DIPLOMAS

Diploma in Information Technology

Stream: Information Technology

Qualification code: 98806 - ITE | **NQF Exit level:** 6 | **Total credits:** 360 | **APS:** 21 | **SAQA ID:** 62396

This qualification will be presented using both online and distance learning modes.

Admission requirements: 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 have an APS of 18 to 20 will be considered for the extended (4) year Diploma curriculum where applicable. Applicants who have an APS of 21 and higher will be considered for the (3) three year diploma curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Rules: As from 2019 the semester modules ICT3713 and ICT3714 are not available and replaced with the yearmodule ICT3715. Students who have not registered or passed both ICT3713 and ICT3714 before 2018will have to register for the new module ICT3715 from the 2019 academic year onwards. Where astudent has already passed and obtained credits for ICT3713, the student will be given a final chance to register and pass ICT3714 in the first or second semester of 2018. In the secondsemester of 2018, students who fail ICT3713 or has a supplementary will have to register thesingle capstone year module ICT3715 from the 2019 academic year onwards.

Purpose statement: A Qualifying learner at this level is competent in the development of IT systems in a distributed computing environment, after specializing in one of the following fields: 1. Business Applications. The creation and customization of total integrated IT solutions to business problems and management of those systems. This also includes the analysis of business systems to provide decision support on appropriate technology for acquiring and processing knowledge essential for innovation, and for betterment of organisational responsiveness, effectiveness and / or efficiency. 2. Software Development Designing and producing software products and systems to meet specified needs so that they work reliably and their production and maintenance is cost effective. 3. Communication Networks Design, development, implementation and management of networks by integrating knowledge of modern network topologies and protocols to create an appropriate and adequate environment of communication and information sharing. 4. Web and Application Development To equip Web professionals with the necessary skills to pursue a career in IT using the Internet to create, build and maintain Web sites. This professional will also manage Web related functions of the organisation. 5. Information Systems and Technology Management Manage people and technology for creating, modifying and sustaining organisational information systems. 6. Intelligent Industrial Systems Design, development and maintenance of systems that have embedded logic. This includes artificial intelligence and servers that can do remotely control a process environment. 7. Support Services Identifies the various types of end users and explore their possible needs. These needs include support in the use of existing software packages, basic maintenance of computers and equipment, and support for the development of end users' own computer applications.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
BSM1501	-	Business Management IA	
ENN1504	-	Practising Workplace English	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
ICT1511	-	Introduction to Programming	
ICT1512	-	Introduction to Interactive Programming	Co-requisite: ICT1513
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
ICT1521	-	Introduction to Databases	Co-requisite: EUP1501 (or XUP1501)
ICT1531	-	Workstation Technical Skills	
ICT1532	-	Network Technical Skills	Co-requisite: ICT1531 (or XCT1531)
ICT1541	-	Business Informatics I	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
FAC1501	-	Introductory Financial Accounting	
ICT2611	-	Graphical user Interface Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511) & ICT1513 (or XCT1513)
ICT2612	-	Interactive Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511) & ICT1513 (or XCT1513)
ICT2613	-	Internet Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511), ICT1512 (or XCT1512) & ICT1513 (or XCT1513)
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2631	-	Operating Systems Practice	Pre-requisite: ICT1531 (or XCT1531) & ICT1532 (or XCT1532)
ICT2632	-	Digital Logic	Pre-requisite: ICT1531 (or XCT1531) & ICT1532 (or XCT1532)
ICT2641	-	Business Informatics IIA	Pre-requisite: ICT1541 (or XCT1541) Co-requisite: FAC1501

ICT2642	-	Business Informatics IIB	Pre-requisite: ICT1541 (or XCT1541) Co-requisite: FAC1501 & ICT2641

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
ICT3611	-	Advanced Graphical user Interface Programming	Pre-requisite: ICT2611
ICT3612	-	Advanced Internet Programming	Pre-requisite: ICT2612 & ICT2613
ICT3621	-	Database Design	Pre-requisite: ICT2621 & ICT2622 Co-requisite: ICT3722
ICT3631	-	Advanced Operating System Practice	Pre-requisite: ICT2631 (not applicable to BTELN COS)
ICT3641	-	Business Informatics IIIA	Pre-requisite: ICT2641 & ICT2642
ICT3642	-	Business Informatics IIIB	Pre-requisite: ICT2641 & ICT2642 Co-requisite: ICT3641
ICT3715	-	Information and Communication Technology project	Pre-requisite: ICT2621, ICT2641, ICT2642, ICT2611, ICT2612, ICT2613 Co-requisite: INF3708, ICT3621, ICT3641
ICT3722	-	Database Practice	Pre-requisite: ICT2621 & ICT2622 Co-requisite: ICT3621
INF3708	-	Software Project Management	

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Diploma in Information Technology

Stream: Information Technology (Extended Programme)

Qualification code: 98806 - XIT **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62396

This qualification will be presented using both online and distance learning modes.

Admission requirements:

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 have an APS of 18 to 20 will be considered for the extended (4) year Diploma curriculum where applicable. Applicants who have an APS of 21 and higher will be considered for the (3) three year diploma curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Rules:

In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. As from 2018; ICT3713 and ICT3714 will be replaced by a single capstone year module ICT3715. Students who have not registered or passed both ICT3713 and ICT3714 before 2018 will have to register for the new module ICT3715 from the 2018 academic year onwards. Where a student has already passed and obtained credits for ICT3713, the student will be given a final chance to register and pass ICT3714 in the first or second semester of 2018. In the second semester of 2017, students who fail ICT3713 or has a supplementary will have to register the single capstone year module ICT3715 from the 2018 academic year onwards. In the second semester of the 2017 academic year, where a student has failed, or have a supplementary for the module ICT3714, then that student can still register for the module ICT3714 in the year 2018 only.

Purpose statement:

A Qualifying learner at this level is competent in the development of IT systems in a distributed computing environment, after specializing in one of the following fields: 1. Business Applications. The creation and customization of total integrated IT solutions to business problems and management of those systems. This also includes the analysis of business systems to provide decision support on appropriate technology for acquiring and processing knowledge essential for innovation, and for betterment of organisational responsiveness, effectiveness and / or efficiency. 2. Software Development Designing and producing software products and systems to meet specified needs so that they work reliably and their production and maintenance is cost effective. 3. Communication Networks Design, development, implementation and management of networks by integrating knowledge of modern network topologies and protocols to create an appropriate and adequate environment of communication and information sharing. 4. Web and Application Development To equip Web professionals with the necessary skills to pursue a career in IT using the Internet to create, build and maintain Web sites. This professional will also manage Web related functions of the organisation. 5. Information Systems and Technology Management Manage people and technology for creating, modifying and sustaining organisational information systems. 6. Intelligent Industrial Systems Design, development and maintenance of systems that have embedded logic. This includes artificial intelligence and servers that can do remotely control a process environment. 7. Support Services Identifies the various types of end users and explore their possible needs. These needs include support in the use of existing software packages, basic maintenance of computers and equipment, and support for the development of end users' own computer applications.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
ENN1504	-	Practising Workplace English	
XCT1511	-	Introduction to Programming (Extended)	
XCT1512	-	Introduction to Interactive Programming (Extended)	Co-requisite: XUP1501 (or EUP1501), XCT1513
XCT1513	-	Introduction to Web Design (Extended)	Co-requisite: XUP1501 (or EUP1501), XCT1512
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
BSM1501	-	Business Management IA	
XCT1521	-	Introduction to Databases (Extended)	
XCT1531	-	Workstation Technical Skills (Extended)	Pre-requisite: XCT1511 or XCT1512 or XCT1513 or XCT1521
XCT1532	-	Network Technical Skills (Extended)	Co-requisite: XCT1531 (or ICT1531)
XCT1541	-	Business Informatics I (Extended)	Pre-requisite: XCT1511 or XCT1512 or XCT1513 or XCT1521

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
FAC1501	-	Introductory Financial Accounting	
ICT2611	-	Graphical user Interface Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511) & ICT1513 (or XCT1513)
ICT2612	-	Interactive Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511) & ICT1513 (or XCT1513)
ICT2613	-	Internet Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511), ICT1512 (or XCT1512) & ICT1513 (or XCT1513)
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or

			XOS1521)
ICT2631	-	Operating Systems Practice	Pre-requisite: ICT1531 (or XCT1531) & ICT1532 (or XCT1532)
ICT2632	-	Digital Logic	Pre-requisite: ICT1531 (or XCT1531) & ICT1532 (or XCT1532)
ICT2641	-	Business Informatics IIA	Pre-requisite: ICT1541 (or XCT1541) Co-requisite: FAC1501
ICT2642	-	Business Informatics IIB	Pre-requisite: ICT1541 (or XCT1541) Co-requisite: FAC1501 & ICT2641

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
ICT3611	-	Advanced Graphical user Interface Programming	Pre-requisite: ICT2611
ICT3612	-	Advanced Internet Programming	Pre-requisite: ICT2612 & ICT2613
ICT3621	-	Database Design	Pre-requisite: ICT2621 & ICT2622 Co-requisite: ICT3722
ICT3631	-	Advanced Operating System Practice	Pre-requisite: ICT2631 (not applicable to BTELN COS)
ICT3641	-	Business Informatics IIIA	Pre-requisite: ICT2641 & ICT2642
ICT3642	-	Business Informatics IIIB	Pre-requisite: ICT2641 & ICT2642 Co-requisite: ICT3641
ICT3715	-	Information and Communication Technology project	Pre-requisite: ICT2621, ICT2641, ICT2642, ICT2611, ICT2612, ICT2613 Co-requisite: INF3708, ICT3621, ICT3641
ICT3722	-	Database Practice	Pre-requisite: ICT2621 & ICT2622 Co-requisite: ICT3621
INF3708	-	Software Project Management	

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National Diploma: Engineering: Civil

Qualification code: NDECI | **NQF Exit level:** 6 | **Total credits:** 360 | **APS:** 18 | **SAQA ID:** 62385

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Work-integrated learning is a compulsory component towards the completion of this qualification. Students must complete PEC2601 or PEC2602 and PEC301C or PEC3602.Students may do PEC2601and PEC301C sequentially (i.e. PEC301C after PEC2601) or simultaneously by registering for both modules in the same year. A student may only select for PEC2601and PEC301C if s/he has a placement. PEC2602 and PEC3602 are modules which are offered at specific locations which may require the student to relocate for the duration of the project. Students enrolling for the first time in 2018 are required to do MAT1510. Students who registered prior to 2018 are not required to do this module. Students are required to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510.
Purpose statement:	To train a Civil Engineering Technician with sufficient academic knowledge and practical experience to plan, design, construct and manage projects in the Civil Engineering field. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
AMC1PRA	-	Applied Mechanics I (Practical)	Co-requisite: PHY1501
DRW1501	-	Drawing I	
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1510	-	Precalculus Mathematics A	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510
PHY1501	-	Elementary Mechanics	Co-requisite: AMC1PRA (only applicable to NDECI), MCA1PRA (only applicable to NDEEN-MEC, NDEID, NDEMC)
SCV1501	-	Surveying	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CMD1501	-	Construction Methods I	
CMT1501	-	Construction Materials I (Theory)	Co-requisite: CMTPRA1
CMTPRA1	-	Construction Materials I (Practical)	Co-requisite: CMT1501
DRW2601	-	Drawing II	Pre-requisite: DRW1501
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
MCL1501	-	Management: Civil I	
SRC2601	-	Surveying: Civil II (Theory)	Pre-requisite: SRV1501 or SCV1501 Co-requisite: SRCPRA2
SRCPRA2	-	Surveying: Civil II (Practical	Pre-requisite: SRV1501 & SRVPRA1 Co-requisite: SRC2601
TST2601	-	Theory of Structures II (Theory)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: TSTPRA2 & MAT2691
TSTPRA2	-	Theory of Structures II (Practical)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: TST2601

