

The Future Reimagined



UNIVERSITY
OF
JOHANNESBURG

Faculty of Engineering
and the Built Environment
**Undergraduate
Programmes 2018**



Developing Future Professional Engineers, Professional Engineering Technologists and Built Environment Professionals

The Faculty of Engineering and the Built Environment (FEBE) is one of the nine faculties of the University of Johannesburg. FEBE is home to five schools, 12 departments and two technology stations. The Faculty offers both Engineering Technology and Engineering Science undergraduate, postgraduate and postdoctoral research programmes. In keeping with the University's quest for Global Excellence and Stature, the Faculty is the first in South Africa to offer global education to the widest range of comprehensive professional engineering, engineering technology and built environment qualifications. FEBE also offers programmes in quality and operational management which registers more than 2000 students annually.

FEBE remains a leading provider of well-qualified engineers, engineering technologists and technicians. Programmes are appropriately accredited by recognised national and international bodies or accords. Over the years, the Faculty has established strategic partnerships within the international higher education landscape and with key industry stakeholders. Operating within the dynamic and competitive higher education landscape, FEBE is innovative in its approach to teaching, learning, collaborative research, community engagement and international partnerships. The Faculty is one of two South African universities part of the CDIO consortium.

The CDIO™ INITIATIVE is an innovative educational framework for producing the next generation of engineers. The Faculty boasts more than 90% of postdoctoral research fellows from the international community and is home to the largest number of international academics and students across the university. UJ is also the first and only African university admitted to Universitas 21, a consortium of 28 research-intensive universities in the world. UJ is ranked at 63 out of 250 international universities in the QS University Rankings: BRICS 2016.

FEBE remains at the cutting edge of technology and education innovation through its many international research and community engagement partnerships. While focused on the promotion of reflective and critical thinking, the Faculty implements novel ways of problem-solving and believes in environmentally sustainable solutions. In support of South Africa as a signatory to the UN Sustainable Development Goals 2030, FEBE's programmes are themed to various areas of sustainable development.



What is Engineering?

Engineering broadly focuses on the creative application of scientific and technical knowledge to design, analyse, develop structures, machines, manufacturing processes, construction of works/systems for practical purposes or maximising operations.

www.uj.ac.za/faculties/febe

The Complementary Roles: Engineer, Engineering Technologist and Technician

An Engineer is one who, among others, conceptualizes, designs, and innovates, while the Technologist will, complement an engineering design process, by developing and implementing, and the Technician will install, commission, maintain and operate. Programmes within the Faculty are best suited for learners who are creative thinkers, possess an inventive imagination with an aptitude for mathematics, science and technology, learners who enjoy developing solutions with logic and reason and discovering how things work.

The Faculty of Engineering and the Built Environment is supported by the following Accreditation Bodies:

- Professional Engineering and Engineering Technology Programmes: The Engineering Council of South Africa (ECSA) (www.ecsa.co.za)
- Town and Regional Planning Programmes: South African Council for Planners (SACPLAN) (www.sacplan.org.za)
- Mine Surveying Programme: South African Council for Professional and Technical Surveyors (PLATO) (www.plato.org.za)
- Construction Management Programme: South African Council for Project and Construction Management Professions (SACPCMP) (www.sacpcmp.org.za)
- Quantity Surveying Programme: & South African Council for the Quantity Surveying Profession (SACQSP) (www.sacqsp.org.za)
- Quality and Operations Management Programmes are quality assured through institutional processes.

Accreditation agencies generally align to international accords and in this way most programmes listed by FEBE receive recognition internationally. ECSA is a signatory of the Dublin,

Sydney and Washington Accord, which provides international recognition for the Faculty's BEng and BEngTech. Curricula are specifically designed, taking into consideration the National Skills Development Plan, industry needs, surrounding communities, government, economy and international bodies. Programmes are subject to accreditation visits and quality assurance.

Washington Accord

The Washington Accord, signed in 1989, is an international agreement among bodies responsible for accrediting engineering degree programmes. It recognizes the substantial equivalency of programmes accredited by those bodies and recommends that graduates of programmes accredited by any of the signatory bodies be recognized by the other bodies as having met the academic requirements for entry to the practice of engineering.

Sydney Accord

Similarly, an Agreement was developed for Engineering Technologists or Incorporated Engineers, called the Sydney Accord (SA), which was signed in June 2001.

Dublin Accord

The Dublin Accord is an agreement for the international recognition of Engineering Technician qualifications. In May 2002 the national engineering organisations of the United Kingdom, Republic of Ireland, South Africa and Canada signed an agreement mutually recognising the qualifications which underpin the granting of Engineering Technician titles in the four countries.

South Africa, through ECSA, is an active signatory of all three (3) accords.

Further, and up-to-date, information on accords: www.ieagrements.org

For more on FEBE visit: <https://goo.gl/d41kR0>

University of Johannesburg's Faculty of Engineering and the Built Environment – The First in South Africa to Roll Out the Widest and Comprehensive Range of BEngTech Degrees.

In line with the Department of Higher Education and Training (DHET), Council of Higher Education's (CHE) new Higher Education Quality Sub-Framework (HEQSF), and Engineering Council of South Africa (ECSA) guidance, the Faculty of Engineering and the Built Environment (FEBE) at University of Johannesburg has rolled out its approved three year BEngTech and Built Environment Bachelors qualifications. These new programmes are developed furthering our approach to Conceive-Design-Implement-Operate (CDIO) – the University of Johannesburg is a member of the CDIO consortia.

Consequently, most of FEBE's National Diploma and BTech programmes will be gradually phased out. The last intake of the three year National Diploma occurred in January 2016. We urge National Diploma graduates / alumnus who have not registered or completed their BTech, to register and complete their degrees as soon as possible.

BEngTech Programmes

The programmes supports expanded access, improved quality and increased diversity of provisions, and reinforces a stronger and more co-operative relationship between Higher Education and training institutions and the workplace. In addition, the programmes are responsive to the needs of individual citizens, employers in both public and private sectors, as well as the broader societal and developmental objectives. The programmes provide for improved articulation towards postgraduate qualifications and exit-level outcomes are aligned with those of the Engineering Council of South

Africa (ECSA), a signatory of accords associated to the International Engineering Alliance (IEA).

New FEBE qualifications

This qualification is primarily industry oriented, as the knowledge taught emphasises on general engineering principles and application. The qualification provides students with a sound knowledge base in a particular field or discipline and the ability to apply their knowledge and skills to particular career or professional contexts, while equipping them to undertake more specialised and intensive learning. Programmes leading to this qualification tend to have a strong professional or career focus and holders of this qualification are normally prepared to enter a specific niche in the labour market.

