction Economics and Management offer programmes leading to professionally recognised qualifications in the fields of Quantity Surveying, Construction Management and Property Studies. The first three years of study, leading to the qualification of Bachelor of Science in Construction Studies, forms the foundation of each of these professional fields. Students are given an insight into all aspects of the three fields and how they interact, allowing them to have a clear direction on which professional field to pursue at Honours level.

Quantity surveyors are the economists for the built environment. They work closely with developers, architects, engineers, builders and manufacturers to ensure that development opportunities are recognised and the best value for money is obtained. They are also closely involved in the drawing up and interpreting of construction contracts, and in settling disputes that may arise from the construction process. Successful quantity surveyors are able to express themselves clearly and logically, are capable of abstract reasoning and pay attention to detail. They need to have a leaning towards calculation, since they will be working with figures throughout their careers.

Construction managers plan, organise and control all aspects of the construction project. They have highly developed managerial skills that allow them to motivate, lead and communicate with the wide variety of people in the construction process. They have advanced technical knowledge of construction processes that allow them to guide large and complex projects to successful completion. Employment opportunities are available in construction companies, property developers, project management consultants, insurance organisations, manufacturers and government departments.

Property consultants have career opportunities in finance, property asset management, letting and leasing property, banking, property development and valuations. Job opportunities are available at all levels in the public and private sector. Economists have traditionally used the performance of the built environment as an indicator of future economic growth. Property is a finite resource that will always be in demand; the factor of production in which economic activity takes place, so the efficiency and costs of such space affects the cost of goods and services produced. As a corporate asset it forms the major asset value in the balance sheet, with the majority of corporate debt being secured against it. The challenge of the property practitioner is to provide space that efficiently meets organisational requirements. In the public sector, this means finding property solutions that permit the implementation of government policy. The property market operates in an institutional environment influenced by government, users of space financiers and investors, requiring the property practitioner to have a combination of legal, financial and engineering skills.
Bachelor of Science in Construction Studies

The three year programme in Construction Studies is a generic qualification that prepares students for professional postgraduate (Honours level) studies in Quantity Surveying and Construction Management. Financial topics include economics, accountancy and the measurement and costing of building work. The student receives a strong grounding in the technical aspects of construction, including materials technology, civil and structural engineering, building science and an introduction to environmental concerns in relation to construction. All aspects of the law as it pertains to construction are studied, with a particular focus on construction contracts. There are introductory courses in property finance and valuation.

On completion of the programme, there are numerous employment opportunities in both the private and public sector, or the graduate may choose to continue in the professional qualification for one or more of the fields outlined above as the academic component leading to professional registration.

Bachelor of Science in Property Studies

The four-year BSc in Property Studies is the first of its kind at Wits. It provides comprehensive training in almost all aspects of the property business - finance, investment, development and valuation. It is also possible now, to specialise in Corporate Real Estate and Facilities Management. Students will receive very strong grounding in the fundamentals - Business and Property Applications of Mathematics, Statistics, Law and Planning, alongside an Introduction to Property. This will be followed in subsequent years by training in Finance, Market Analysis, Investment Finance and Valuation of Property. An essential feature of the training we provide is the integration of professional skills with academic knowledge - the goal is to make our graduates immediately employable after graduation. Such professional skills include oral and written communication in different professional contexts, the ability to work in teams of different composition, financial statement analysis, valuation and financial modelling. We also do this by providing training in the fourth year in Entrepreneurship and Leadership.

Given the shortage of property graduates in South Africa and beyond, there is no shortage of opportunities in banking, investment and finance, property management, consulting, valuation, development and corporate real estate. Graduates can even work for government agencies as well as pursue further studies at the postgraduate level.