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
GTE2601	-	Geotechnical Engineering II (Theory)	Pre-requisite: CMT1501 Co-requisite: GTE2PRA
GTE2PRA	-	Geotechnical Engineering II (Practical)	Co-requisite: GTE2601
MCL2601	-	Management: Civil II	Pre-requisite: MCL1501
RCD3601	-	Reinforced Concrete and Masonry Design III (Theory)	Pre-requisite: TST2601 & TSTPRA2 Co-requisite: RCD3602 & SAN2601
RCD3602	-	Reinforced Concrete and Masonry Design III (Project)	Pre-requisite: TST2601 & TSTPRA2 Co-requisite: RCD3601 & SAN2601
SAN2601	-	Structural Analysis II	Co-requisite: TST2601, TSTPRA2 & MAT2691
TPE2601	-	Transportation Engineering II (Theory)	Co-requisite: SRC2601 & SRCPRA2 or TPE2602
TPE2602	-	Transportation Engineering II (Project)	Co-requisite: SRC2601 & SRCPRA2 & TPE2601
WEN2601	-	Water Engineering II (Theory)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: WEN2PRA
WEN2PRA	-	Water Engineering II (Practical)	Pre-requisite: PHY1501 & AMC1PRA

			Co-requisite: WEN2601
Group B. Choose 1 from the following			
PEC2601	-	Engineering Practice: Civil II (Workplace-Based Learning)	Pre-requisite: AMC1PRA & DRW1501& ENN103F & EUP1501 & MAT1581 & PHY1501& (SRV1501 or SCV1501) & CMD1501& CMT1501 & MCL1501& CMTPRA1
PEC2602	-	Engineering Practice: Civil II (Project - Based)	Pre-requisite: GTE2601, GTE2PRA, MCL2601, RCD3601, RCD3602, SAN2601,TPE2601, TPE2602,WEN2601 & WEN2PRA Recommendation: It is recommended that students do the following modules before attempting this module: DCM3601, DCM3602, GTE3601, GTEPRA3, SAN3601,SSD3601, TPE3601, TPE3PRA, WEN3601, WEN3PJT, WEN3PRA

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
DCM3601	-	Documentation III (Theory)	Pre-requisite: MCL2601 Co-requisite: DCM3602
DCM3602	-	Documentation III (Project)	Co-requisite: DCM3601
GTE3601	-	Geotechnical Engineering III (Theory)	Pre-requisite: GTE2601 & GTE2PRA Co-requisite: GTEPRA3
GTEPRA3	-	Geotechnical Engineering III (Practical)	Pre-requisite: GTE2601 & GTE2PRA Co-requisite: GTE3601
SAN3601	-	Structural Analysis III	Pre-requisite: SAN2601
SSD3601	-	Structural Steel and Timber Design III (Theory)	Pre-requisite: SAN2601 Co-requisite: SSD3602
SSD3602	-	Structural Steel and Timber Design III (Project)	Pre-requisite: SAN2601 Co-requisite: SSD3601
TPE3601	-	Transportation Engineering III (Theory)	Pre-requisite: TPE2601 & TPE2602 & CMT1501 Co-requisite: TPE3PRA
TPE3PRA	-	Transportation Engineering III (Practical)	Pre-requisite: TPE2601 & TPE2602 Co-requisite: TPE3601
WEN3601	-	Water Engineering III (Theory)	Pre-requisite: WEN2601 & WEN2PRA Co-requisite: WEN3PRA & WEN3PJT
WEN3PJT	-	Water Engineering III (Project)	Pre-requisite: WEN2601 & WEN2PRA Co-requisite: WEN3601
WEN3PRA	-	Water Engineering III (Practical)	Pre-requisite: WEN2601 & WEN2PRA Co-requisite: WEN3601 & WEN3PJT
Group B. Choose 1 from the following			
PEC301C	-	Engineering Practice: Civil III (Workplace-Based Learning)	Pre-requisite: DRW2601 & RCD3601 & RCD3602 & MCL2601 Co-requisite: PEC2601 or PEC2602
PEC3602	-	Engineering Practice: Civil III (Project Based)	Pre-requisite: DCM3601 & DCM3602 & DRW2601 & GTE3601 & GTEPRA3 & RCD3601 &RCD3602 & SAN3601 & SSD3601 & SSD3602 & TPE3601& TPE3PRA & WEN3601 & WEN3PJT & WEN3PRA Co-requisite: PEC2601 or PEC2602

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National Diploma: Engineering: Electrical

Stream: Clinical Engineering

Qualification code: NDEEN - CEN **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62386

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements: A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Rules: For experiential learning purposes, students currently unemployed should contact the department.

Purpose statement: Students will be competent to apply technical knowledge, engineering principles and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1511	-	Introduction to Programming I	
DIG1501	-	Digital Systems I (Theory)	Co-requisite: DIGPRA1
DIGPRA1	-	Digital Systems I (Practical)	Co-requisite: DIG1501
ECT1501	-	Electronics I (Theory)	Co-requisite: ECTPRA1
ECTPRA1	-	Electronics I (Practical)	Co-requisite: ECT1501
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
DIG2601	-	Digital Systems II (Theory)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIGPRA2
DIGPRA2	-	Digital Systems II (Practical)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIG2601
ECT2601	-	Electronics II (Theory)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECTPRA2
ECTPRA2	-	Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECT2601
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
EPR101E	-	Electrical Engineering Practice I	
ICT1512	-	Introduction to Interactive Programming	Co-requisite: ICT1513
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
BSY1015	-	Bio-Systems I	
DIG3601	-	Digital Systems III (Theory)	Pre-requisite: DIG2601 & DIGPRA2 Co-requisite: DIGPRA3
DIGPRA3	-	Digital Systems III (Practical)	Pre-requisite: DIG2601& DIGPRA2 Co-requisite: DIG3601
ECT3601	-	Electronics III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: ECTPRA3
ECTPRA3	-	Electronics III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: ECT3601
EPR201E	-	Electrical Engineering Practice II	
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691
MEQ3601	-	Medical Equipment III (Module A) (Theory)	Co-requisite: MEQPRA1
MEQ3602	-	Medical Equipment III (Module B) (Theory)	Co-requisite: MEQPRA2
MEQPRA1	-	Medical Equipment III (Module A) (Practical)	Co-requisite: MEQ3601
MEQPRA2	-	Medical Equipment III (Module B) (Practical)	Co-requisite: MEQ3602

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
DPJ391U	-	Design Project III	Pre-requisite: 10 study units on level 1 or level 2 and 2 study units on level 3.
Group B. Choose 1 of the following groups of modules			
BSM1501	-	Business Management IA	
BSM1602	-	Business Management IB	
Group C.			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	

CSETMyereg 2019 final draft

National Diploma: Engineering: Electrical

Stream: Computer Systems

Qualification code: NDEEN - COS **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62386

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Compilation of curriculum: The following compulsory modules need to be completed: English for Academic Purposes. Ethical Information and Communication Technologies for Development Solutions. Mathematics 1, 2 & 3. Electrical Engineering 1 & 2. Electronics 1 & 2. Digital Systems 1. Design Project 3. Electrical Engineering Practice 1 & 2. 60 of the 360 credits must be level 3 subjects. For experiential learning purposes, students currently unemployed should contact the department.
Purpose statement:	Students will be competent to apply technical knowledge, engineering principles and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A.			
COS1511	-	Introduction to Programming I	
DIG1501	-	Digital Systems I (Theory)	Co-requisite: DIGPRA1
DIGPRA1	-	Digital Systems I (Practical)	Co-requisite: DIG1501
ECT1501	-	Electronics I (Theory)	Co-requisite: ECTPRA1
ECTPRA1	-	Electronics I (Practical)	Co-requisite: ECT1501
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
ICT1531	-	Workstation Technical Skills	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

Module			Pre/Co-requisite
Group A.			
DIG2601	-	Digital Systems II (Theory)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIGPRA2
DIGPRA2	-	Digital Systems II (Practical)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIG2601
ECT2601	-	Electronics II (Theory)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECTPRA2
ECTPRA2	-	Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECT2601
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
EPR101E	-	Electrical Engineering Practice I	
ICT1512	-	Introduction to Interactive Programming	Co-requisite: ICT1513
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
ICT1532	-	Network Technical Skills	Co-requisite: ICT1531 (or XCT1531)
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581

Third level

Module			Pre/Co-requisite
Group A.			
DIG3601	-	Digital Systems III (Theory)	Pre-requisite: DIG2601 & DIGPRA2 Co-requisite: DIGPRA3
DIGPRA3	-	Digital Systems III (Practical)	Pre-requisite: DIG2601& DIGPRA2 Co-requisite: DIG3601
ECM2601	-	Electronic Communication II (Theory)	Co-requisite: ECMPRA2 & ECT2601 & ECTPRA2
ECMPRA2	-	Electronic Communication II (Practical)	Co-requisite: ECM2601 & ECT2601 & ECTPRA2
ECT3601	-	Electronics III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: ECTPRA3
ECTPRA3	-	Electronics III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: ECT3601
EPR201E	-	Electrical Engineering Practice II	

ICT1541	-	Business Informatics I	
ICT2612	-	Interactive Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511) & ICT1513 (or XCT1513)
ICT2613	-	Internet Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511), ICT1512 (or XCT1512) & ICT1513 (or XCT1513)
ICT2631	-	Operating Systems Practice	Pre-requisite: ICT1531 (or XCT1531) & ICT1532 (or XCT1532)
ICT3611	-	Advanced Graphical user Interface Programming	Pre-requisite: ICT2611
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
DPJ391U	-	Design Project III	Pre-requisite: 10 study units on level 1 or level 2 and 2 study units on level 3.
ICT3612	-	Advanced Internet Programming	Pre-requisite: ICT2612 & ICT2613
ICT3631	-	Advanced Operating System Practice	Pre-requisite: ICT2631 (not applicable to BTELN COS)
Group B. Choose 1 of the following groups of modules			
BSM1501	-	Business Management IA	
BSM1602	-	Business Management IB	
Group C.			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	

CSETMyereg 2019 final

National Diploma: Engineering: Electrical

Stream: Electronics and Electronic Communication

Qualification code: NDEEN - EEC **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62386