Tailored for Relevance

Specifically, these programmes are designed to build the necessary knowledge, understanding, abilities and skills required for further learning towards becoming a competent practicing engineering technologist. This qualification completed provides:

1. Adequate preparation for careers in the engineering profession
2. An educational base required for registration as a Professional Engineering Technologist with ECSA.
3. Entry to NQF level 8 programmes e.g. **BEngTech** (Honours) and Postgraduate Diplomas. Subsequently, this will pave the way for the graduate to enrol for Master's Programmes.
4. The BEngTech is the entry-level qualification for candidacy, i.e. Engineering Technologist (in this regard, the BEngTech replaces the BTech).

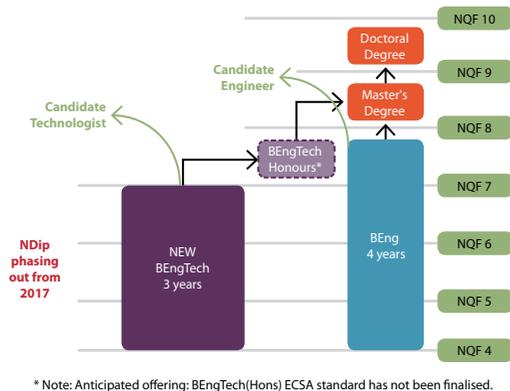


Exit-Level Outcomes/Graduate attributes of the new BEngTech:

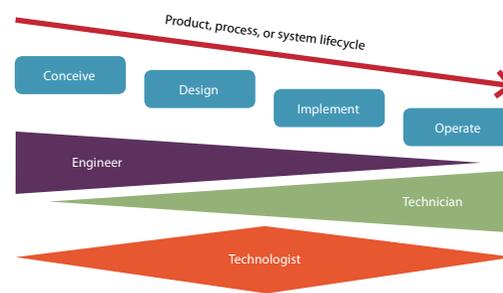
As required by the Engineering Council of South Africa (ECSA), the BEngTech Programmes will be assessed against eleven exit level outcomes (ELO). These are listed below as follows:

1. Problem Solving
2. Application of scientific and engineering knowledge
3. Engineering Design
4. Investigation
5. Engineering methods, skills, tools, including Information technology
6. Professional and Technical Communication
7. Impact of Engineering Activity
8. Individual and Teamwork
9. Independent Learning
10. Engineering Professionalism
11. Engineering Management

UJ's Engineering and Built Environment Qualifications



Engineering Roles in Perspective



The CDIO framework for products/processes/systems is from *Rethinking Engineering Education: The CDIO Approach* by Crawley, et al, 2014; the relationship with the role of technician/technologist/engineer is UJ's approach.

FEBE UJ Engineering Academic Pathways

The Faculty of Engineering and the Built Environment offers essentially three Bachelors Programmes.

- Three (3) year BEngTech (Engineering Technology Qualification)
- Three (3) year Built Environment Bachelor's Degree (Bachelor of Construction; Bachelor Urban and Regional Planning)
- Four (4) year BEng Degree (Engineering Science Qualification)

As per the new Higher Education Qualifications Sub-Framework, the model below is reflective of the articulation of the BEngTech programmes.

Engineering Roles in Perspective

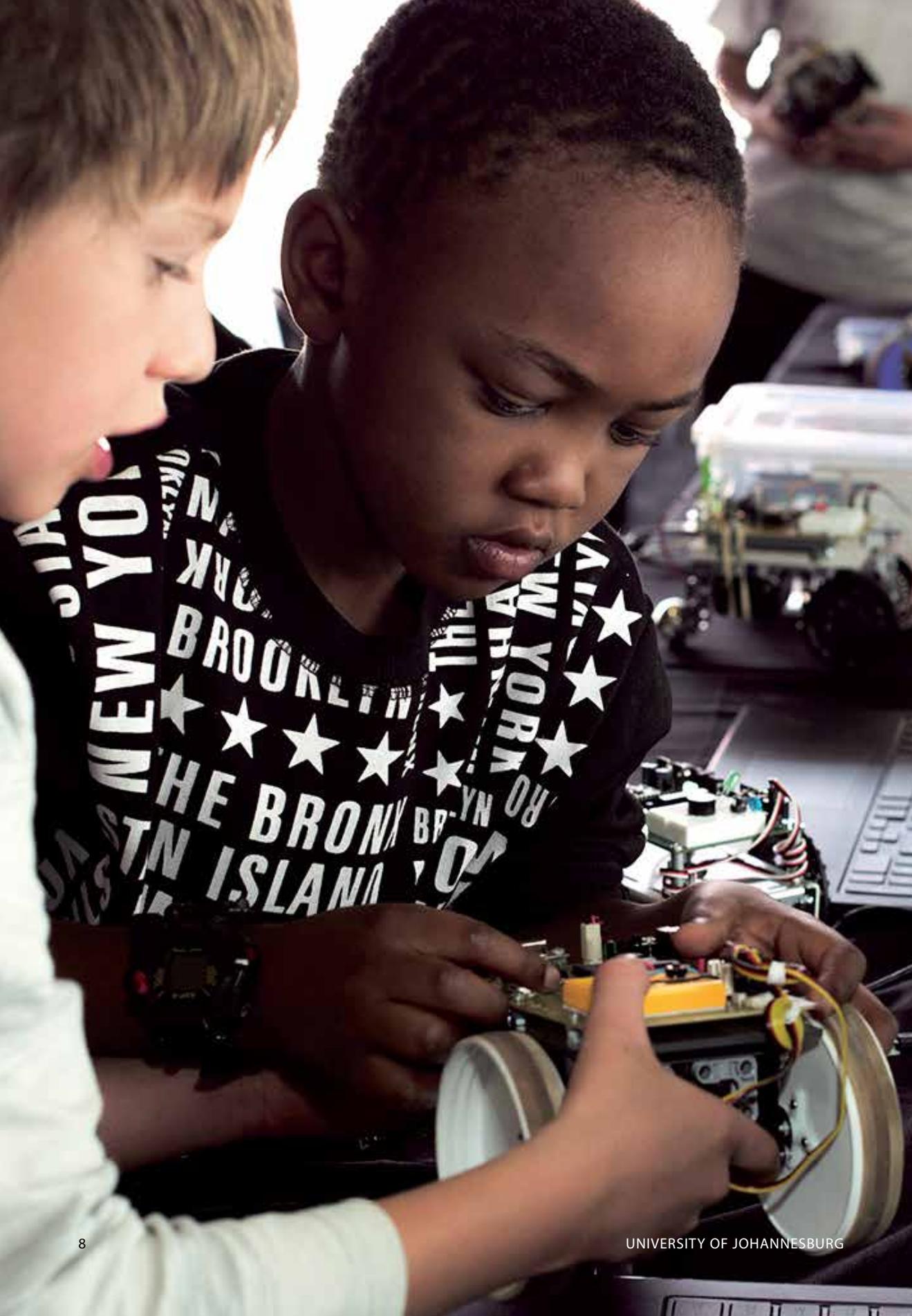
The model above is reflective of Engineering Roles. Whilst an Engineer would focus more on conceiving and design and less on implementation and operation, the Technician's task is inversely proportional. A Technologist, however, will focus on design and implementation, with minimal focus on conceiving and operations.

