CSET

2020-2021
PROSPECTUS

Define tomorrow.

UNISA

college of
science, engineering
and technology

UNISA STUDENTS ARE WIDELY RECOGNISED IN THE WORKPLACE

Recognition of our students is not only based on their qualifications, but also on their work ethic and ability to function independently, with perseverance and self-discipline. Unisa students tend to be more mature, can plan their studies around their work and still have time for family and other commitments. Self-discipline and time management are two of the skills required to study at Unisa – distance education may not be for everyone, but it may just be for you! Imagine a flexible classroom that can be adjusted around your schedule – your classroom will be wherever you are: a room at home, a desk at work, a hotel room while you are on a business trip.

As a modern distance-learning institution, Unisa uses the latest IT technology, integrated in the learning process. However, if you do not have a computer or internet access, you are not excluded! You may use any of our telecentres to access modern information technology resources. Wherever you are in the world, as a Unisa student you are never alone. We have provided a number of support services for our students, such as the online learning portal, called myUnisa. We also offer online discussion forums, where you can chat to other students and your lecturers and content specialist e-tutors; and you will also have access to career and study counsellors.

HOW READY ARE YOU FOR ODeL?

Open distance e-learning (ODeL) is a different way of learning compared to your previous learning experiences. Most importantly: you will have to take responsibility for your studies. Your contact with the University, your lecturers or your fellow students will be mostly via the internet or other electronic media chanels.

THIS MAY BE YOUR OPPORTUNITY. ARE YOU READY FOR THE CHALLENGE?

OUR VISION

The vision of the College of Science, Engineering and Technology (CSET) is to "develop world class, futuristic, African science, engineering and technology leaders, who aspire to extend the frontiers of innovation".

OUR MISSION

CSET provides graduates with an enabling environment for advancing science, engineering and technology knowledge that is nationally responsive and globally relevant.

OUR VALUES

- Academic excellence
- Quality service
- Responsibility and accountability
- Adaptability
- Equity and respect
- Integrity

The College of Science, Engineering and Technology believes in providing affordable, accessible, high-quality, relevant Science, Engineering and Technology programmes. Therefore, we offer innovative delivery approaches and mechanisms that support our extensive student base through excellent research, community engagement, academic and administrative staff, and systems.

MODERN FACILITIES

The Unisa Science Campus offers state-of-the-art laboratories and high-end equipment, thereby advancing science education and research at a national level. It features 12 buildings, a library, two auditoriums and a large study area. The new laboratories are for teaching and learning, and research purposes. The modern facilities and equipment not only enable the training of both undergraduate and postgraduate students, but also attract international scholars and researchers to collaborative research. The Science Campus creates an environment that truly stimulates research and innovation, supports researchers and scientists, and meets the educational and training needs of Unisa's distance-learning students, at both undergraduate and postgraduate levels.

RECOGNITION OF PRIOR LEARNING (RPL)

During your lifetime, you might have acquired various skills, competencies and experiences. This learning – which may have taken place outside formal education and training – is valuable, regardless of where or when it was obtained. You may have acquired skills or knowledge from a combination of training conducted while at work, experience gained at work, short courses, or from community work in a relevant field. RPL permits you to gain credits towards formal certificate, diploma and degree qualifications offered by Unisa, based on the level and extent of your knowledge. Your prior learning will be measured against specified prescribed learning outcomes.

*For more information on recognition of prior learning, please email **rpl@unisa.ac.za** or visit **www.unisa.ac.za/rpl**.*

CHOOSE YOUR QUALIFICATION

UNDERGRADUATE QUALIFICATIONS

HIGHER CERTIFICATES

- Higher Certificate in Physical Sciences (90101)
- Higher Certificate in Mathematics and Statistics (90129)

DIPLOMAS

- Diploma in Chemical Engineering (90130)
- Diploma in Civil Engineering (90137)
- Diploma in Electrical Engineering (90138)
- Diploma in Industrial Engineering (90136)
- Diploma in Information Technology (98806 - ITE)
- Diploma in Mechanical Engineering (90132)
- Diploma in Pulp and Paper Technology (90141)
- Diploma in Mining Engineering (90140)

Additional qualifications will be added once the legal registration process of the new qualifications with the relevant authorities has been completed.