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Compilation of curriculum: The following compulsory modules need to be completed: English for Academic Purposes. Ethical Information and Communication Technologies for Development Solutions. Mathematics 1, 2 & 3. Electrical Engineering 1 & 2. Electronics 1 & 2. Digital Systems 1. Design Project 3. Electrical Engineering Practice 1 & 2. 60 of the 360 credits must be level 3 subjects. Students who select Electronic Measurements 3 and Metrology 3 must pass both modules in order for credit to be granted. For experiential learning purposes, students currently unemployed should contact the department.
Purpose statement:	Students will be competent to apply technical knowledge, engineering principles and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A.			
COS1511	-	Introduction to Programming I	
DIG1501	-	Digital Systems I (Theory)	Co-requisite: DIGPRA1
DIGPRA1	-	Digital Systems I (Practical)	Co-requisite: DIG1501
ECT1501	-	Electronics I (Theory)	Co-requisite: ECTPRA1
ECTPRA1	-	Electronics I (Practical)	Co-requisite: ECT1501
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

Module			Pre/Co-requisite
Group A.			
DIG2601	-	Digital Systems II (Theory)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIGPRA2
DIGPRA2	-	Digital Systems II (Practical)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIG2601
ECT2601	-	Electronics II (Theory)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECTPRA2
ECTPRA2	-	Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECT2601
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
EPR101E	-	Electrical Engineering Practice I	
ICT1512	-	Introduction to Interactive Programming	Co-requisite: ICT1513
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581

Third level

Module			Pre/Co-requisite
Group A.			
DIG3601	-	Digital Systems III (Theory)	Pre-requisite: DIG2601 & DIGPRA2 Co-requisite: DIGPRA3
DIGPRA3	-	Digital Systems III (Practical)	Pre-requisite: DIG2601& DIGPRA2 Co-requisite: DIG3601
ECM2601	-	Electronic Communication II (Theory)	Co-requisite: ECMPRA2 & ECT2601 & ECTPRA2
ECMPRA2	-	Electronic Communication II (Practical)	Co-requisite: ECM2601 & ECT2601 & ECTPRA2
ECT3601	-	Electronics III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: ECTPRA3
ECTPRA3	-	Electronics III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: ECT3601
EKM3601	-	Electronic Measurements III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & MTRPRA3 & EKMPRA3

EKMPRA3	-	Electronic Measurements III (Practical	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & MTRPRA3 & EKM3601
EPR201E	-	Electrical Engineering Practice II	
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691
MTR3601	-	Metrology III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTRPRA3 & EKM3601 & EKMPRA3
MTRPRA3	-	Metrology III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & EKM3601 & EKMPRA3

Fourth level

Module			Pre/Co-requisite
Group A.			
CSY3601	-	Control Systems III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSYPRA3
CSYPRA3	-	Control Systems III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSY3601
DPJ391U	-	Design Project III	Pre-requisite: 10 study units on level 1 or level 2 and 2 study units on level 3.
ICT2612	-	Interactive Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511) & ICT1513 (or XCT1513)
ICT2613	-	Internet Programming	Pre-requisite: COS1511 (or XOS1511) or ICT1511 (or XCT1511), ICT1512 (or XCT1512) & ICT1513 (or XCT1513)
MCE3601	-	Microwave Communication III (Theory)	Pre-requisite: ECM2601 & ECMPRA2 Co-requisite: MCEPRA3
MCEPRA3	-	Microwave Communication III (Practical)	Pre-requisite: ECM2601 & ECMPRA2 Co-requisite: MCE3601
RAE3601	-	Radio Engineering III (Theory)	Pre-requisite: ECM2601 & ECMPRA2 Co-requisite: RAEPRA3
RAEPRA3	-	Radio Engineering III (Practical)	Pre-requisite: ECM2601 & ECMPRA2 Co-requisite: RAE3601
Group B. Choose 1 of the following groups of modules.			
BSM1501	-	Business Management IA	
BSM1602	-	Business Management IB	
Group C.			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	

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National Diploma: Engineering: Electrical

Stream: Mechatronics

Qualification code: NDEEN - MEC **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62386

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements: A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Rules: For experiential learning purposes, students currently unemployed should contact the department.

Purpose statement: Students will be competent to apply technical knowledge, engineering principles and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
DIG1501	-	Digital Systems I (Theory)	Co-requisite: DIGPRA1
DIGPRA1	-	Digital Systems I (Practical)	Co-requisite: DIG1501
ECT1501	-	Electronics I (Theory)	Co-requisite: ECTPRA1
ECTPRA1	-	Electronics I (Practical)	Co-requisite: ECT1501
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510
MCA1PRA	-	Mechanics I (Practical)	Co-requisite: PHY1501
MED161Q	-	Mechanical Engineering Drawing I	
PHY1501	-	Elementary Mechanics	Co-requisite: AMC1PRA (only applicable to NDECI), MCA1PRA (only applicable to NDEEN-MEC, NDEID, NDEMC)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1511	-	Introduction to Programming I	
DIG2601	-	Digital Systems II (Theory)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIGPRA2
DIGPRA2	-	Digital Systems II (Practical)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIG2601
ECT2601	-	Electronics II (Theory)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECTPRA2
ECTPRA2	-	Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECT2601
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
EPR101E	-	Electrical Engineering Practice I	
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
MOM2601	-	Mechanics of Machines II (Theory)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: MOMPRA2
MOMPRA2	-	Mechanics of Machines II (Practical)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: MOM2601
SOM2601	-	Strength of Materials II (Theory)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: SOMPRA2
SOMPRA2	-	Strength of Materials II (Practical)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: SOM2601

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CSY3601	-	Control Systems III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSYPRA3
CSYPRA3	-	Control Systems III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSY3601

EPR201E	-	Electrical Engineering Practice II	
FMC2601	-	Fluid Mechanics II (Theory)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: FMCPRA2 or FMC2PRA
FMCPRA2	-	Fluid Mechanics II (Practical)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: FMC2601 or FMC201U
INE2601	-	Industrial Electronics II (Theory)	Pre-requisite: ECT1501 or ECT151R & ECTPRA1 or ECT1PRA Co-requisite: INEPRA2 or INE2PRA
INEPRA2	-	Industrial Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: INE2601
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691
MOM3601	-	Mechanics of Machines III (Theory)	Pre-requisite: MOM2601 & MOMPRA2 Co-requisite: MOMPRA3
MOMPRA3	-	Mechanics of Machines III (Practical)	Pre-requisite: MOM2601 & MOMPRA2 Co-requisite: MOM3601

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
DIG3601	-	Digital Systems III (Theory)	Pre-requisite: DIG2601 & DIGPRA2 Co-requisite: DIGPRA3
DIGPRA3	-	Digital Systems III (Practical)	Pre-requisite: DIG2601& DIGPRA2 Co-requisite: DIG3601
DPJ391U	-	Design Project III	Pre-requisite: 10 study units on level 1 or level 2 and 2 study units on level 3.
EMM2602	-	Electrical Machines II (Theory)	Co-requisite: EMMPRA2
EMMPRA2	-	Electrical Machines II (Practical)	Co-requisite: EMM2602
PCE3601	-	Power Electronics III (Theory)	Pre-requisite: INE2601 & INEPRA2 or (ECT2601 & ECTPRA2) Co-requisite: PCEPRA3
PCEPRA3	-	Power Electronics III (Practical)	Pre-requisite: (INE2601 & INEPRA2) or (ECT2601 & ECTPRA2) Co-requisite: PCE3601

CSETMyereg 2019

National Diploma: Engineering: Electrical

Stream: Power Engineering

Qualification code: NDEEN - PEN **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62386

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Compilation of curriculum: The following compulsory modules need to be completed: English for Academic Purposes. Ethical Information and Communication Technologies for Development Solutions. Mathematics 1, 2 & 3. Electrical Engineering 1 & 2. Electronics 1 & 2. Digital Systems 1. Design Project 3. Electrical Engineering Practice 1 & 2. 60 of the 360 credits must be level 3 subjects. Students who select Electronic Measurements 3 and Metrology 3 must pass both modules in order for credit to be granted. For experiential learning purposes, students currently unemployed should contact the department.
Purpose statement:	Students will be competent to apply technical knowledge, engineering principles and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A.			
COS1511	-	Introduction to Programming I	
DIG1501	-	Digital Systems I (Theory)	Co-requisite: DIGPRA1
DIGPRA1	-	Digital Systems I (Practical)	Co-requisite: DIG1501
ECT1501	-	Electronics I (Theory)	Co-requisite: ECTPRA1
ECTPRA1	-	Electronics I (Practical)	Co-requisite: ECT1501
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

Module			Pre/Co-requisite
Group A.			
DIG2601	-	Digital Systems II (Theory)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIGPRA2
DIGPRA2	-	Digital Systems II (Practical)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIG2601
ECT2601	-	Electronics II (Theory)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECTPRA2
ECTPRA2	-	Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECT2601
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
EPR101E	-	Electrical Engineering Practice I	
ICT1512	-	Introduction to Interactive Programming	Co-requisite: ICT1513
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581

Third level

Module			Pre/Co-requisite
Group A.			
CSY3601	-	Control Systems III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSYPRA3
CSYPRA3	-	Control Systems III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSY3601
DIG3601	-	Digital Systems III (Theory)	Pre-requisite: DIG2601 & DIGPRA2 Co-requisite: DIGPRA3
DIGPRA3	-	Digital Systems III (Practical)	Pre-requisite: DIG2601& DIGPRA2 Co-requisite: DIG3601
ELD3601	-	Electrical Distribution III (Theory)	Pre-requisite: ELE2601 or ELE261Z & ELEPRA2 or ELE2PRA Co-requisite: ELDPRA3 or ELD3PRA

ELDPRA3	-	Electrical Distribution III (Practical)	Pre-requisite: ELE2601or ELE261Z & ELEPRA2 or ELE2PRA Co-requisite: ELD3601or ELD371R
ELE3601	-	Electrical Engineering III (Theory)	Pre-requisite: ELE2601 & ELEPRA2 & ELE2PRA Co-requisite: ELEPRA3
ELEPRA3	-	Electrical Engineering III (Practical)	
EMM2602	-	Electrical Machines II (Theory)	Co-requisite: EMMPRA2
EMMPRA2	-	Electrical Machines II (Practical)	Co-requisite: EMM2602
EPR201E	-	Electrical Engineering Practice II	
INE2601	-	Industrial Electronics II (Theory)	Pre-requisite: ECT1501 or ECT151R & ECTPRA1 or ECT1PRA Co-requisite: INEPRA2 or INE2PRA
INEPRA2	-	Industrial Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: INE2601
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691

Fourth level

Module			Pre/Co-requisite
Group A.			
DPJ391U	-	Design Project III	Pre-requisite: 10 study units on level 1 or level 2 and 2 study units on level 3.
EKM3601	-	Electronic Measurements III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & MTRPRA3 & EKMPRA3
EKMPRA3	-	Electronic Measurements III (Practical	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & MTRPRA3 & EKM3601
ELM3601	-	Electrical Protection III (Theory)	Pre-requisite: ELE2601 or ELE281X & ELEPRA2 or ELE2PRA Co-requisite: ELMPRA3 or ELM3PRA
ELMPRA3	-	Electrical Protection III (Practical)	Pre-requisite: ELE2601or ELE281X & ELEPRA2 or ELE2PRA Co-requisite: ELM3601 or ELM381Z
EMM3601	-	Electrical Machines III (Theory)	
EMMPRA3	-	Electrical Machines III (Practical)	Pre-requisite: ELE2601 & ELEPRA2 & EMM2602 & EMMPRA2 Co-requisite: EMM3601
MTR3601	-	Metrology III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTRPRA3 & EKM3601 & EKMPRA3
MTRPRA3	-	Metrology III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & EKM3601 & EKMPRA3
PCE3601	-	Power Electronics III (Theory)	Pre-requisite: INE2601 & INEPRA2 or (ECT2601 & ECTPRA2) Co-requisite: PCEPRA3
PCEPRA3	-	Power Electronics III (Practical)	Pre-requisite: (INE2601 & INEPRA2) or (ECT2601 & ECTPRA2) Co-requisite: PCE3601
Group B. Choose 1 of the following groups of modules.			
BSM1501	-	Business Management IA	
BSM1602	-	Business Management IB	
Group C.			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	

CSETMYE

National Diploma: Engineering: Electrical

Stream: Process Instrumentation

Qualification code: NDEEN - PIN | **NQF Exit level:** 6 | **Total credits:** 360 | **APS:** 18 | **SAQA ID:** 62386

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements: A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants, who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Rules: Compilation of curriculum: The following compulsory modules need to be completed: English for Academic Purposes. Ethical Information and Communication Technologies for Development Solutions. Mathematics 1, 2 & 3. Electrical Engineering 1 & 2. Electronics 1 & 2. Digital Systems 1. Design Project 3. Electrical Engineering Practice 1 & 2. 60 of the 360 credits must be level 3 subjects. Students who select Electronic Measurements 3 and Metrology 3 must pass both modules in order for credit to be granted. For experiential learning purposes, students currently unemployed should contact the department.