FEBE is one of two (2) South African/African universities part of the CDIO consortium that is focused on innovative educational framework for producing the next generation of engineers.

Undergraduate programmes

PROGRAMME	Qualification Code	Minimum APS	English	Mathematics	Physical Sciences
Bachelor of Engineering Technology Degree Programmes (3 years)					
BEngTech (Chemical Engineering)	B6CHEQ	30	5	5	5
BEngTech (Civil Engineering)	B6CIVQ	28	5	5	5
BEngTech (Electrical Engineering)	B6ELEQ	30	5	5	5
BEngTech (Extraction Metallurgy)	B6EXTQ	30	5	5	5
BEngTech (Industrial Engineering)	B6INDQ	30	5	5	5
BEngTech (Mechanical Engineering)	B6MECQ	30	5	5	5
BEngTech (Mining Engineering)	B6MINQ	23	5	5	5
BEngTech (Physical Metallurgy)	B6PHYQ	30	5	5	5
New Bachelors Degrees (3 Years)					
Bachelor of Construction	B6CONQ	30	5	5	5
Bachelor of Mine Surveying	B6SURQ	23	5	5	5
Bachelor of Urban and Regional Planning	B6URBQ	27	5	5	*

Notes: * A minimum rating of 5 required for Geography



PROGRAMME	Qualification Code	Minimum APS	English	Mathematics	Physical Sciences
Extended Degree Programmes (4 years)					
Bachelor of Construction Extended	B6COXQ	26	5	5	5
BEngTech (Civil Engineering) Extended	B6CIXQ	26	5	4	4
BEngTech (Electrical Engineering) Extended	B6ELXQ	26	5	5	5
BEngTech (Industrial Engineering) Extended	B6INXQ	24	4	5	5
BEngTech (Mechanical Engineering) Extended	B6MEXQ	24	4	5	5
BEngTech (Physical Metallurgy) Extended	B6PHXQ	22	4	4	4
BEngTech (Extraction Metallurgy) Extended	B6EXXQ	22	4	4	4
Bachelor of Engineering Degree (4 years)					
BEng (Electrical Engineering)	B6ELSQ	32	5	5	5
BEng (Mechanical Engineering)	B6MESQ	32	5	5	5
BEng (Civil Engineering)	B6CISQ	32	5	5	5
BEng (Electrical and Electrical Engineering with IT)	B6EITQ	34	6	6	6

PROGRAMME	Qualification Code	Minimum APS	English	Mathematics	Mathematical Literacy
Diploma Programmes (3 years)					
Management Services	D6MASQ	19 with Mathematics 21 with Mathematical Literacy	4	3	5
Operations Management	D6OPMQ	20 with Mathematics 22 with Mathematical Literacy	4	3	5
Extended Diploma Programmes (4 years)					
Management Services	D6MAEQ	19) with Mathematics 21 with Mathematical Literacy	4	3	5
Operations Management	D6OPEQ	20 with Mathematics 22 with Mathematical Literacy	4	3	5
Given the global nature of FEBE programmes, international students are welcome to apply. International application queries will be addressed by the UJ Division: Internationalisation.					

Career Opportunities

Engineering Technology and Built Environment

Civil Engineering Technology

Students are trained in a range of engineering technology services. Their education is in the planning, design and construction of physical infrastructures. These include buildings, bridges, highways, streets, parks, dams, drainage and irrigation systems, water supply and sewer collection systems, and commercial and industrial facilities. Students also learn to manage and inspect the construction process.

Construction Management and Quantity Surveying

Construction management and quantity surveying professionals possess a sound knowledge of construction, economics, business law and computers and have good communication and literary skills. They have a thorough technical understanding of design forms and construction processes, including procurement and management skills.

Urban and Regional Planning

The Department of Town and Regional Planning maintains strong relations with higher education institutions across South Africa and planning profession, through the South African Planning Institute and the South African Council for Planners. Teaching, learning and research is aligned to national and international trends. The field of Town and Regional Planning covers land-use planning, urban design, transport and infrastructure planning, use and extension of information technology, heritage and conservation, resource management, environmental monitoring, commercial and industrial development, policy making and implementation, as well as planning law and practice.

Electrical Engineering Technology

The Department of Electrical Engineering Technology specialises in computer systems engineering and electrical engineering technology programmes and the development of electronic and computer engineering technicians and technologists. Computer systems engineering technicians provide professional, technical and developmental support to companies in the computer industry. They work in environments such as engineering, communications, information processing and control. Typical activities include hardware design,

software engineering (including programming) and network maintenance and design (including the development of embedded systems).

Mechanical Engineering Technology

Mechanical engineers design, manufacture and maintain industrial machines and engines. They are involved in a range of products ranging from spacecraft and air conditioning systems to automobiles, washers and dryers. Mechanical engineering technology involves applying scientific and engineering theories to technical areas such as product design and development, production, manufacturing, power and control of machinery, materials, quality control and cost analysis. The programme focuses on mechanical engineering skills in relation to key industry sectors such as mining, manufacturing and design.

Industrial Engineering Technology

Industrial engineers design and implement systems in organisations to maximise production. They work with other engineers to put the theory of mechanical, chemical and electrical engineering into practice. Industrial engineers are involved in planning for the processes of storage, movement of materials, and layout of factories. They organise and manage the relationship between other planners, plant operators and the plant itself to ensure a coordinated flow of work and optimal productivity. The Department of Industrial Engineering Technology training at UJ produces skilled graduates, who are able to think creatively in a range of work place settings. The department works closely with industry to develop new interventions to deal with the shortage of process engineering skills, especially in the service sector.

Physical Metallurgy

The Department of Metallurgy at UJ enjoys strong links with the metal industry in South Africa, giving students exposure to a wide range of metal-related operations during their studies. It equips graduates with sound knowledge of the production, design and manufacturing of metals. The key role of an engineering metallurgist is to assess the suitability of metals for use in metallic goods. He or she is skilled in the production of metals and metallic materials. Metallurgical engineers also develop way of processing metals and converting them into useful goods.