ADVANCED DIPLOMAS

- Advanced Diploma in Chemical Engineering (90128)
- Advanced Diploma in Electrical Engineering in Power Engineering (90126)
- Advanced Diploma in Electrical Engineering in Telecommunications (90127)
- Advanced Diploma in Industrial Engineering (90134)
- Advanced Diploma in Information Resource Management (90007)
- Advanced Diploma in Mechanical Engineering (90133)
- Advanced Diploma in Mining Engineering (90131)
- Advanced Diploma in Civil engineering SAQA ID (115862)

Additional qualifications will be added once the legal registration process of the new qualifications with the relevant authorities has been completed.

BACHELOR DEGREES

- Bachelor of Science Applied Mathematics and Computer Science Stream (98801 - AMC)
- Bachelor of Science Applied Mathematics and Physics Stream (98801 - AMP)
- Bachelor of Science Applied Mathematics and Statistics Stream (98801 - AMS)
- Bachelor of Science Chemistry and Applied Mathematics Stream (98801 - CAM)
- Bachelor of Science Chemistry and Computer Science Stream (98801 - CCS)
- Bachelor of Science Chemistry and Information Systems Stream (98801 - CIS)
- Bachelor of Science Chemistry and Physics Stream (98801 - CAP)
- Bachelor of Science Chemistry and Statistics Stream (98801 - CAS)
- Bachelor of Science General (98801 - GEN)
- Bachelor of Science Mathematics and Applied Mathematics Stream (98801 - MAM)
- Bachelor of Science Mathematics and Chemistry Stream (98801 - MAC)
- Bachelor of Science Mathematics and Computer Science Stream (98801 - MCS)
- Bachelor of Science Mathematics and Information Systems Stream (98801 - MIS)
- Bachelor of Science Mathematics and Physics Stream (98801 - MAP)
- Bachelor of Science Mathematics and Statistics Stream (98801 - MAS)
- Bachelor of Science Statistics and Physics Stream (98801 - STP)
- Bachelor of Science in Computing (98906 - COM)
- Bachelor of Science in Informatics (98907 - INF)

POSTGRADUATE DIPLOMAS

- Postgraduate Diploma in Information Resource Management (90069)

HONOURS DEGREES

- Bachelor of Commerce Honours in Business Informatics (98450)
- Bachelor of Science Honours in Applied Mathematics (98921)
- Bachelor of Science Honours in Astronomy (98920)
- Bachelor of Science Honours in Chemistry (98919)
- Bachelor of Science Honours in Computing (98908)
- Bachelor of Science Honours in Mathematics (98923)
- Bachelor of Science Honours in Physics (98918)
- Bachelor of Science Honours in Statistics (98922)

NB: *Bachelor of Engineering Technology Honours (NQF level 8) will be offered in 2021.*

- BET Hons. in Chemical Eng. SAQA ID 110626
- BET Hons. in Civil Eng. in Structural Eng. SAQA ID 11064
- BET Hons. in Civil Eng. in Water Eng SAQA ID 110626
- BET Hons. in Elec. E ng. in Electronics Eng. SAQA ID 115456
- BET Hons. in Elec. Eng. in Power Eng. SAQA ID 112036
- BET Hons. in Mechanical Eng. SAQA ID 115456
- BET Hons. in Industrial Eng. SAQA ID 111230

POSTGRADUATE QUALIFICATIONS

MASTER'S DEGREES

- Master of Science in Applied Mathematics (*Full Dissertation*) (98971)
- Master of Science in Astronomy (*Full Dissertation*) (98973)
- Master of Science in Chemistry (*Full Dissertation*) (98975)
- Master of Science in Chemistry Education (*Full Dissertation*) (98963)
- Master of Science in Computing (*Full Dissertation*) (98961)
- Master of Science in Computing Education (*Full Dissertation*) (98964)
- Master of Science in Life Science Education (*Full Dissertation*) (98965)
- Master of Science in Mathematics (*Full Dissertation*) (98977)
- Master of Science in Mathematics Education (*Full Dissertation*) (98966)
- Master of Science in Physics (*Full Dissertation*) (98980)
- Master of Science in Physics Education (*Full Dissertation*) (98967)
- Master of Science in Science Education (*Full Dissertation*) (98968)
- Master of Science in Statistics (*Full Dissertation*) (98982)
- Master of Science in Statistics Education (*Full Dissertation*) (98969)
- Master of Science in Technology Education (*Full Dissertation*) (98970)
- Master of Engineering (*Full Dissertation*) SAQA ID 112503