Purpose statement: Students will be competent to apply technical knowledge, engineering principles and problem-solving techniques in the field of Electrical Engineering by operating within the relevant standards and codes in collaboration with other members of the engineering team. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A.			
COS1511	-	Introduction to Programming I	
DIG1501	-	Digital Systems I (Theory)	Co-requisite: DIGPRA1
DIGPRA1	-	Digital Systems I (Practical)	Co-requisite: DIG1501
ECT1501	-	Electronics I (Theory)	Co-requisite: ECTPRA1
ECTPRA1	-	Electronics I (Practical)	Co-requisite: ECT1501
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

Module			Pre/Co-requisite
Group A.			
DIG2601	-	Digital Systems II (Theory)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIGPRA2
DIGPRA2	-	Digital Systems II (Practical)	Pre-requisite: DIG1501 & DIGPRA1 Co-requisite: DIG2601
ECT2601	-	Electronics II (Theory)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECTPRA2
ECTPRA2	-	Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: ECT2601
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
EPR101E	-	Electrical Engineering Practice I	
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
PRI1501	-	Process Instrumentation I (Theory)	Co-requisite: PRIPRA1
PRIPRA1	-	Process Instrumentation I (Practical)	
PRIPRA2	-	Process Instrumentation II (Practical)	Pre-requisite: PRI1501 & PRIPRA1 Co-requisite: PRI2601

Third level

Module			Pre/Co-requisite
Group A.			
CSY3601	-	Control Systems III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSYPRA3
CSYPRA3	-	Control Systems III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 & ELE2601 & ELEPRA2 & MAT3700 Co-requisite: CSY3601
DIG3601	-	Digital Systems III (Theory)	Pre-requisite: DIG2601 & DIGPRA2 Co-requisite: DIGPRA3
DIGPRA3	-	Digital Systems III (Practical)	Pre-requisite: DIG2601& DIGPRA2 Co-requisite: DIG3601

EPR201E	-	Electrical Engineering Practice II	
ICT1512	-	Introduction to Interactive Programming	Co-requisite: ICT1513
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
INE2601	-	Industrial Electronics II (Theory)	Pre-requisite: ECT1501 or ECT151R & ECTPRA1 or ECT1PRA Co-requisite: INEPRA2 or INE2PRA
INEPRA2	-	Industrial Electronics II (Practical)	Pre-requisite: ECT1501 & ECTPRA1 Co-requisite: INE2601
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691
PRI2601	-	Process Instrumentation II (Theory)	Pre-requisite: PRI1501 & PRIPRA1 Co-requisite: PRIPRA2
PRI3601	-	Process Instrumentation III (Theory)	Pre-requisite: PRI2601 & PRIPRA2 Co-requisite: PRIPRA3
PRIPRA3	-	PROCESS INSTRUMENTATION III (PRACTICAL)	Pre-requisite: PRI2601 & PRIPRA2 Co-requisite: PRI3601

Fourth level

Module			Pre/Co-requisite
Group A.			
DPJ391U	-	Design Project III	Pre-requisite: 10 study units on level 1 or level 2 and 2 study units on level 3.
EKM3601	-	Electronic Measurements III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & MTRPRA3 & EKMPRA3
EKMPRA3	-	Electronic Measurements III (Practical	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & MTRPRA3 & EKM3601
MTR3601	-	Metrology III (Theory)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTRPRA3 & EKM3601 & EKMPRA3
MTRPRA3	-	Metrology III (Practical)	Pre-requisite: ECT2601 & ECTPRA2 Co-requisite: MTR3601 & EKM3601 & EKMPRA3
Group B. Choose 1 of the following groups of modules			
BSM1501	-	Business Management IA	
BSM1602	-	Business Management IB	
Group C.			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	

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National Diploma: Engineering: Industrial

Qualification code: NDEID **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62387

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements: A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Rules: Work-integrated learning (WIL) is a compulsory component towards the completion of this qualification. Students may do IDP101E and IDP201E sequentially, that is, IDP201E after IDP101E or simultaneously by registering for both modules in the same year.

Purpose statement: The Industrial Engineering technician is involved in the investigation, improvement, design and implementation of integrated systems, comprising the optimisation of capital, plant, manpower and raw materials. The principles and techniques of engineering, industrial economics and management are utilised to design the systems to obtain the desired physical and economical results. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510
MCA1PRA	-	Mechanics I (Practical)	Co-requisite: PHY1501
MED161Q	-	Mechanical Engineering Drawing I	
MME1501	-	Mechanical Manufacturing Engineering I (Theory)	Co-requisite: MMEPRA1
MMEPRA1	-	Mechanical Manufacturing Engineering I (Practical)	Co-requisite: MME1501
PHY1501	-	Elementary Mechanics	Co-requisite: AMC1PRA (only applicable to NDECI), MCA1PRA (only applicable to NDEEN-MEC, NDEID, NDEMC)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
EWS121Q	-	Engineering Work Study I	
MME2601	-	Mechanical Manufacturing Engineering II (Theory)	Pre-requisite: MME1501 Co-requisite: MMEPRA1
MMEPRA2	-	Mechanical Manufacturing Engineering II (Practical)	Pre-requisite: MME1501 Co-requisite: MMEPRA1 & MME2601
PEI191V	-	Production Engineering: Industrial I	
QUT151Z	-	Qualitative Techniques I	
SOM2601	-	Strength of Materials II (Theory)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: SOMPRA2
SOMPRA2	-	Strength of Materials II (Practical)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: SOM2601

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
EWS271L	-	Engineering Work Study II	Pre-requisite: EWS121Q
FLM271S	-	Facility Layout and Materials Handling	
HRM2605	-	Human Resource Management for Line Managers	
MAC1501	-	Introduction to Management Accounting	
MAC2602	-	Principles of Strategy, Risk & Financial Management Techniques	Pre-requisite: FAC1502 & (either BNU1501 or QMI1500 or DSC1630) (except for qualification code 90017)
MME3601	-	Mechanical Manufacturing Engineering III	Pre-requisite: MME2601 & MMEPRA2
PEI281S	-	Production Engineering: Industrial II	
QAS221U	-	Quality Assurance II	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
ATO331Q	-	Automation III	Pre-requisite: MME2601 & MMEPRA2
EWS381G	-	Engineering Work Study III	Pre-requisite: EWS271L, FLM271S, MAC1501 & MAC2602

FMA401V	-	Financial Management IV	
IDP101E	-	Industrial Engineering Practice I	
IDP201E	-	Industrial Engineering Practice II	
MEE231V	-	Mechanical Engineering Design II	Pre-requisite: MED161Q
MGP437U	-	Management Practice IV	
OPR371S	-	Operational Research III	Pre-requisite: PEI281S & QUT151Z

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National Diploma: Engineering: Mechanical

Qualification code: NDEMC **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** 62388

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Students must have access to a computer, printer and the necessary software for two hours per week. Also see the requirements for IT related study units. For Computer Aided Drafting I (CAD161S), students must have access to the following: Pentium 486DX (or higher) with at least 16 MB RAM, connected to printer MS Windows operating system, with AutoCAD program (Version 13 or Student Version 13). Students that have successfully completed MCP101E may apply to be exempted from MME1PRA and MME2PRA. To align the new Diploma to the Higher Education Qualifications Framework (HEQF) and the Engineering Council of South Africa (ECSA) documents, the curricula for Mechanical Engineering has been restructured as indicated above. Work-integrated learning (WIL) is a compulsory component towards the completion of this qualification. Students may do MCP101E and MCP201E sequentially, that is, MCP201E after MCP101E or simultaneously by registering for both modules in the same year
Purpose statement:	A career in Mechanical Engineering will expose you to machines, vehicles, ships or aircraft. As part of a mechanical engineering team you will become involved in design, development and manufacture of a wide variety of components and systems. You will also be exposed to and eventually be responsible for organising the running of industrial installations and/or process plants. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
BSM1501	-	Business Management IA	
ELE1501	-	Electrical Engineering I (Theory)	Co-requisite: ELEPRA1
ELEPRA1	-	Electrical Engineering I (Practical)	Co-requisite: ELE1501
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510
MCA1PRA	-	Mechanics I (Practical)	Co-requisite: PHY1501
MED161Q	-	Mechanical Engineering Drawing I	
MME1501	-	Mechanical Manufacturing Engineering I (Theory)	Co-requisite: MMEPRA1
MMEPRA1	-	Mechanical Manufacturing Engineering I (Practical)	Co-requisite: MME1501
PHY1501	-	Elementary Mechanics	Co-requisite: AMC1PRA (only applicable to NDECI), MCA1PRA (only applicable to NDEEN-MEC, NDEID, NDEMC)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
ELE2601	-	Electrical Engineering II (Theory)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELEPRA2
ELEPRA2	-	Electrical Engineering II (Practical)	Pre-requisite: ELE1501 & ELEPRA1 Co-requisite: ELE2601
FMC2601	-	Fluid Mechanics II (Theory)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: FMCPRA2 or FMC2PRA
FMCPRA2	-	Fluid Mechanics II (Practical)	Pre-requisite: PHY1501 & AMC1PRA Co-requisite: FMC2601 or FMC201U
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
MEE231V	-	Mechanical Engineering Design II	Pre-requisite: MED161Q
MEG101T	-	Maintenance Engineering I	Pre-requisite: MAT1581
MOM2601	-	Mechanics of Machines II (Theory)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: MOMPRA2
MOMPRA2	-	Mechanics of Machines II (Practical)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: MOM2601
SOM2601	-	Strength of Materials II (Theory)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: SOMPRA2
SOMPRA2	-	Strength of Materials II (Practical)	Pre-requisite: PHY1501 & MCA1PRA Co-requisite: SOM2601
THD2601	-	Thermodynamics II (Theory)	Pre-requisite: PHY1501 Co-requisite: MCA1PRA
THDPRA2	-	Thermodynamics II (Practical)	Pre-requisite: PHY1501 Co-requisite: MCA1PRA