FEBE is home to nine Engineering Technology Departments at the Doornfontein Campus. Successful completion of the 3-year BEng Tech Degree leads to professional registration as a Professional Engineering Technologist.

Extraction Metallurgy

Extraction Metallurgists specialise in the extraction of metals and minerals from run of mine ores. They control, design process improvements to optimise the recovery of metals and minerals from ore. Often, these processes require further refining to purify the metals extracted. Graduates are equipped to work in a range of industry settings. Extraction Metallurgists focus on recovery efficiency and cost control. Sampling at various stages in the process is an important aspect of plant control to ensure target recoveries are achieved. Analysis of these samples requires metallurgists to be familiar with chemical analyses as well as other sophisticated analytical techniques.

Mine Surveying

Surveying is a central function on a mine. Mine surveyors provide information to all mining disciplines. Mine surveyors work in the mining science and technology fields and their key focus is on measurements, calculations and mapping for all stages of the mining process. They are involved in the accurate measurement of areas and volumes mined and the precise representation of surface and underground mining on mine plans. They advise mining engineers about geological areas that can be profitably mined. The Department of Mining Engineering and Mine Surveying at UJ has strong links with the mining industry, including the Department of Minerals and Energy Affairs and the Institute of Mine Surveyors South Africa. It is the only department in South Africa offering a full-time contact programme in Mine Surveying. This equips graduates to competently carry out the duties of a mine surveyor.

Mining Engineering

Mining Engineering is concerned with organising, operating and monitoring mining processes as well as with environmental protection and creating safe underground working conditions. The mining industry has advanced with the introduction of new technology, enabling mining companies to improve productivity levels and maximise safety while managing environmental impact. Mining Engineering as a career combines several areas of expertise. In addition to specialist mining knowledge and engineering expertise, a mining engineer needs people and business skills. Mining engineering graduates can

work towards positions at management level, and often end up in mine management roles. The Mining Engineering programme is uniquely career-focused and closely aligned with the mining industry and mining organisations in South Africa. In this way, students can link with potential employers prior to graduation. The main responsibility of a mine manager is to extract minerals from an ore-body safely and economically while meeting the financial targets of a mine. Prior to application, the prospective student must take into consideration the feasibility of entering the programme. The applicant should ideally be exposed to an underground mine visit before making the decision. It is important that the applicant is physically strong with body mass in excess of 40kg, in good health with acceptable senses such as hearing and vision. To gain employment in industry, the individual will also be required to pass a medical assessment. They should ideally have the backing of a mining company.

Chemical Engineering Technology

Chemical Engineering is involved with the physical and chemical transformation of raw materials into finished products. Chemical Engineering Technologists focus on the chemical and physical processes used in the manufacturing industry. They are employed across a wide range of manufacturing environments such as pharmaceuticals, petrochemicals, iron and steel, food and beverages, water and waste water treatment. In these industries, they investigate the nature of chemical reactions, process and equipment optimisation, commissioning and design, trouble shooting and problem solving. Typical job functions involve analysing raw materials and final products, quality assurance, research and development, technical sales and service, and production or process control. Chemical engineering graduates can also focus their work on environmental, health and safety management, as many of the industrial processes release pollutants into environment that can be harmful to humans and the environment.

Quality and Operations Management

Quality and Operations Management includes the range of activities from managing quality and process strategy to human resources and supply chain management. Career opportunities include factory management, as a production supervisor, in product development, flow and cost control.

Career Opportunities

Engineering Science

Civil Engineering Science

The Department of Civil Engineering Science at UJ has recently grown to become one of the largest in South Africa. Key academic focus areas of this Department include water, structures, transport, geotechnical engineering, project management, civil engineering materials, urban development and design.

Electrical and Electronic Engineering Science

Through excellent teaching and innovative learning, the Department of Electrical and Electronic Engineering Science at UJ is focussed on being an internationally recognised Electrical and Electronic Engineering department. It aims to produce graduates who can solve complex engineering problems. Electrical Engineers are concerned with using electricity to transmit energy while electronic engineers are concerned with using electricity to transmit information. Electrical engineers design, manufacture, install and manage systems and installations that generate or use electrical energy. They are involved in fields or control systems.

Mechanical Engineering Science

Mechanical engineering is concerned with a large variety of mechanical equipment varying from small items such as staplers and openers to large constructions such as aircraft, railways, spacecraft, ships, motor cars, and major transport equipment. Mechanical engineers play a significant role in product design, manufacture, maintenance, research, control, development, and management, as well as marketing of mechanical engineering services. In South Africa, mechanical engineers play important roles in heavy industries, transport services, manufacturing, mining, consulting, research, and the commodities industry.

Admission Requirements for applicants with a National Certificate (Vocational) (NCV)

For admission to all FEBE's Undergraduate Degrees the applicant must have:

- A NCV (level 4) issued by the Council for General and Further Education and Training with Degree Endorsement.
- Achieved a minimum of 70% for 5 of the 7 subjects – fundamental and vocational categories.
- Passed English as Language of Teaching and Learning / First Additional Language as fundamental component with a minimum of 70%.
- Passed Mathematics and Physical Sciences as Fundamental Components with a minimum score of 70%.

For admission to the Operations Management and Management Services Diplomas, applicants must have:

- A NCV (level 4) issued by the Council for General and Further Education and Training.
- Achieved a minimum of 60% for 6 of the 7 subjects – fundamental and vocational categories.
- Passed English as Language of Teaching and Learning / First Additional Language as fundamental component with a minimum of 70%.
- Passed Mathematics and Physical Sciences as Fundamental Components with a minimum score of 60%.

Disclaimer: Due to limited space, fulfilling all the minimum entry requirements does not guarantee acceptance into a programme.

FEBE is home to three Engineering Science Departments at the Auckland Park Kingsway Campus. Successful completion of the 4-year BEng Degree leads to professional registration as a Professional Engineer.



Applying at UJ

Inspiring Innovative Engineering Education

University of Johannesburg's Faculty of Engineering and the Built Environment (FEBE) offers the widest range of comprehensive and internationally recognised undergraduate and quality assured postgraduate programmes.

Applications to FEBE requires the appropriate combination of recognised National Senior Certificate (NSC) or Independent Examinations Board (IEB) subjects as well as certain levels of achievement in these subjects as set out in this brochure.

Learners who have not written the National Senior Certificate or Independent Examinations Board final examinations, but fall in the categories listed below will be referred to the Faculty's Admissions Office:

- ACE School of Tomorrow,
- N3/N4/N5/N6 results, and
- Any other final school-leaving certificates not aforementioned.

In addition to the above, a National Benchmark Test (NBT) and PsyCaD evaluation will be required.

Note: Compliance with the minimum requirements **does not guarantee** a place as the University has a specific number of places as approved by the Department of Higher Education and Training for new undergraduate first years.