*The School of Computing is set to offer the **MSc in ITM (Information Technology Management)** from 2021*

DOCTORAL DEGREES

- Doctor of Philosophy Science, Engineering and Technology (90040 - SET)
- Doctor of Philosophy in Applied Mathematics (98972)
- Doctor of Philosophy in Astronomy (98974)
- Doctor of Philosophy in Chemistry (98976)
- Doctor of Philosophy in Computer Science (98803)
- Doctor of Philosophy in Information Systems (98804)
- Doctor of Philosophy in Mathematics (98979)
- Doctor of Philosophy in Physics (98981)
- Doctor of Philosophy in Statistics (98984)

*You may apply for the CSET Master's and PhD qualifications outside the prescribed application dates (excluding Computing students.) Please contact the Master's and Doctoral Administration Section for assistance (**011 471 3296**; **mandd@unisa.ac.za**).*

ADMISSION REQUIREMENTS

HIGHER CERTIFICATE QUALIFICATIONS

A National Senior Certificate (NSC), with at least 30% in the language of teaching and learning and 40% in Mathematics

OR

A Senior Certificate, with at least 30% in the language of teaching and learning and 40% in Mathematics in terms of the NSC

OR

A National Certificate (Vocational) Level 4, with at least 30% in the language of teaching and learning and 40% in Mathematics in terms of the NSC

DIPLOMA QUALIFICATIONS IN ENGINEERING

The learners accepted to enrol for the qualification must meet one of the following requirements:

A National Senior Certificate (NSC) (Diploma endorsement) with a rating of 4 in Mathematics or Technical Mathematics not (Mathematical Literacy), English, Physical Science or Technical Science, or N4 Mathematics and Engineering Science with minimum mark of 50%,

OR

a Senior Certificate (prior to 2008) with Mathematics, Physical Science and English with at least a D symbol on the Higher Grade or C symbol on the Standard Grade or N4 Mathematics and Engineering Science with minimum mark of 50%,

OR

NC(V) National Certificate (Vocational) (Diploma endorsement) with English, Mathematics and Engineering Science with a minimum mark of 50%.

OR

Higher Certificate in relevant field.
- Applicants who do not comply with the above requirements should consider applying for a lower level qualification for which they meet the statutory and additional requirements.

DIPLOMA IN INFORMATION TECHNOLOGY

A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics or at least N4 Mathematics passed with a minimum of 50% and N4 English, or N4 Communication, or N4 Communication Technology passed with at least 50%

OR

a Senior Certificate (SC) with at least a D symbol on HG or a C symbol on SG in the language of teaching and learning, and with at least a D symbol on HG or a C symbol on SG in Mathematics, and a D symbol on HG or a C symbol on SG in Physical Science, if any Physics or Chemistry modules form part of the curriculum of a selected qualification, or at least N4 Mathematics passed with a minimum of 50% and N4 English, or N4 Communication, or N4 Communication Technology passed with at least 50%.

To enter diploma qualifications students have to comply with all admission requirements, inclusive of the minimum APS of 18, and must be eligible for admission into diploma studies. Applicants who do not comply with the above requirements should consider applying for a lower level qualification for which they meet the statutory and additional requirements

ADVANCED DIPLOMA IN INFORMATION RESOURCE MANAGEMENT

An appropriate Diploma or National Diploma or Bachelor's Degree in IT or an ICT related qualification field on NQF level 6 from an accredited provider of higher education or a minimum of 60% of the completed coursework qualification that satisfies the vocational requirement of the Advanced Diploma qualification

ADVANCED DIPLOMA QUALIFICATIONS IN ENGINEERING

To be accepted for an Advanced Diploma, you must have completed:

A National Diploma in Engineering, NQF level 6, in the relevant field

OR

A 360 credit Diploma in Engineering at NQF Level 6, in the relevant field

OR

Advanced Certificate in Engineering Practice in a relevant field at NQF Level 6, from an accredited provider of higher education

OR

A national or international equivalent qualification at NQF level 6 in the appropriate field

BET HONOURS DEGREES IN ENGINEERING

a) An Advanced Diploma in Engineering Technology in the appropriate field, NQF level 7;
b) A B-Tech Degree in Engineering Technology in the appropriate field NQF level 7;
c) Any other substantially equivalent South African or Foreign qualification in the appropriate field at NQF level 7.