Third level

Module	Pre/Co-requisite

Group A. Compulsory			
CAD161S	-	Computer Aided Draughting I	Co-requisite: MED161Q
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	
MCP101E	-	Mechanical Engineering Practice I	
MEA351A	-	Mechanical Engineering Design III	Pre-requisite: MEE231V
MME2601	-	Mechanical Manufacturing Engineering II (Theory)	Pre-requisite: MME1501 Co-requisite: MMEPRA1
MMEPRA2	-	Mechanical Manufacturing Engineering II (Practical)	Pre-requisite: MME1501 Co-requisite: MMEPRA1 & MME2601
Group B. Choose any 3 from the following groups of modules			
FMA3601	-	Fluid Mechanics III (Theory)	Pre-requisite: FMC2601 Co-requisite: FMCPRA2
FMAPRA3	-	Fluid Mechanics III (Practical)	Pre-requisite: FMC2601 Co-requisite: FMCPRA2
Group C.			
MOM3601	-	Mechanics of Machines III (Theory)	Pre-requisite: MOM2601 & MOMPRA2 Co-requisite: MOMPRA3
MOMPRA3	-	Mechanics of Machines III (Practical)	Pre-requisite: MOM2601 & MOMPRA2 Co-requisite: MOM3601
Group D.			
SOM3601	-	Strength of Materials III (Theory)	Pre-requisite: SOM2601 Co-requisite: SOMPRA2
SOMPRA3	-	Strength of Materials III (Practical)	Pre-requisite: SOM2601 Co-requisite: SOMPRA2
Group E.			
THD3601	-	Thermodynamics III (Theory)	Pre-requisite: THD2601 Co-requisite: THDPRA2
THDPRA3	-	Thermodynamics III (Practical)	Pre-requisite: THD2601 Co-requisite: THDPRA2

Fourth level

Module			**Pre/Co-requisite**
Group A. Compulsory			
MCP201E	-	Mechanical Engineering Practice II	
Group B. Choose any 2 from the following groups			
FMA3602	-	Hydraulic Machines III (Theory)	Pre-requisite: FMA3601 Co-requisite: FMAPRB3
FMAPRB3	-	Hydraulic Machines III (Practical)	Pre-requisite: FMA3601
Group C.			
MOM3602	-	Theory of Machines III (Theory)	Pre-requisite: MOM3601 Co-requisite: MOMPRB3
MOMPRB3	-	Theory of Machines III (Practical)	Pre-requisite: MOM3601
Group D.			
SOM3602	-	Applied Strength of Materials III (Theory)	Pre-requisite: SOM3601 Co-requisite: SOMPRB3
SOMPRB3	-	Applied Strength of Materials III (Practical)	Pre-requisite: SOM3601
Group E.			
THD3602	-	Steam Plant III (Theory)	Pre-requisite: THD3601 Co-requisite: THDPRB3
THDPRB3	-	Steam Plant III (Practical)	Pre-requisite: THD3601
Group F. Choose any 1 from the following. Note: Theory and practical modules count as 1 subject.			
ELE3601	-	Electrical Engineering III (Theory)	Pre-requisite: ELE2601 & ELEPRA2 & ELE2PRA Co-requisite: ELEPRA3
ELEPRA3	-	Electrical Engineering III (Practical)	
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691
MEA361B	-	Machine Design III	Pre-requisite: MEA351A
MEG291X	-	Maintenance Engineering II	Pre-requisite: MEG101T

CSET

National Diploma: Engineering: Chemical

Qualification code: NDENG | **NQF Exit level:** 6 | **Total credits:** 360 | **APS:** 18 | **SAQA ID:** 62384

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants, who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Students enrolling for the first time in 2018 are required to do MAT1510. Students who registered prior to 2018 are not required to do this module. Students should register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510. CHF1501 replaces CEM2601. The following practical modules must be done at Unisa's Muckleneuk Campus in Pretoria: INC2PRA, ORC2PRA and PCH2PRA. The practical component of these study units is compulsory. Registration for the practical component is done at Unisa. The Chemical Engineering practical courses must be done at Unisa Florida laboratories. Both the theoretical and the practical component of the subject must be passed before credit for the subject can be obtained. The practical component must be done simultaneously or after the theoretical component. Modules can be completed concurrently or in different years. Access to a personal computer is compulsory for the practical. All study materials and examination papers are available only in English.
Purpose statement:	Chemical engineering is concerned with the manufacturing of chemicals on an industrial scale as well as the industrial processes that convert raw materials into products that have a higher economic value and in a particular manufacturing environment; there is usually a chemical design team. This team is usually led by a degreed Chemical Engineer, usually assisted by a Chemical Engineering Technologist or a Chemical Engineering Technician. They all obtain their qualifications from a university of technology or a university. The technologist has obtained a BTech degree and the technician a National Diploma. The team is qualified to research, develop, design, construct and operate the plants required to make any processed product. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa as a Professional Technician in this field of Engineering.

First level

Students enrolling for the first time in 2018 are required to do MAT1510 and CHF1501. Students who
registered prior to 2018 are not required to do MAT1581. CHF1501 replaces CEM2601. Students who have done CEM2601 or CEM211F do not need to do CHF1501. Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510.

Module			Pre/Co-requisite
Group A. Compulsory			
CHE181T	-	Chemistry I (Theory)	Co-requisite: CHE1PRA
CHE1PRA	-	Chemistry I (Practical)	Co-requisite: CHE181T
CHF1501	-	Chemical Engineering Fundamentals I	Co-requisite: CHE181T & MAT1581
DCE1501	-	Drawing: Chemical Engineering I	
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
FIC181C	-	Physics I (Theory)	Co-requisite: FIC1PRA
FIC1PRA	-	Physics I (Practical)	Co-requisite: FIC181C
MAT1510	-	Precalculus Mathematics A	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

The following practical modules must be done at Unisa's Muckleneuk Campus in Pretoria: INC2PRA,
ORC2PRA and PCH2PRA. The practical component of these study units is compulsory. Registration for the practical component is done at Unisa. The Chemical Engineering practical courses (CEMPRA2; CEMPRA3 and CEMPRB3) must be done at Unisa Florida laboratories. Both the theoretical and the practical component of the subject must be passed before credit for the subject can be obtained. The practical component must be done simultaneously or after the theoretical component; the modules can be completed concurrently or in different years. Access to a personal computer is compulsory for the practical.
All study materials and examination papers are available only in English.
Students who have done CEM2601 do not need to do CHF1501, students who have done CPI2601 do not need to do
CHF2601.

Module			Pre/Co-requisite
Group A. Compulsory			
CEMPRA2	-	Chemical Engineering Technology II (Practical)	Co-requisite: CHF2601or CEM2601
CHF2601	-	Chemical Engineering Fundamentals II	Pre-requisite: CHE181T& MAT1581 & (CHF1501or CEM2601)
ENP291Q	-	Engineering Physics II (Theory)	Pre-requisite: FIC181C Co-requisite: ENP2PRA
ENP2PRA	-	Engineer Physics II: (Practical)	Pre-requisite: FIC181C Co-requisite: ENP291Q
INC251U	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE181T & CHE1PRA
INC2PRA	-	Inorganic Chemistry II (Practical)	Co-requisite: INC251U
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
ORC221F	-	Organic Chemistry II (Theory)	Pre-requisite: CHE181T & CHE1PRA
ORC2PRA	-	Organic Chemistry II (Practical)	Co-requisite: ORC221F
PCH241P	-	Physical Chemistry II (Theory)	Pre-requisite: CHE181T, CHE1PRA
PCH2PRA	-	Physical Chemistry II (Practical)	Co-requisite: PCH241P

Third level

Work-integrated learning is a compulsory component towards the completion of this qualification.
Students must complete CEP101E or CEP2602 and CEP201E or CEP3602. Students may do CEP101E and CEP201E sequentially (i.e CEP201E after CEP101E) or simultaneously by registering for both modules in the same year. A student may only select CEP101E and CEP201E if s/he has a placement. CEP2602 and CEP3602 are modules which are offered at Unisa's Florida campus only which may require the student to relocate for the duration of the project. TRP2601 replaces CEM311A. Students who have done CEM311A do not need to do TRP2601. Students must complete CEP101E or CEP2602 and CEP201E or CEP3602. Students may do CEP101E and CEP201E sequentially (i.e CEP201E after CEP101E) or simultaneously by registering for both modules in the same year. A student may select CEP101E and CEP201E if s/he has a placement. CEP2602 and CEP3602 are modules which are offered at Unisa's Florida campus only which may require students to relocate for the duration of the project. CES2601 replaces CEM321B. Students who have done CEM321B do not need to do CES2601.

Module			Pre/Co-requisite
Group A. Compulsory			
CEMPRA3	-	Chemical Engineering Technology III (Module A) (Practical)	Co-requisite: TRP2601 or CEM311A
CHP3601	-	Chemical Plant III (Module A)	Pre-requisite: CHE181T
EMA2601	-	Engineering Management II (Module A)	
PCT3601	-	Process Control III	Pre-requisite: MAT1581 Co-requisite: MAT2691
TDC3601	-	Thermodynamics (Chemical Engineering III)	Co-requisite: PCH241P
TRP2601	-	Transport Phenomena I	Pre-requisite: MAT1581 & CHF1501 or CEM2601 Co-requisite: CHF2601 or CPI2601(Only applicable to NDENG)
Group B. Choose one from the following			
CEP101E	-	Chemical Engineering Practice I	Pre-requisite: CHE181T & CHE1PRA & DCE1501 & ENN103F & EUP1501 & FIC181C & FIC1PRA & MAT1581 & CEM2601or CHF1501 & CEMPRA2 & CHF2601or CPI2601 & MAT2691 Co-requisite: CEM321B or CES2601 & CEMPRA3 & CHP3602 & CPD3601 & EMA2602 & TDA3601
CEP2602	-	Chemical Engineering Practice: Work Directed Theoretical Learning I	Pre-requisite: CHE181T & CHE1PRA & DCE1501& ENN103F & EUP1501 & FIC181C & FIC1PRA & MAT1581 & CEM2601or CHF1501& CEMPRA2 & CHF2601 or CPI2601& ENP291Q & ENP2PRA & INC251U & INC2PR &, MAT2691 & ORC221F & ORC2PRA & PCH241P& PCH2PRA Co-requisite: CEM321B or CES2601& CEMPRA3 &CHP3602 & CPD3601& EMA2601 & TDA3601

Fourth level

Work-integrated learning is a compulsory component towards the completion of this qualification.
Students must complete CEP101E or CEP2602 and CEP201E or CEP3602. Students may do CEP101E and CEP201E sequentially (i.e CEP201E after CEP101E) or simultaneously by registering for both modules in the same year. A student may only select CEP101E and CEP201E if s/he has a placement. CEP2602 and CEP3602 are modules which are offered at Unisa's Florida campus only which may require the student to relocate for the duration of the project. TRP2601 replaces CEM311A. Students who have done CEM311A do not need to do TRP2601. CES2601 replaces CEM321B. Students who have done CEM321B do not need to do CES2601.

