

Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie / Lefapha la Boetšenere, Tikologo ya Kago le Theknolotši ya Tshedimošo

Bachelor of Engineering in Civil Engineering



Make today matter



What does the programme entail?

Civil engineers create facilities that improve the quality of people's lives and environments. This process entails research into the proposed facility, followed by the planning, design and construction of the facility and its continued maintenance. Civil engineers design, build and maintain constructions such as tower blocks and skyscrapers, dams, canals and pipelines, roads, bridges, tunnels, railway lines, airports, power stations, towers, waterworks and outfall installations.

Since these facilities have a long lifespan and a direct impact on the community and environment, civil engineers are trained to not only deal with the analytical aspects of design, but to also liaise and consult directly with communities and individuals to design, build and maintain such facilities cost-effectively and to the benefit of humankind.

The development of information technology and computer software that make continuous data collection, mathematical modelling and designs more effective has drastically changed the nature of civil engineering in that it enables civil engineers to concentrate on the more fundamental aspects of developmental work and design.

Information technology and environmental engineering and management increasingly form a greater part of the training, so that a civil engineer can still be provided with a broad-based qualification that offers challenging, fulfilling and highly adjustable career opportunities throughout a career lifespan of between 40 and 50 years.

In 2020, the Department inaugurated its new Engineering 4.0 facility, which includes state-of-the-art laboratories and training facilities to support the training and education of the engineers of the future.



What makes this programme unique?

Our programmes in the School of Engineering are accredited by the Engineering Council of South Africa (ECSA), and our degrees meet the requirements for professional engineers in South Africa.





Who are the ideal candidates?

The ideal candidate needs:

- A passion for continuous learning
- People-management skills
- Good planning skills
- Problem-solving skills



Future of work/careers in the future

In order to work towards smart cities, there is a need to develop researchers with advanced skills in robotics, artificial intelligence, the internet of things and satellite technology.

The civil engineer of the future will need to internalise the fundamentals of materials science, engineering mechanics and dynamics. This knowledge should be combined with an appreciation of the environment and its effects on materials, as well as a sound appreciation of the internet of things (IoT) and Big Data analysis. Another essential skill is the ability to integrate internalised knowledge with searchable information and data, combined with the development of models to describe the interaction between materials, traffic and the environment.

The expected effects of the 4IR on the life of the pavement engineer, for instance, may include changes in pavement structures due to the wandering patterns of autonomous vehicles, changes in materials due to developments in nanotechnology, changes in traffic loading due to vehicle technology developments, the availability of traditional materials such as bitumen, and the need to develop novel road pavement surfacing options.

For more information visit www.up.ac.za/eng4.



Which companies employ our graduates?

Any company involved in development, design, construction and management of infrastructure and related services.

For more information visit

www.careerexplorer.com/careers/civil-engineer.





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Bachelor of Engineering in Civil Engineering (continued)

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The Chair in Railway Engineering in the Department of Civil Engineering at the University of Pretoria was established in 1996 when Spoornet (now Transnet Freight Rail) initiated a partnership between industry and the university. This partnership revolves around three major aspects: graduate training, continuing education courses for industry, and railway research. At the graduate level, students in Civil Engineering are taught the basics of railway engineering as part of their transportation studies. The Chair currently offers nine short courses delivered by local and international experts in a wide range of railway engineering fields. All courses are registered with ECSA for Continuing Professional Development (CPD) credits, and some are also credit-bearing, such as the coursework honours in transportation engineering.



READ THE FULL STORY

The University of Pretoria (UP), in collaboration with Anglo American, recently established a top-of-the-range mobile soils testing laboratory for the purposes of assessing the strength of samples of mining waste-known as mine tailings or slimes—on site. The laboratory, housed in an eightton truck, will enable sensitive soil samples to be subjected to a range of sophisticated tests in the vicinity of the area in which they are recovered. The use of this mobile facility will prevent sample disturbance associated with long-distance transport to laboratories.



READ THE FULL STORY



Minimum admission requirements

Duestion me	Minimum requirements for NSC/IEB for 2026					
Programme	Achievement level					
SCHOOL OF ENGINEERING	English Home Language or English First Additional Language	Mathematics	Physical Sciences	APS		
Bachelor of Engineering in Civil Engineering [4 years]	5	6	6	35		

The suggested second-choice programmes for Bachelor of Engineering in Civil Engineering are Bachelor of Science in Chemistry, Bachelor of Science in Mathematics, Bachelor of Science in Physics, Bachelor of Science in Construction Management and Bachelor of Science in Quantity Surveying if your APS and subject requirements of your first-choice programme are not obtained.