HONOURS DEGREES

An appropriate NQF 7 qualification from an accredited provider of higher education. A minimum of 60% for the major(s), or for a selected number of NQF 7 modules in the qualification.

MASTER'S DEGREES

An Honours degree, postgraduate diploma, or 4-year bachelor of science degree in the related field, with an average of at least 60%. Applicants must first contact the relevant academic department to confirm the availability of a supervisor, before applying for admission. Students who have not completed a module in research methodology may be required to complete such a module before the proposal for a Master's degree will be considered.

DOCTORAL DEGREES

An appropriate Master's degree. Applicants must first contact the relevant academic department to confirm the availability of a supervisor, before applying for admission.

Disclaimer: *Meeting the minimum requirements for the postgraduate qualifications will not guarantee a place at Unisa, as the University can only enrol a limited number of students per qualification.*

HOW TO APPLY

CHOOSING YOUR QUALIFICATION

Once you have decided on the qualification you want, you are ready to apply. You are encouraged to select two (2) possible qualifications and rank them in order of preference – remember that Unisa has limited space per qualification, so you may not be admitted to your first choice. Make sure that you meet the admission requirements of all the qualifications you list

MAKE SURE YOUR APPLICATION IS COMPLETE

If your application for admission to study through Unisa is incomplete, it cannot be considered.

UPLOAD SUPPORTING DOCUMENTS

PAY THE APPLICATION FEE ONCE YOU'VE RECEIVED A STUDENT NUMBER FROM UNISA

ACCREDITATION

Everyone applying for a new qualification (first-time applicants or existing students starting a new qualification) must submit the required documents. Unisa does not provide scanners or electronic devices at the regional offices, so please ensure that your documents are scanned and uploaded to an electronic device before starting the application process. Documents must have been certified within the last 3 months before uploading – uncertified copies that are uploaded will be rejected.

Pay the application fee once you have received a student number, and use this number as payment reference.

Visit www.unisa.ac.za/paymentinfo for banking and payment information. It is often more convenient and quicker to pay by credit card on the secure Unisa website.

CSET offers programmes that are aligned with the Higher Education Qualifications Sub-Framework (HEQSF), endorsed by the Department of Higher Education and Training (DHET), accredited by the Council on Higher Education (CHE) and registered with the South African Qualifications Authority (SAQA).

All engineering qualifications are endorsed by the Engineering Council of South Africa (ECSA)

STUDENT SUPPORT AT THE COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY

CSET prides itself on its learner support, which includes the following:

OUR STAFF, OUR PRIDE

Studying at an ODeL institution doesn't mean you're completely on your own. Our College is well staffed with top-notch National Research Foundation (NRF)-rated researchers and committed lecturers. Their research interests range from astronomy and mathematics, to physics, chemistry and various engineering disciplines. CSET is also known to be a national leader in the field of nanotechnology.

MYUNISA

Unisa's online student portal, known as myUnisa, is the university's most important study tool. It is how you will communicate with Unisa and how Unisa will communicate with you.

MYLIFE EMAIL ACCOUNT

Registered Unisa students will get a free email account, known as a myLife email account. Important information, notices and updates are sent to this account.

E-TUTORS

Unisa has introduced online e-tutoring in all undergraduate learning programmes, thus providing support to students, irrespective of their geographic location. A group of about 200 students is linked to each tutor. In this group, students are also able to interact and learn from each other.

Should you experience challenges with the e-tutoring system, you can contact:

Nomsa Ndlovu
(School of Engineering)
Tel: 011 471 3135
ndlovup@unisa.ac.za

Mr Mpho Boysa
(School of Science)
Tel: 011 670 9089
boysamg@unisa.ac.za

Mr Mpho Tshabalala
(School of Computing)
Tel: 011 670 9144
tshabmk1@unisa.ac.za

Ms Mitchelleen Mohlala
(School of Computing)
Tel: 011 670 9137
nkwanmd@unisa.ac.za

REGIONAL CENTRES

Unisa's distance-education character is also reflected in its regional structure, which includes seven regions, namely Gauteng, Kwazulu-Natal, Limpopo, Midlands, Mpumalanga, Eastern Cape and Western Cape. Together, these regions have 28 hubs, service centres and agencies that serve many thousands of students. At most of the regional offices we have learning centres, where distance learners can go in order to get various forms of support for their studies.