Module			Pre/Co-requisite
Group A. Compulsory			
CEMPRB3	-	Chemical Engineering Technology III Module B (Practical)	Co-requisite: CES2601 or CEM321B
CES2601	-	Separation Principles I	Pre-requisite: MAT1581, CHF1501 & CHF2601 Co-requisite: TRP2601 & CEMPRB3
CHP3602	-	Chemical Plant III (Module B)	Pre-requisite: CHE181T
CPD3601	-	Chemical Process Design: Principles III	Pre-requisite: CEM2601 or CHF1501 Co-requisite: CEM321B or CES2601
EMA2602	-	Engineering Management II (Module B)	
TDA3601	-	Thermodynamics (Applied III)	Co-requisite: PCH241P
Group B. Choose one from the following			
CEP201E	-	Chemical Engineering Practice II	Co-requisite: CEP101E or CEP2602
CEP3602	-	Chemical Engineering Practice: Work Directed Theoretical Learning I	Pre-requisite: CHE181T & CHE1PRA & DCE1501& ENN103F & EUP1501& FIC181C & FIC1PRA & MAT1581& CEM2601 or CHF1501 & CEMPRA2 & CHF2601 or CPI2601 & ENP291Q & ENP2PRA & INC251U & INC2PRA & MAT2691& ORC221F & ORC2PRA & PCH241P & PCH2PRA Co-requisite: CEP2602 or CEP101E & CEM321B or CES2601& CEMPRA3 & CHP3601 & CPD3601& EMA3602 & TDA3601

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National Diploma: Mining Engineering

Qualification code: NDMIN **NQF Exit level:** 6 **Total credits:** 360 **APS:** 18 **SAQA ID:** L1

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements: A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Purpose statement: To produce competent mining engineers whose responsibilities would include the selection and managing of the optimal mining process applicable to the relevant mineral deposit to be mined. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technician in this field of Engineering.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510
MEP171X	-	Mineral Exploitation I	
SMI181Q	-	Science: Mining I	
STA1510	-	Basic Statistics	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CAD161S	-	Computer Aided Draughting I	Co-requisite: MED161Q
ENV301E	-	Environmental Management	
EWS121Q	-	Engineering Work Study I	
FAC1501	-	Introductory Financial Accounting	
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
MED161Q	-	Mechanical Engineering Drawing I	
MPR101E	-	Mining Engineering Practice I	
MPR201E	-	Mining Engineering Practice II	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	
MBE2601	-	Mineral Beneficiation II	Pre-requisite: MEP171X
MEN2601	-	Mine Engineering II	Pre-requisite: SMI181Q
MGY2601	-	Mining Geology II	Pre-requisite: MEP171X
MIN2601	-	Mining II	Pre-requisite: MEP171X
SAV2601	-	Mine Survey and Valuation II	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
EMA3601	-	Engineering Management III	Pre-requisite: EMA2601 & EMA2602
GMI3601	-	Geology: Mining III	Pre-requisite: MGY2601 or MGY291S
MIE3601	-	Mine Engineering III	Pre-requisite: MEN2601
MIN3601	-	Mining III	
MTS351X	-	Mining Technical Services III	
SAV3601	-	Mine Survey and Valuation III	

National Diploma: Mine Surveying

Qualification code: NDMSR | **NQF Exit level:** 6 | **Total credits:** 360 | **APS:** 18 | **SAQA ID:** 62405

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:

A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.

Purpose statement:

To produce competent mine surveyors whose responsibilities (simplified) would include taking measurements upon and under the surface of the earth either in a horizontal or vertical plane and showing the results in the form of a map or plan applicable to the relevant mineral deposit to be mined.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
ENN103F	-	English for Academic Purposes	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510
MEP171X	-	Mineral Exploitation I	
MSP101R	-	Mine Survey Practice I	
SMI181Q	-	Science: Mining I	
STA1510	-	Basic Statistics	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
EMA2601	-	Engineering Management II (Module A)	
EMA2602	-	Engineering Management II (Module B)	
EUC1501	-	End-User Computing I (Theory)	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT2691	-	Mathematics II (Engineering)	Pre-requisite: MAT1581
MGY2601	-	Mining Geology II	Pre-requisite: MEP171X
MSG211Q	-	Mine Survey II	Pre-requisite: MEP171X
MSP242S	-	Mine Survey Practice II	
MVA231Q	-	Mine Valuation II	Pre-requisite: MEP171X

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
EMA3601	-	Engineering Management III	Pre-requisite: EMA2601 & EMA2602
MSG3601	-	Mine Survey III	Pre-requisite: MSG211Q
MSP352T	-	Mine Survey Practice III	
MVA3601	-	Mine Valuation III	Pre-requisite: MVA231Q & STA1510
STG381S	-	Structural Geology III	Pre-requisite: MGY291S or MGY2601

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National Diploma: Pulp and Paper Technology

Qualification code: NDPPT | **NQF Exit level:** 6 | **Total credits:** 360 | **APS:** 18 | **SAQA ID:** 62411

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2023, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Senior Certificate (NSC) (Diploma endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Students enrolling for the first time in 2018 are required to do MAT1510. Students who registered prior to 2018 are not required to do this module. Students should register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510. The following practical module must bedone at Unisa's Muckleneuk Campus in Pretoria: PCH2PRA. The Chemical Engineering practical courses must be done at Unisa Florida Laboratories. Both the theoretical and the practical component of the subject must be passed before credit for the subject can be obtained. The practical component must be done simultaneously or after the theoretical component. Modules can be completed concurrently or in different years. Access to a personal computer is compulsory for the Practical. All study materials and examination papers (except Mathematics III) are available only in English. Students who have done CEM2601 do not need to do CHF1501 and CHF2601. Students who have done CEM311A do not need to do TRP2601 and students who have done CEM321B do not need to do CES2601.
Purpose statement:	To apply integrated technical knowledge/skills and advanced analysis and problem solving to a particular specialised research area in Chemical Engineering.

First level

Students enrolling for the first time in 2018 are required to do MAT1510 and CHF1501. Students who
registered prior to 2018 are not required to do MAT1581. Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510 and CHF1501 and CHF2601 replace CEM2601. Students who have done CEM2601 or CEM211F do not need to do CHF1501 and CHF2601.

Module			Pre/Co-requisite
Group A. Compulsory			
CHE181T	-	Chemistry I (Theory)	Co-requisite: CHE1PRA
CHE1PRA	-	Chemistry I (Practical)	Co-requisite: CHE181T
CHF1501	-	Chemical Engineering Fundamentals I	Co-requisite: CHE181T & MAT1581
ENN103F	-	English for Academic Purposes	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
FIC181C	-	Physics I (Theory)	Co-requisite: FIC1PRA
FIC1PRA	-	Physics I (Practical)	Co-requisite: FIC181C
IPM101P	-	Introduction to Pulp and Paper Making I	
MAT1510	-	Precalculus Mathematics A	
MAT1581	-	Mathematics I (Engineering)	Recommendation: Students are recommended to register for MAT1581 in the 2nd semester, once they have done the first part of MAT1510

Second level

The following practical modules must be done at Unisa's Muckleneuk Campus in Pretoria: PCH2PRA. The
practical component of this study unit is compulsory. Registration for the practical component is done at Unisa. The Chemical Engineering practical courses must be done at Unisa Florida laboratories, and Durban University of Technology or Cape Penesula University of Technology as these institutions offer the same courses. If the student decides to do the practical component at DUT or CPUT, the student must register for the module at Unisa and indicate in Assignment 1, where s/he wishes to do the practical module. Unisa will then make the necessary arrangements, and the practical dates will be communicated to the student. Both the theoretical and the practical component of the subject must be passed before credit for the subject can be obtained. The practical component must be done simultaneously or after the theoretical component. Modules can be completed concurrently or in different years. Access to a personal computer is compulsory for the practical. All study materials and examination papers are available only in English. Work integrated learning is a compulsory component towards the completion of this qualification.

Module			Pre/Co-requisite
Group A. Compulsory			
CEMPRA2	-	Chemical Engineering Technology II (Practical)	Co-requisite: CHF2601or CEM2601
CHF2601	-	Chemical Engineering Fundamentals II	Pre-requisite: CHE181T& MAT1581 & (CHF1501or CEM2601)
ENP291Q	-	Engineering Physics II (Theory)	Pre-requisite: FIC181C Co-requisite: ENP2PRA
ENP2PRA	-	Engineer Physics II: (Practical)	Pre-requisite: FIC181C Co-requisite: ENP291Q
PCH241P	-	Physical Chemistry II (Theory)	Pre-requisite: CHE181T, CHE1PRA
PCH2PRA	-	Physical Chemistry II (Practical)	Co-requisite: PCH241P
PCY2601	-	Pulp and Paper Chemistry II	

PTL101P	-	Pulp and Paper Technology I
PUP1501	-	Pulp and Paper Practice I
QUT151Z	-	Qualitative Techniques I

Third level

Work-integrated learning is a compulsory component towards the completion of this qualification.

TRP2601 replaces CEM311A. Students who have done CEM311A do not need to do TRP2601. Work-integrated learning is a compulsory component towards the completion of this qualification. CES2601 replaces CEM321B. Students who have done CEM321B do not need to do CES2601.

Module			Pre/Co-requisite
Group A. Compulsory			
CEMPRA3	-	Chemical Engineering Technology III (Module A) (Practical)	Co-requisite: TRP2601 or CEM311A
CHP3601	-	Chemical Plant III (Module A)	Pre-requisite: CHE181T
EMA2601	-	Engineering Management II (Module A)	
PTL2601	-	Pulp and Paper Technology II	
PUP2601	-	Pulp and Paper Practice II	Co-requisite: CHE181T & CHE1PRA & ENN103F & EUP1501 & FIC181C & FIC1PRA &IPM101P & MAT1581 & CEM2601 or CHF1501
TRP2601	-	Transport Phenomena I	Pre-requisite: MAT1581 & CHF1501 or CEM2601 Co-requisite: CHF2601 or CPI2601(Only applicable to NDENG)

Fourth level

Work-integrated learning is a compulsory component towards the completion of this qualification.

TRP2601 replaces CEM311A. Students who have done CEM311A do not need to do TRP2601. Work-integrated learning is a compulsory component towards the completion of this qualification. CES2601 replaces CEM321B. Students who have done CEM321B do not need to do CES2601.

Module			Pre/Co-requisite
Group A. Compulsory			
CEMPRB3	-	Chemical Engineering Technology III Module B (Practical)	Co-requisite: CES2601 or CEM321B
CES2601	-	Separation Principles I	Pre-requisite: MAT1581, CHF1501 & CHF2601 Co-requisite: TRP2601 & CEMPRB3
CHP3602	-	Chemical Plant III (Module B)	Pre-requisite: CHE181T
EMA2602	-	Engineering Management II (Module B)	
PCY3601	-	Pulp and Paper Chemistry III	
PTL3601	-	Pulp and Paper Technology III	Co-requisite: PTL2601
PUP3601	-	Pulp and Paper Practice III	Pre-requisite: PUP1501 or PUP101P
TDA3601	-	Thermodynamics (Applied III)	Co-requisite: PCH241P

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ADVANCED DIPLOMA

Advanced Diploma in Information Resource Management

Qualification code: 90007 **NQF Exit level:** 7 **Total credits:** 120 **APS:** 60 **SAQA ID:** 94672

This qualification will be presented using both online and distance learning modes.