Conditional and provisional admission is based on the final Grade 11 results. Final admission is based on the final Grade 12 results.

- The earlier you apply, the more likely it is that you will be accepted into a UJ Residence.
- Only once you have applied and you have your student number will you be able to investigate bursaries that may cover your studies.

APPLICATION PROCESS

PAPER APPLICATIONS

- Step 1: Select your qualification study choices 1 and 2. (Ensure you meet the admission requirements as set out in this prospectus.)
- Step 2: Complete the academic application form with a payment of R200 for a paper application (no payment required for online application).
- Step 3: Once you have submitted your application, please allow for three weeks before checking on the status of your application. If your application meets the necessary requirements and there is space in your selected programme, you will be informed on whether your application has been successful or not.

Please note that all official communication will be sent via email. You may also visit the UJ website to check your application status using your ID or student number.

NB: If you receive a conditional acceptance letter, your matric results will determine final admission into the programme you have applied for. Only then will you be allowed to register and sign up for the first year subjects in your selected programme.

www.uj.ac.za

ONLINE APPLICATION PROCESS

Please note the following:

- No application fee will be charged for online applications.
- If you have previously applied and have a UJ student number, please call the UJ Call Centre (011 559 4555) to ensure that your cell number and email address are captured on our student database. This will ensure you receive a PIN number to complete the online application process.

An applicant must go to www.uj.ac.za/apply and select online web application.

- Please keep an eye out on the UJ webpage for any possible change to the instructions to apply online.

NOTE: Payments to UJ must only be made into a UJ bank account. If approached to be assisted for a fee to gain access to UJ, please decline the offer and immediately inform the University thereof.

APPLICATION FEES

Towards promoting accessibility, UJ encourages free online applications. More than 90% of students apply online.

For manual applications, for first-time applicants only, there's an administrative fee of R200 which can be paid to UJ's bank account.

** Please note: Fees and deposits are subject to change.*

www.uj.ac.za/apply

Banking Details:

University of Johannesburg

Bank name: ABSA

Account number: 3240141018

Branch code: 632005

- Reference on the deposit slip: **Please use your ID Number as the reference.**
- If you are prompted for a SWIFT CODE, you must provide the following information: **ABSA ZAJJ.**
- Please attach the original proof of payment to the other documentation when you submit your application form.
- Be sure to make a photocopy of your deposit slip and keep it for your own records.
- Residence deposit: **R1 220.**

The following must accompany your application form if you are currently in Grade 12:

1. Copy of the proof of payment (R200) for paper applications only.
2. Should you apply for accommodation, a deposit of R1 220 must accompany your application.

The following must accompany your application form if you have completed Grade 12:

1. Copy of the proof of payment (R200) for paper applications only.
2. Certified copy of your National Senior Certificate or equivalent qualification.
3. Should you apply for accommodation, a deposit of R1 220 must accompany your application.

Send your application to:

Student Enrolment Centre

Auckland Park Kingsway Campus

University of Johannesburg

PO Box 524, Auckland Park 2006

CLOSING DATES FOR APPLICATIONS

UNDERGRADUATE STUDIES	
All Undergraduate Programmes	29 September 2017 @ 12:00
STUDENT ACCOMMODATION	
All Undergraduate Programmes	29 September 2017 @ 12:00
POSTGRADUATE STUDIES	
All Postgraduate Programmes	31 October 2017 @ 12:00
For more information visit www.uj.ac.za	

How to determine your Admission Point Score (APS)

An Admission Point Score (APS), explained below, has been developed for the National Senior Certificate (NSC) and the Independent Examinations Board (IEB) based on the Achievement Rating of each subject. The total APS is the sum of the achievement ratings of the six school subjects. Life Orientation is not counted in the calculation of the APS.

APS	NATIONAL				INTERNATIONAL										
	NSC	SC HG (M-SCORE)	SC SG (M-SCORE)	IEB	HIGCSE/ NSSC (HL)	IGCSE/ NSSC (OL)	A'S LEVELS	A LEVELS	IB (HL)	IB (SL)	WAEC	KCSE	Diplome/ Exam D'Etat	CHL/EM	Gabonese Baccalaureate
10								A	7						
9								B	6						
8								C	5						
7	7 (80-100%)	A		7	1		A	D	4	7		A			
6	6 (70-79%)	B	A	6	2		B	E	3	6		B			
5	5 (60-69%)	C	B	5	3	A	C		2	5	A	C	80-100%	16-20	16-20
4	4 (50-59%)	D	C	4	4	B	D		1	4	B	D	70-79%	14-15	14-15
3	3 (40-49%)	E	D	3		C	E			3	C	E	50-69%	10-13	10-13
2	2 (30-39%)	F	E	2		D/E				2	D/E	F	30-49%	8-9	8-9
1	1 (0-29%)	G	F	1		F/G				1	F/G	G	0-29%	0-7	0-7

ABBREVIATIONS

NSC	National Senior Certificate (completed Grade 12 in and after 2008)
SC HG	Senior Certificate Higher Grade (completed Grade 12 before 2008)
SC SG	Senior Certificate Standard Grade (completed Grade 12 before 2008)
IEB	Independent Examination Board
HIGCSE	Higher International General Certificate of Secondary Education
IGCSE	International General Certificate of Secondary Education
NSSC(HL)	Namibia Senior Secondary Certificate (Higher Level)
NSSC(OL)	Namibia Senior Secondary Certificate (Ordinary Level – Cambridge)
AS	Advanced Subsidiary Level (Cambridge)
A Level	Advanced Level (Cambridge)
IB(HL)	International Baccalaureate Schools (Higher Levels)
IB(SL)	International Baccalaureate Schools (Standard Levels)
WAEC	West African Examination Council
KCSE	Kenya Certificate of Secondary Education
Diplome/Exam D'Etat	Diplome d'Etat or d'Etudes Secondaire du Cycle
CHL/EM	Certificado de Habilitacoes Literarias (Mozambique) / Ensino Medio (Angola)
Baccalaureate	Gabonese School Leaving

Points are awarded for the six symbols on your Grade 11 or Grade 12 report. See example below.

School Subject	Marks	APS
First language (language of teaching and learning)	65%	5
Additional recognised language	71%	6
Mathematics or Mathematical Literacy	61%	5
Accounting	68%	5
History	81%	7
Geography	86%	7
Total		35

* Life Orientation is not counted in the calculation of the APS.

Disclaimer: In order to be considered for selection for a programme, an applicant is required to comply with the programme's minimum admission criteria in respect of the total APS as well as their Group A and B subjects. Meeting the Faculty's minimum requirements for a particular programme does not necessarily guarantee admission to that programme as specific selection criteria may be applied.