LIBRARY

The library is one of the University's indispensable resources. Knowing how to use it is central to the successful Unisa student experience. The Unisa Library is the largest academic library in Africa, containing more than 2.7 million items, including books, reference resources, e-books, e-newspapers and e-journals.

THE "TEACH-OUT" PROCESS (FOR ENGINEERING STUDENTS ONLY)

1. 2019 was the last year that new students could enrol for National Diplomas and BTech qualifications.

2. These registered undergraduate Engineering students are required to finish their studies according to a "teach-out" plan, in line with Unisa's rules. This plan stipulates the following:

A. National Diplomas

- Students have to complete all National Diploma qualifications within five years. This means that they must complete the qualifications no later than 2023, when the offering ends.

- The students who do not manage to obtain the National Diploma in this time frame will be transferred to an equivalent National Qualification Framework (NQF)-level qualification after 2023. Unisa's credit exemption rules will apply to such transfers.

- In 2020, no new students will be allowed to register for the "old" qualifications.

- If students do not finish in stipulated time, only S1 will be credited towards the new Diploma in Engineering

B. BTech qualifications

- Students have to complete all BTech qualifications within three years. This means that they must complete the qualifications no later than 2021, when the offering ends.

- The students who do not manage to obtain their BTech degree in this time frame will be transferred to an equivalent National Qualification Framework (NQF)-level qualification after 2021. Unisa's credit exemption rules will apply to such transfers.

- In 2020, no new students will be allowed to register for the "old" qualifications.

- No credit will be carried over to the Advanced Diploma if students do not finish the BTech qualification in the stipulated time.

3. The introduction of the new HEQSF aligned qualifications will enable engineering students to further their studies up to doctoral and post-doctoral levels, nationally or internationally.

SHORT LEARNING PROGRAMMES OFFERED UNDER THE COLLEGE OF SCIENCE, ENGINEERING & TECHNOLOGY

THE PURPOSE OF SHORT LEARNING PROGRAMMES (*SLPS*)

Many employees find themselves in the computer industry without formal qualifications. They typically received in-service training in the "technology of the day", which becomes obsolete within a short period of time. Enterprises are aware of this, and prefer that employees are educated in the fundamentals of the discipline.

The aim of the School of Computing's short learning programmes is to provide an environment where students can study the underlying principles of a particular field of interest and be rewarded with a Unisa certificate upon successful completion of the course. Some courses focus strongly on practical issues and involve various sessions of training, while other courses focus on the theoretical principles forming the basis of a particular field.

SLPS OFFERED

Applied Information Security (76809)
Applied Project Management in an Information Technology Environment (70467)
C++ Programming (70181)
Computer Networks (70025)
Database Design (70041)
Database Implementation (7554X)
Designing and Implementing Telecommunication Networks (70157)
Developing Web Applications with PHP (72095)
I-SET Robotics - Components and Pedagogy (76820)
I-SET Robotics - Problem Solving, Data and Debugging (76984)
Introduction to Information Security (70610)
Introduction to Internet and Web Design (70076)
Introduction to Java Programming (70602)
Introduction to Visual Basic.Net Programming (70122)
Introduction to Visual C Sharp.Net programming (76804)
Strategic Information Systems Planning in practice (75566)

NB: *It is important to note that Short Learning Programmes are by nature curtailed/concise. They are not formal qualifications.*

FOR MORE INFORMATION ABOUT SHORT LEARNING PROGRAMMES, YOU CAN CONTACT US AT:

(011) 670 9139 / 9189 | cense@unisa.ac.za/cense1@unisa.ac.za | http://cs-cert.unisa.ac.za

YOU CAN CONTACT THE COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY (CSET) AT:

cset@unisa.ac.za
www.unisa.ac.za/cset
(011) 670 9228/9063

PHYSICAL ADDRESS
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Florida