Admission requirements:	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. 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.
Rules:	Students must take note that there has been a change of module CODES (with exception to IRM4725). IRM4711 has been replaced by IRM4720, IRM4713 replaced by IRM4721, IRM4714 replaced by IRM4722, IRM4717 replaced by IRM4723, IRM4719 replaced by IM4724, IRM4712 replaced by IRM4726, IRM4715 replaced by IRM4727, IMR4718 replaced by IRM4728 and IRM4716 replaced by IRM4729. The content of the modules remained the same, only the code structure has changed. Students are highly advised to register in the sequence of the module codes. IRM4720, IRM4721, IRM4722,IRM4723,IRM4724,IRM4725 to be registered in the first semester AND IRM4726, IRM4727, IRM4728, IRM4729 to be registered in the second semester.
Purpose statement:	Qualifying learners will be able to apply the theoretical knowledge to the management of Information Communication Technology (ICT) services in an organisation, in a holistic approach to managing services, from end-to-end, where all aspects of a service (and not just the individual technology silos) are delivered within a determined timeframe, properly secured, and available when necessary to the business customer, where Information Technology Infrastructure Library (ITIL) is used in conjunction with other good practices to manage information technology (such as COBIT). This qualification aims to improve the level of training for new entrants as well as practicing service managers and supervisory staff. In addition, it will provide a solid theoretical basis for staff who have undergone on-the-job training without the benefit of being exposed to the underpinning theory and best practices provided by any ITIL based theoretical training at tertiary level. Both entry level staff and experienced staff with relevant practical experience will benefit.

First level

Module			Pre/Co-requisite
Group A. Compulsory.			
IRM4720	-	Principle Concepts of ITSM	
IRM4721	-	Networks IV	
IRM4722	-	Information Technology Ethics	
IRM4723	-	Database Systems IV	
IRM4724	-	Development Software IV	
IRM4725	-	ICT Project Management	
IRM4726	-	Service Management Functions (Service Desk)	
IRM4727	-	Service Operation Processes	
IRM4728	-	Incident and Problem Management	
IRM4729	-	Research Script	

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POSTGRADUATE DIPLOMAS

Postgraduate Diploma in Information Resource Management

Qualification code: 90069 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 94681

This qualification will be presented using both online and distance learning modes.

Admission requirements: An appropriate Bachelor's Degree, or Advanced Diploma in IRM/ Computer Science /Information Systems/ ICT / or degree in Computing or related field at NQF level 7 with an average of 60% or more in the qualification. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.

Purpose statement: Qualifying students will be able to integrate conceptual, causal, procedural and contextual knowledge to manage ICT services in an organization. The formal qualification completes the undergraduate stream providing access to postgraduate studies. This aims to deepen applied knowledge of practicing service managers and supervisory staff in the industry. The industry in SA, Africa and globally will shift toward ICT services to be efficient integrated business processes, activities and performance.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
HPCOS81	-	Research Methods and Proposal	
HRCOS82	-	Honours Research Report	Pre-requisite: HPCOS81
IRM4811	-	Service Design Management	
IRM4812	-	Service Level and Supplier Management	
IRM4813	-	Knowledge Management	
IRM4814	-	Change Management	
IRM4815	-	Information & Computer Security	
IRM4816	-	Service Validation, Testing and Evaluation	

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BACCALAUREUS TECHNOLOGIAE DEGREES

Baccalaureus Technologiae: Engineering: Chemical (Environmental)

Qualification code: BTECE **NQF Exit level:** 7 **Total credits:** 120 **APS:** 50 **SAQA ID:** 16427

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Diploma: Engineering (S4) in Chemical Engineering OR National Higher Diploma in Chemical Engineering (T4) OR National Diploma: Chemical Engineering (T3 diploma: 3 semesters UoT training plus 3 semesters' work integrated learning) PLUS the following 3 bridging units: Chemical Engineering Technology III (Module B) (CEM321B CEM3PRB or CEMPRB3); Thermodynamics: Chemical Engineering III (TDC341P or TDC3601); Chemical Process Design: Principles III (CPD371S or CPD3601), or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification. Foreign Chemical Engineering qualifications are considered but subject to SAQA evaluation and departmental approval.
Rules:	Important: A student may only register for the BTech: Engineering: Chemical (Environmental) if he or she : a) can identify and complete a research project for CEE4701 (CEE401C), b) the project (CEE401C/CEE4701) must be related to water treatment or solid waste treatment or air quality control, c) has access to a computer simulation design programme/package for CPD4702 (CPD4M2C), such as ASPEN, CHEMCAD, PROII, etc. and d) can provide a mentor for each of the above study units respectively. It is the responsibility of the student to find it elsewhere. Students who register for CEE4701 and CPD4702 will be required to do oral presentations as part of the assessment for these modules. CEM4703 has been replaced with SEP4701, students who have completed CEM4703 may not register for SEP4701.
Purpose statement:	Chemical engineering is concerned with the manufacturing of chemicals on an industrial scale as well as with the industrial processes that convert raw materials into products that have higher economic value. In a particular manufacturing environment, there is usually a chemical engineering team. This team is usually led by a degreed Chemical Engineer, usually assisted by a Chemical Engineering Technologist or a Chemical Engineering Technician. They all obtain their qualifications from a university of technology or a university. The technologist has obtained a BTech degree and the technician a National Diploma. The team is qualified to research, develop, design, construct and operate the plants required to make any processed product. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Compulsory.			
AQC4701	-	Air Quality Control (Chemical) IV	
CEE4701	-	Chemical Environmental Engineering IV (Project)	Co-requisite: AQC4701 & SWT4701 & WTC4701
CEM4702	-	Chemical Engineering Technology IV: Heat and Mass (Module B)	
CPD4701	-	Chemical Process Design IV: Equipment Design (Module A)	Co-requisite: CEM4702 & CEM4703 or SEP4701
CPD4702	-	Chemical Process Design IV: Plant Design (Module B)	Co-requisite: CPD4701& RTE4701
EMC401C	-	Environmental Management for Chemical Engineering IV	
RTE4701	-	Reactor Technology IV	Co-requisite: CEM4702
SEP4701	-	Separation Principles II	Co-requisite: CEM4702
SWT4701	-	Solid Waste Treatment (Chemical) IV	
WTC4701	-	Water Treatment (Chemical) IV	

CSETMyereg

Baccalaureus Technologiae: Engineering: Civil

Stream: Environmental Engineering

Qualification code: BTECV - ENV | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62320

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Diploma: Engineering (S4) in the relevant discipline or equivalent qualification OR National Higher Diploma in Civil Engineering (T4) OR Foreign Civil Engineering qualifications are considered but subject to SAQA evaluation and departmental approval. Students with a National Diploma (T3) in Civil Engineering must do bridging study units: (i) Documentation III. Choose 3 of the following 4 study units: (ii) Structural Analysis III; (iii) Transportation Engineering III; (iv) Water Engineering III; (iv) Geotechnical Engineering III or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.
Rules:	A total of eight study units must be taken. All the study units for BTECV-ENV are compulsory. For project and theory modules, the students must register for the project and the theory components simultaneously unless a credit for any component has been approved by Unisa. Both the project component and the theory component must be passed to obtain full credit for the study unit.
Purpose statement:	To train civil engineering technologists for specialization in particular field of Civil Engineering, e.g. Water, Construction Management, Urban Planning, Environmental and Structural. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a professional Technologist in the field of Civil Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EEN4701	-	Environmental Engineering: Civil IV (Module A)	Co-requisite: EEN4702 & EEN4703 & EEN4704
EEN4702	-	Environmental Engineering: Civil IV (Module B)	Co-requisite: EEN4701 & EEN4703 & EEN4704
EEN4703	-	Environmental Engineering: Civil IV (Module A) Project	Co-requisite: EEN4701 & EEN4702 & EEN4704
EEN4704	-	Environmental Engineering: Civil IV (Module B) Project	Co-requisite: EEN4701 & EEN4702 & EEN4703
EGE401C	-	Environmental Management for Engineers: Civil IV (Theory)	Co-requisite: EGE4PJT
EGE4PJT	-	Environmental Management for Engineers: Civil IV (Project)	Co-requisite: EGE401C
SNS4701	-	Social Environmental Studies: Civil IV : Module A: Theory	Co-requisite: SNS4702 & SNS4PJA & SNS4703
SNS4702	-	Social Environmental Studies: Civil IV : Module B: Theory	Co-requisite: SNS4701 & SNS4703 & SNS4PJA
SNS4703	-	Social Environmental Studies: Civil IV (Module B) Project	Co-requisite: SNS4701 & SNS4702 & SNS4PJA
SNS4PJA	-	Social Environmental Studies: Civil IV (Module A) Project	Co-requisite: SNS4701 & SNS4702 & SNS4703
SWM4701	-	Solid Waste Management IV (Theory)	Co-requisite: SWM4702
SWM4702	-	Solid Waste Management IV (Project)	Co-requisite: SWM4701
WTT4701	-	Water Treatment Technology IV	Co-requisite: WTT4702
WTT4702	-	Water Treatment Technology IV (Project)	Co-requisite: WTT4701
WWT4701	-	Waste Water Treatment Technology IV (Theory)	Co-requisite: WWT4702
WWT4702	-	Waste Water Treatment Technology IV (Project))	Co-requisite: WWT4701

CSETMyereg 20

Baccalaureus Technologiae: Engineering: Civil

Stream: Structural

Qualification code: BTECV - STR | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62320

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Diploma: Engineering (S4) in the relevant discipline or equivalent qualification OR National Higher Diploma in Civil Engineering (T4) OR Foreign Civil Engineering qualifications are considered but subject to SAQA evaluation and departmental approval. Students with a National Diploma (T3) in Civil Engineering must do bridging study units: (I) Documentation III. Choose 3 of the following 4 study units: (ii) Structural Analysis III; (iii) Transportation Engineering III; (iv) Water Engineering III; (iv) Geotechnical Engineering III or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.
Rules:	A total of eight study units must be taken. All the study units for BTECV-STR are compulsory. For project and theory modules, the students must register for the project and the theory components simultaneously unless a credit for any component has been approved by Unisa. Both the project component and the theory component must be passed to obtain full credit for the study unit. For practical, project and theory modules, the student must register for the practical, project and theory components simultaneously unless a credit for any component has been approved by Unisa. All three components must be passed to obtain full credit for the study unit. Pipeline students repeating CMC4701& CMC4702 will have until end of 2017 to complete both modules. Students who will not complete both CMC4701 & CMC4702 by end of 2017,must change over to RDM4701 & RDM4702
Purpose statement:	To train civil engineering technologists for specialization in particular field of Civil Engineering, e.g. Water, Construction Management, Urban Planning, Environmental and Structural. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a professional Technologist in the field of Civil Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
CNT4701	-	Concrete Technology IV (Theory)	Co-requisite: CNT4702 & CNTPRA4
CNT4702	-	Concrete Technology IV (Project)	Co-requisite: CNT4701& CNTPRA4
CNTPRA4	-	Concrete Technology IV (Practical)	Co-requisite: CNT4701 & CNT4702
FEN4701	-	Foundation Engineering IV (Theory)	Co-requisite: FEN4702
FEN4702	-	Foundation Engineering IV (Project)	Co-requisite: FEN4701
RCD4701	-	Reinforced Concrete Design IV (Theory)	Co-requisite: RCD4PJT & CNT4701 & CNT4702 & CNTPRA4
RCD4PJT	-	Reinforced Concrete Design IV (Project)	Co-requisite: RCD4701 & CNT4701 & CNT4702 & CNTPRA4
RDM4701	-	Reticulation Design and Management IV (Theory)	Co-requisite: RDM4702
RDM4702	-	Reticulation Design and Management IV (Project)	Co-requisite: RDM4701
SAN4701	-	Structural Analysis IV	
SMD4701	-	Structural Masonry Design IV (Theory)	Co-requisite: SMD4702
SMD4702	-	Structural Masonry Design IV (Project)	Co-requisite: SMD4701
SSD4701	-	Structural Steel Design IV (Theory)	Co-requisite: SSD4702
SSD4702	-	Structural Steel Design IV (Project)	Co-requisite: SSD4701
TST401C	-	Theory of Structures IV	