INTERNATIONAL STUDENTS: ADMISSION REQUIREMENTS

Admission for international applicants is subject to meeting the compliance requirements as stipulated by the Immigration Act No 13 of 2002, the regulations made thereunder and the University's policy.

Application and closing date

Applications open on 1 April of the year preceding the year of study and close on 29 September at 12:00 noon. You may apply online at www.uj.ac.za and follow a link to **Apply@UJ**, or you may download the application form, which should either be submitted to the Student Enrolment Centre or mailed to the University.

Please note: All applicants are advised not to send cash by mail or leave documents and cash with any unauthorised persons.

All international applicants should take note of the following:

- Submit a completed application form with certified supporting documents:
 - Sworn English translation of documents (applicants from non-English medium schools only)
 - All documents as indicated on the UJ web.
- The University of Johannesburg offers applicants a first and second choice in terms of what they wish to study. All applicants should fill in both a first and a second choice on the application form.
- Submit completed application for on-campus residence with proof of payment for the applicable deposit.

Undergraduate degree-seeking applicants

In order to study for a South African degree, applicants are required to have achieved the equivalent of a South African National Senior Certificate with a degree endorsement. All international applicants with high school results or qualifications achieved outside of the Republic of South Africa require a certificate of exemption from the Matriculation Board of South Africa for admission into undergraduate studies. All degree-seeking applicants are

required to submit the following supporting documents which must be certified for submission to the Matriculation Board (HESA):

- Completed Form M30 (download it from the Matriculation Board on Universities South Africa (USAf) website, www.he-enrol.ac.za)
- Certified copies of the applicant's educational results or qualifications certified by a South African High Commission, Consulate, Trade Mission or a Public Notary in your home country
- A certified copy of your passport or birth certificate certified by a South African High Commission, Consulate, Trade Mission or a Public Notary in your home country
- Exemption fee as determined by the Matriculation Board (refer to Universities South Africa website, www.he-enrol.ac.za)
- Sworn English Translation of documents (applicants from non-English medium schools only).

Contact Details – Matriculations Board

1st Floor, Blocks D & E
Hedefields Office Park
1267 Pretorius Street
Hatfield
Pretoria
Tel no: +27 12 481 2847/8
Fax no: +27 12 481 2922
Email: exemption@he-enrol.ac.za
Website: www.he-enrol.ac.za

Compulsory Study Visa

All accepted International applicants (passport holders) are required by law to upon receipt of their admission or acceptance letter, immediately apply for a study visa in line with the Immigration Act No. 13 of 2002, Immigration Regulations.

For more information please contact the University of Johannesburg, Division for Internationalisation or visit the Republic of South Africa Embassy, Consulate or Mission in your home country or visit the Republic of South Africa Department of Home Affairs website: www.dha.gov.za

University Fees

All accepted International applicants who are privately or self-funded are required to pay their Fees prior to or during registration as follows;

TUITION AND UJ RESIDENCE FEES (ON CAMPUS RESIDENCE)

- An upfront payment of 30% of tuition fees to be paid at registration.
- 35% of the tuition fees to be paid by 30 April.
- 35% of the tuition fees to be paid by 31 July.

The University will offer a 5% discount should all fees be paid at registration.

Fees generally increase between 10 and 15 percent per year. Please contact the University in December to obtain the approved fees for the next academic year.

International Levy 2017

Please note that the international levy is non-refundable and expires on 31 December of the year of registration. The international levy for the year 2018 will be published prior to registration.

How to pay

Payments to the University can be made in the form of a foreign bank payment or electronic transfer into the following account:

University of Johannesburg

ABSA Bank
Auckland Park, Gauteng, South Africa
Account: 2840 189565
Branch code: 632005
Swift code: ABSAZAJJ

International applicants making payments at ABSA Bank in South Africa should make use of the following banking details:

University of Johannesburg

ABSA Bank
Auckland Park, Gauteng
South Africa
Account: 4055642621
Branch code: 632005

All applicants must use their **passport** or **student** numbers as a reference.

Applicants must provide the University with proof of payment from the bank where the transfer was made.

English Proficiency Test

If English is not an official language or used as a medium of learning and teaching in your home country, you are required to provide an English Proficiency Test Score. Only the following will be accepted: IELTS at an overall score of 6 and TOEFL at an average score of 80-104 for Undergraduate programmes. Alternatively, you may elect to write the University of Johannesburg English Language Programme Test (UJELP). Should you choose to write the University of Johannesburg English Language Programme Test (UJELP), Miss Dumisa Vinindwa will be the contact person. Miss Vinindwa is contactable on 011 559 4265 or dumisav@uj.ac.za.

International applicants may contact us

For further enquiries or information applicable to all international applicants you can visit the University of Johannesburg Website at **www.uj.ac.za** or the Division for Internationalisation Home Page: **www.uj.ac.za/international**

ADMISSIONS OFFICERS: INTERNATIONAL STUDENTS

Auckland Park Kingsway Campus (APK)

Mrs Mampou Ngqumshe
Tel no: +27 11 559 4517 / mampoum@uj.ac.za

Doornfontein Campus (DFC)

Mr Thabang Mothebe
Tel no: +27 11 559 6510 / thabangm@uj.ac.za

Auckland Park Bunting Road Campus (APB) and Soweto Campus (SWC)

Ms Palesa Makwela
Tel no: +27 11 559 1027 or +27 11 559 5014 / pmakwela@uj.ac.za

International Student Welfare and Academic Liaison Officer

Ms Shantelle Sass
Tel no: +27 11 559 3129 / ssass@uj.ac.za

Physical Address

University of Johannesburg
Corner of Kingsway and University Road
Auckland Park, Johannesburg , South Africa





Campus Life

www.uj.ac.za/nbt

NATIONAL BENCHMARK TEST (NBT)

The University of Johannesburg requires all First Year applicants to write the National Benchmark Test (NBT) by 15 December 2017. The NBT does not replace or duplicate information obtained from secondary school academic performance. NBT results may be considered for admission and placement and are considered when determining the need for academic support.

The NBTs may be written countrywide during the second half of 2017. Information as to dates, venues, tests, registration and costs is available from the NBT national website at www.nbt.ac.za or from the NBT Call Centre at 021 650 3523. Results are automatically sent to you as well as to any university you may have applied to.

There are two benchmark tests: the test in Academic and Quantitative Literacy (AQL), which all entrants will write; and the Mathematics (MAT) test, which is only required for applicants applying for certain programmes. Please only write the Mathematics test if you have included Mathematics in your NSC subjects. Do not write Mathematics if you have studied Mathematical Literacy. See www.uj.ac.za/nbt to ascertain whether you will need to write only the AQL or both the AQL and MAT tests.