Contact information Prof Hannes Grabe (Head of Department) | **Tel** +27 (0)12 420 2925 | **Email** hayley.boks@up.ac.za **Websites** www.up.ac.za/civil-engineering | www.up.ac.za/school-of-engineering | www.up.ac.za/ebit-postgraduate



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Refer to the International undergraduate prospectus at www.up.ac.za/programmes > Undergraduate > Admission Information or click here for more information.

- The closing date for applications for programmes in this faculty is 30 June.
- Meeting the minimum admission requirements does not guarantee admission into a programme.

	Minimum requirements for 2026									
	Achievement level									
		GCSE #			AS Level	A Level	IB			
		The qualifications in the two columns below will be considered only for conditional admission. If final AS and/or A levels have been completed, these two columns will not apply. It can also not be used for final admission and/ or registration.								
FACULTY OF ENGINEERING, BUILT ENVIRONMENT AND INFORMATION TECHNOLOGY Programmes	Compulsory subjects	CIE IGCSE LGCSE BGCSE EGCSE O Level NSSC OL CGCE UCE NECO WAEC WASSCE ZGCE	UK England Wales Northern Ireland Pearson Edexcel GCSE	HIGCSE NSSC HL	GCE CIE NSSC AS	GCE CIE CGCE UACE WAEC ZGCE	IB SL	IB HL	KOMBI ABITUR	KCSE
Bachelor of Science in Architecture	English Mathematics Physics	C D D	4 3 3	3 3 3	C D D	E E	4 2 2	3 2 2	60-69% 50-59% 50-59%	B C+ C+
Bachelor of Town and Regional Planning	English Mathematics	C D	4 3	3 3	C D	E E	4 2	3 2	60-69% 50-59%	B C+
Bachelor of Science in Construction Management	English Mathematics Physics Chemistry (or Accounting*)	C C	4	3	C C	E	4 4	3	60-69% 60-69%	B B
Bachelor of Science in Real Estate		D	3 3	3 3	D D	E	2 2	2 2	50-59% 50-59%	C+ C+
Bachelor of Science in Quantity Surveying		D								
Bachelor of Engineering in Industrial Engineering	English Mathematics Physics Chemistry	sh C ematics B cs B iistry B	4 5	3 2	CB	E E D B D B D D	4 5 5 5	3 4 4 4	60-69% 70-79% 70-79% 70-79%	B B+ B+ B+
Bachelor of Engineering in Chemical Engineering										
Bachelor of Engineering in Civil Engineering										
Bachelor of Engineering in Electrical Engineering										
Bachelor of Engineering in Electronic Engineering										
Bachelor of Engineering in Mechanical Engineering			5	2	B					
Bachelor of Engineering in Metallurgical Engineering										
Bachelor of Engineering in Mining Engineering										
Bachelor of Engineering in Computer Engineering										

Only English with at least a C symbol on this level can be used for final admission. * Offer both PHYSICS and CHEMISTRY, or ACCOUNTING only



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	Minimum requirements for 2026 Achievement level									
		GCSE #			AS Level	A Level	IB			
		The qualifications in the two columns below will be considered only for conditional admission. If final AS and/or A levels have been completed, these two columns will not apply. It can also not be used for final admission and/ or registration.								
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Bachelor of Information Technology in Information Systems	English Mathematics	C C	4 4	3 3	C C	E	4 4	3 3	60-69% 60-69%	B B
Bachelor of Information Science	English	D	3	3	D	E	3	2	50-59%	C+
Bachelor of Information Science specialising in Publishing	English	С	4	3	С	E	4	3	60-69%	В
Bachelor of Information Science specialising in Multimedia**	English Mathematics	D C	3 4	3 3	D C	E	3 4	2 3	50-59% 60-69%	C+ B
Bachelor of Science in Computer Science	English Mathematics	C B	4 5	3 2	C B	E D	4 5	3 4	60-69% 70-79%	B B+
Bachelor of Science in Information Technology in Information and Knowledge Systems	English Mathematics	D B	3 5	3 2	D B	E D	3 5	3 4	50-59% 70-79%	C+ B+
Bachelor of Engineering This is a 5-year programme in all Engineering disciplines. Previously called ENGAGE	English Mathematics Physics Chemistry	с с с с	4 4 4 4	3 3 3 3	C C C C	E E E E	4 4 4 4	3 3 3 3	60-69% 65% 65% 65%	B B B B

Only English with at least a C symbol on this level can be used for final admission. * Offer both PHYSICS and CHEMISTRY, or ACCOUNTING only

**Possible name change to: Bachelor of Information Science specialising in Interactive Technology