Campuses

The University of Johannesburg has four campuses, namely the Auckland Park Bunting Road (APB), Auckland Park Kingsway (APK), Doornfontein (DFC) and Soweto (SWC) Campuses. Each one has a unique identity and history, and we endeavour to deliver high quality education and service to all our students on all four campuses. You will attend classes at the campus where the qualification you are registered for is offered. If you are enrolling for a qualification that is offered at various sites of delivery, you will attend classes at the campus where you have been accepted for enrolment.

Languages of instruction

The University of Johannesburg is a multilingual institution and promotes the preferred languages of the province of Gauteng, namely English, Sesotho sa Leboa, Afrikaans and isiZulu. The language of instruction in all programmes is English. However, some programmes/modules also provide for instruction in Afrikaans. Details are provided in the various faculty sections.

Psychological Services and Career Development (PsyCaD)

PsyCaD offers a comprehensive range of psychological and career development services to support our students with the academic, emotional and social demands of university life to enhance their success experiences.

Services are offered at no cost to registered students and are available on all four campuses. Services are also offered to prospective students and the general public at a cost.

PsyCaD offers Therapeutic interventions, Preventative workshops, adjustment groups and support groups through its Academic Counselling Services Unit.

Career development services available to Grade 11 and 12 learners and enrolled students:

- Career assessments to assist prospective and enrolled students in their study and career decision making. Feedback discussions are conducted by psychologists experienced in career development.
- Comprehensive Career Resource Centres where clients may access a variety of

printed and electronic career and company information resources.

- Annual graduate recruitment programme that is well supported by a variety of top national and international companies.
- YourCareer web-based Career Services solution for students to build dynamic CVs, view company profiles, apply for jobs, and sign up for interviews. The YourCareer portal serves as an ideal meeting place between UJ graduates in the process of entering the labour market, and companies wishing to recruit UJ students and graduates for vacation and part-time work, or full-time employment upon graduation.

To learn more about PsyCaD Career Services, visit our dedicated website at www.ujcareers.co.za. Contact us at **011 559 3324** or follow us online:

Career Services

Facebook: [facebook.com/PsyCaDCareerServices](https://www.facebook.com/PsyCaDCareerServices)

Twitter: twitter.com/UJCareerService

PsyCaD

Facebook: [facebook.com/PsyCaD](https://www.facebook.com/PsyCaD)

Twitter: twitter.com/PsyCaD

Website: <http://www.uj.ac.za/PsyCaD>

Disability Unit

The Disability Unit provides reasonable accommodation with regards to academic and technological support required by students with disabilities.

The following are some of the services offered to students with disabilities:

- Collaboration between the relevant faculty and the student to ensure the specialised support required by the student
- Support with access related issues and campus orientation
- Reasonable accommodation support for tests and examinations
- The provision of accessible learning material and aids, e.g. electronic, braille, and enlargements
- Computer training and technological support with regards to assistive devices
- Psycho-social support for students with disabilities

- A specialised work environment and computer laboratories equipped with state of the art assistive technology and specialised software
- Assistance with appropriate residence placement
- Assistance with bursary application

Prospective students are encouraged to contact the office for more information.

Disability Unit

Email: disabilityunit@uj.ac.za

Tel: 011 559 3745

Library and Information Centre (LIC)

The libraries on all our campuses support the academic and research needs of students. They ensure access to books, periodicals, electronic databases and the Internet. Knowledgeable staff members are available to train students in the use of all information sources. For more information, visit the library web page at <http://www.uj.ac.za/EN/Library/Pages/default.aspx>. The web page also gives access to the library catalogue (UJLink) and the electronic databases.

Putting learning in your hands

The University introduced handheld devices into first-year classrooms in 2014, in a bid to connect the young minds with the world of e-knowledge they are growing into, and transform their ability to contribute and compete globally. You will use your handheld device in a multitude of ways: to manage your modules and timetables, review your module learning guides, check your marks, access e-books and other study and administrative requirements. Providing information and engagement, these devices will bring a new and powerful immediacy, collaboration and ease of access to studies.

Computer laboratories and Wi-Fi hotspots

Various computer laboratories and easy access to our Wi-Fi hotspots give students access to educational software, the World Wide Web and email.

UJ Arts & Culture

Practical experience, performance opportunities in a range of genres and community engagement initiatives are available to UJ students, staff, alumni and the general public on all four campuses. Contact the relevant cultural office for details:

- Soweto: 011 559 5678
- Doornfontein: 011 559 6959
- Bunting Road: 011 559 1309
- Kingsway: 011 559 4674

For further information call 011 559 3058 or go to www.uj.ac.za/arts

Primary Health Care Service

Full-time nursing sisters at our Campus Health Service are qualified to deal with a wide range of minor medical problems. They offer Primary Health Care services that include; treatment of minor medical problems, health education, the screening and monitoring of chronic conditions, reproductive health care (e.g. family planning), travel health, as well as free and confidential HIV counselling and testing (HCT).

Centre for Academic Technologies (CAT) (uLink)

CAT energises your learning through the effective use of academic technologies and thus promotes learning-to-be with technology. Get a head start in your studies with our training in basic computer and tablet skills and our online support in the use of the University's online learning environment, Blackboard; our mobile app, **uGo**, as well as **uLink** – the entry point to information and resources you will need once you are a registered student at UJ. Via the Mobile Learn App, you will also be able to access your online modules on your smartphone. For any queries, you are welcome to contact the CAT helpdesk at uhelp@uj.ac.za or 011 559 3580.

UJ Sport

University of Johannesburg Sports strive to produce High Performance programmes for men and women that are characterized by excellence. Excellence in inter campus and institutional programmes is determined by academic achievement and the development of character, maturity and a sense of fair play

in our sport programs. In striving to become a leader among our peers, the Department subscribes fully to the philosophy and regulations set forth by the student sport and national federations and operates within the fiscal regulations and non-discriminatory procedures established by the University of Johannesburg Legislature. The decisions and priorities of the Department should always focus on our athlete-students; first as individuals; second, as students; and third, as athletes.

www.uj.ac.za/ujsport

Protection Services

Protection Services personnel are on duty 24 hours a day to ensure the safety and welfare of students, staff and visitors to the campuses and to control traffic and parking. They are also responsible for emergency assistance, fire warnings and first aid on campuses.

Student Centres

Equipped with meeting places, restaurants, cafeterias, recreational facilities and even shops for added convenience, our campuses are like independent villages in the city. Some of our student centres house banks, bookshops, medical doctors, hairdressers, gift shops, PostNet and a supermarket. You will also never have to run on an empty stomach as all the campuses have cafeterias or coffee shops. After all, we know that sharing a sandwich with someone special just may be a life-changing experience!

Student Accommodation

A residence is a community in which one meets a range of diverse students and may forge life-long friendships. In order to experience university life to its fullest, why not reside on campus? The University of Johannesburg offers students a wide selection of comfortable accommodation, which ranges from various types of residences to fully equipped apartments. Staying in a University of Johannesburg residence is an extension of your education, and you can benefit from all facilities and services, which are also sources of social enrichment, such as study centres, campus libraries, cafeterias, restaurants and sports facilities within easy walking distance of the lecture halls, life skills and peer tutoring programmes. Like-minded students from all over



the country, who could all become your friends, will surround you. Apart from our academic programme, we offer extramural activities, such as the first year concert, debate, poetry sessions, indigenous games, a choir festival, a play festival, community service, and many socially engaging activities to create a vibrant residence life.

If you would like to apply to stay on campus, please complete the Residence Application form and submit it together with your UJ Application form as soon as possible. **You may only stay on the campus where you attend your studies.** The residence application deposit fee is R1 220. Please note the academic admission to the University does not ensure automatic admission to a residence. The University will inform you via email, sms or in writing, of the outcome of your residence application.

Private accredited off-campus accommodation

The University of Johannesburg has private accredited off-campus accommodation available should your application for a UJ residence not be successful. For more information on these facilities, please enquire at the residence offices located at all four campuses.

Residence Enquiries

Auckland Park Bunting Road Campus (APB)
Ladies' Residences: 011 559 1566
Men's Residences: 011 559 1566

Auckland Park Kingsway Campus (APK)

Ladies' Residences: 011 559 2092
Men's Residences: 011 559 2863

Doornfontein Campus (DFC)

Ladies' Residences: 011 559 6552
Men's Residences: 011 559 6552

Soweto Campus (SWC)

Ladies' Residences: 011 559 5015
Men's Residences: 011 559 5015

Day Houses

For purposes of bringing students together, provide educational opportunities beyond classroom, recreational activities and life skills the University of Johannesburg established day houses as a support structure for students who are not living in UJ residences. The main objective of Day Houses is to create a platform that enhances academic excellence, the celebration diversity within the community, and holistic development of students.

Members of Day Houses enjoy all benefits that are enjoyed by residence students. Each Day house has its own unique culture. You are welcome to join a day house of your choice.

Day House Central Admin Office enquiries
011 559 4989 – Kingsway Campus
011 559 1040 – Bunting Road Campus
011 559 6736 – Doornfontein Campus
011 559 3022 – Soweto Campus

SCHOLARSHIPS/BURSARIES

Merit bursaries

Academic merit bursaries are awarded annually on the grounds of exceptional academic achievement. This is determined according to marks obtained in the six best subjects on your senior certificate. Your final senior certificate will determine your first year bursary. Bursaries for second and third year studies will be awarded according to the average obtained in the June and December University examinations.

Orange Carpet

The Orange Carpet is a UJ initiative to further recognise top achievers. The objective of the campaign is to allow top-performing learners early conditional admission to the University as well as special benefits. To qualify for these benefits, a learner must obtain at least an Admission Points Score (APS) of 36 and above with a level 6 or higher in all subjects in either their final grade 11 or final grade 12 results. Final acceptance, for applicants conditionally admitted based on their final grade 11 results, will be dependent on the learner maintaining these results in their final grade 12 results.

Final admission as Orange Carpet for applicants writing final grade 12 other than the NSC or IEB, will be based on the discretion of the relevant faculty.

This initiative begins from February and closes with all undergraduate programmes on 29 September. Submit your application without delay or call the Department of Student Marketing for any enquiries: 011 559 6044 or 011 559 6680. The University's terms and conditions apply.

APS (Admission Point Score)	Bursary Value*
Under 35	No bursary
35-36	30%
37-39	50%
40-41	75%
42	100%
Higher than 42	100% + R5 000

* **Please note:** Bursary values are based on a specific curriculum's tuition fees. The APS will only be calculated on the best six Grade 12 subjects obtained.

* Life Orientation is NOT calculated in the APS.

Only prospective students who are entering for their first undergraduate studies are eligible for the Orange Carpet initiative. Prospective students who have already undertaken studies at UJ or elsewhere are not eligible for this initiative.

Leadership bursary

The President, Vice-President, Secretary or Treasurer of a secondary school body who enrolls at the University will receive a bursary of R1 650.

Culture and sports bursaries

The University offers many cultural activities and sports opportunities, as well as a large number of bursaries in these fields. Sports bursaries are awarded for achievement at provincial or a higher level. Applications for sports bursaries must be submitted on the prescribed bursary application form obtainable from the Sports Bureau. Closing date for applications is 29 September.

Cultural Bursaries are awarded to members of the UJ Arts & Culture groups. Enquiries: Culture bursaries: 011 559 2034 or Sports bursaries: 011 559 2252

Alumni bursaries and discounts

1. Access to R80 000 (per annum) worth of bursaries for Alumni members and their children (bursary application to be completed and handed in at the Alumni Office).
2. Children of contributing Alumni Network members, who register for undergraduate curricular programmes at UJ, are eligible for a 10% discount on residence and tuition fees (a separate application to be completed each year and handed in at the Alumni Office).

Enquiries: 011 559 2431

Loans

National Student Financial Aid Scheme (NSFAS)

Study loans vary according to family income and cover the actual costs of studies for accepted undergraduate students. Applications for NSFAS loans must be submitted on the prescribed loan application form obtainable from the Division of Bursaries and Loans.

The maximum loan awarded by NSFAS is R67 200.00 per student per academic year. Any funds in excess will be for the students' own account .

Closing date for NSFAS applications:
30 November 2017 for 2018 registration.

Website: www.uj.ac.za/nsfas

Enquiries:

Auckland Park Bunting Road Campus
011 559 1193 / 1250 / 1173 / 1594

Auckland Park Kingsway Campus
011 559 3642 / 3906 / 4035 / 3768 / 3575

Doornfontein Campus
011 559 6195 / 6412 / 6063

Email: nsfas@uj.ac.za

Edu-loan

Study loans are available to registered students.

Enquiries: Edu-loan Customer Services
011 559 3552 or 086 055 5544



CONTACT DETAILS

Faculty of Engineering and the Built Environment

Tel: +27 (0)11 559 6588/+27 (0)11 559 2599

Email: web-engineering@uj.ac.za

Facebook: [Engineering@UJ](https://www.facebook.com/Engineering@UJ)

Twitter: [@EngineeringUJ](https://twitter.com/EngineeringUJ)

Website: www.uj.ac.za/faculties/febe

#UJFEBE