CSETMyereg

Baccalaureus Technologiae: Engineering: Civil

Stream: Urban Engineering

Qualification code: BTECV - URB **NQF Exit level:** 7 **Total credits:** 120 **APS:** 50 **SAQA ID:** 62320

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Diploma: Engineering (S4) in the relevant discipline or equivalent qualification OR National Higher Diploma in Civil Engineering (T4) OR Foreign Civil Engineering qualifications are considered but subject to SAQA evaluation and departmental approval. Students with a National Diploma (T3) in Civil Engineering must do bridging study units: (i) Documentation III. Choose 3 of the following 4 study units: (ii) Structural Analysis III; (iii) Transportation Engineering III; (iv) Water Engineering III; (iv) Geotechnical Engineering III or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.
Rules:	A total of eight study units must be taken. All the study units for BTECV-URB are compulsory. For project and theory modules, the students must register for the project and the theory components simultaneously unless a credit for any component has been approved by Unisa. Both the project component and the theory component must be passed to obtain full credit for the study unit. Students will be credited for CNT401, CNT4702 & CNTPRA4 if they passed both CMT4701 & CMT4702. Pipeline students repeating either CMT4701 or CMT4702, will have until end of 2017 to complete the module. Students who have not yet completed both CMT4701 & CMT4702 by end of 2017 must change over to CNT4701, CNT4702 & CNTPRA4 in 2018.
Purpose statement:	To train civil engineering technologists for specialization in particular field of Civil Engineering, e.g. Water, Construction Management, Urban Planning, Environmental and Structural. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a professional Technologist in the field of Civil Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
CNT4701	-	Concrete Technology IV (Theory)	Co-requisite: CNT4702 & CNTPRA4
CNT4702	-	Concrete Technology IV (Project)	Co-requisite: CNT4701& CNTPRA4
CNTPRA4	-	Concrete Technology IV (Practical)	Co-requisite: CNT4701 & CNT4702
GDS4701	-	Geometric Design IV (Theory)	Co-requisite: GDS4702
GDS4702	-	Geometric Design IV (Project)	Co-requisite: GDS4701
PVT4701	-	Pavement Technology IV (Theory)	Co-requisite: PVT4702
PVT4702	-	Pavement Technology IV (Project)	Co-requisite: PVT4701
RDM4701	-	Reticulation Design and Management IV (Theory)	Co-requisite: RDM4702
RDM4702	-	Reticulation Design and Management IV (Project)	Co-requisite: RDM4701
SWM4701	-	Solid Waste Management IV (Theory)	Co-requisite: SWM4702
SWM4702	-	Solid Waste Management IV (Project)	Co-requisite: SWM4701
UPD4701	-	Urban Planning and Design IV (Theory)	Co-requisite: UPD4702
UPD4702	-	Urban Planning and Design IV (Project)	Co-requisite: UPD4701
WTT4701	-	Water Treatment Technology IV	Co-requisite: WTT4702
WTT4702	-	Water Treatment Technology IV (Project)	Co-requisite: WTT4701
WWT4701	-	Waste Water Treatment Technology IV (Theory)	Co-requisite: WWT4702
WWT4702	-	Waste Water Treatment Technology IV (Project))	Co-requisite: WWT4701

CSETMyereg

Baccalaureus Technologiae: Engineering: Civil

Stream: Water

Qualification code: BTECV - WAT | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62320

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Diploma: Engineering (S4) in the relevant discipline or equivalent qualification OR National Higher Diploma in Civil Engineering (T4) OR Foreign Civil Engineering qualifications are considered but subject to SAQA evaluation and departmental approval. Students with a National Diploma (T3) in Civil Engineering must do bridging study units: (i) Documentation III. Choose 3 of the following 4 study units: (ii) Structural Analysis III; (iii Transportation Engineering III; (iv) Water Engineering III; (iv) Geotechnical Engineering III or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.
Rules:	A total of eight study units must be taken. All the study units for BTECV-WAT are compulsory. For project and theory modules, the students must register for the project and the theory components simultaneously unless a credit for any component has been approved by Unisa. Both the project component and the theory component must be passed to obtain full credit for the study unit.
Purpose statement:	To train civil engineering technologists for specialization in particular field of Civil Engineering, e.g. Water, Construction Management, Urban Planning, Environmental and Structural. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a professional Technologist in the field of Civil Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EEN4701	-	Environmental Engineering: Civil IV (Module A)	Co-requisite: EEN4702 & EEN4703 & EEN4704
EEN4702	-	Environmental Engineering: Civil IV (Module B)	Co-requisite: EEN4701 & EEN4703 & EEN4704
EEN4703	-	Environmental Engineering: Civil IV (Module A) Project	Co-requisite: EEN4701 & EEN4702 & EEN4704
EEN4704	-	Environmental Engineering: Civil IV (Module B) Project	Co-requisite: EEN4701 & EEN4702 & EEN4703
HDG4701	-	Hydrology IV (Theory)	Co-requisite: HDG4702
HDG4702	-	Hydrology IV (Project)	Co-requisite: HDG4701
HDL4701	-	Hydraulics IV (Theory)	Co-requisite: HDL4702
HDL4702	-	Hydraulics IV (Project)	Co-requisite: HDL4701
RDM4701	-	Reticulation Design and Management IV (Theory)	Co-requisite: RDM4702
RDM4702	-	Reticulation Design and Management IV (Project)	Co-requisite: RDM4701
SWM4701	-	Solid Waste Management IV (Theory)	Co-requisite: SWM4702
SWM4702	-	Solid Waste Management IV (Project)	Co-requisite: SWM4701
WTT4701	-	Water Treatment Technology IV	Co-requisite: WTT4702
WTT4702	-	Water Treatment Technology IV (Project)	Co-requisite: WTT4701
WWT4701	-	Waste Water Treatment Technology IV (Theory)	Co-requisite: WWT4702
WWT4702	-	Waste Water Treatment Technology IV (Project))	Co-requisite: WWT4701

CSETMyereg 2

Baccalaureus Technologiae: Engineering: Electrical

Stream: Clinical Engineering

Qualification code: BTELN - CEN | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62321

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements: A National Diploma: Engineering: Electrical (S4) with Mathematics III OR National Diploma in Electrical Engineering (T3) with Mathematics III PLUS the bridging subject: design project III (DPJ391U) OR National Higher Diploma in Electrical Engineering (T4) with Mathematics III, PLUS the bridging subject: Design project III (DPJ391U) OR nationally or internationally equivalent qualification or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.

Purpose statement: Students will be competent to design, implement and control production, testing, planning, construction, commissioning and maintenance in the field of Electrical Engineering by applying technical knowledge, engineering principles, innovative design, problem-solving techniques and managerial skills. They will be capable of exercising independent technological judgement and responsible decision making by taking into account the relevant financial, economic, commercial, social, environmental and statutory factors. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EMT4801	-	Engineering Mathematics IV	
IPR4701	-	Industrial Project IV	
Group B. Choose 6 from the following subjects. Theory and Practical modules count as 1 subject. Students may either do ENM401E or ENT401E.			
CAN4701	-	Circuit Analysis IV (Theory)	Co-requisite: CANPRA4
CANPRA4	-	Circuit Analysis IV (Practical)	Co-requisite: CAN4701
CET401J	-	Clinical Engineering Technology Management IV	
DSP4701	-	Digital Signal Processing IV	Co-requisite: DSPPRA4
DSPPRA4	-	Digital Signal Processing IV (Practical)	Co-requisite: DSP4701
ECM4701	-	Electronic Communication IV (Theory)	Co-requisite: ECMPRA4
ECMPRA4	-	Electronic Communication IV (Practical)	Co-requisite: ECM4701
ECT4701	-	Electronics IV (Theory)	Co-requisite: ECTPRA4
ECTPRA4	-	Electronics IV (Practical)	Co-requisite: ECT4701
ENM401E	-	Engineering Management IV	
ENT401I	-	Entrepreneurship IV (Option I)	
MEQ4701	-	Medical Equipment IV (Module A) (Theory)	Co-requisite: MEQPRA4
MEQPRA4	-	Medical Equipment IV (Module A) (Practical)	Co-requisite: MEQ4701
MWE4701	-	Microwave Engineering IV (Theory)	Co-requisite: MWEPRA4
MWEPRA4	-	Microwave Engineering IV (Practical)	Co-requisite: MWE4701
OPE4701	-	Opto-Electronics IV (Theory)	Co-requisite: OPEPRA4
OPEPRA4	-	Opto-Electronics IV (Practical)	Co-requisite: OPE4701
RAE4701	-	Radio Engineering IV (Theory)	Co-requisite: RAEPRA4
RAEPRA4	-	Radio Engineering IV (Practical)	Co-requisite: RAE4701

CSETMyereg

Baccalaureus Technologiae: Engineering: Electrical

Stream: Computer Systems

Qualification code: BTELN - COS | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62321

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements: A National Diploma: Engineering: Electrical (S4) with Mathematics III OR National Diploma in Electrical Engineering (T3) with Mathematics III PLUS the bridging subject: design project III (DPJ391U) OR National Higher Diploma in Electrical Engineering (T4) with Mathematics III, PLUS the bridging subject: Design project III (DPJ391U) OR nationally or internationally equivalent qualification or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.

Purpose statement: Students will be competent to design, implement and control production, testing, planning, construction, commissioning and maintenance in the field of Electrical Engineering by applying technical knowledge, engineering principles, innovative design, problem-solving techniques and managerial skills. They will be capable of exercising independent technological judgement and responsible decision making by taking into account the relevant financial, economic, commercial, social, environmental and statutory factors. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EMT4801	-	Engineering Mathematics IV	
IPR4701	-	Industrial Project IV	
Group B. Choose 6 from the following subjects. Note: Theory and Practical modules count as 1 subject. Students may either do ENM401E or ENT401E.			
CAN4701	-	Circuit Analysis IV (Theory)	Co-requisite: CANPRA4
CANPRA4	-	Circuit Analysis IV (Practical)	Co-requisite: CAN4701
DSP4701	-	Digital Signal Processing IV	Co-requisite: DSPPRA4
DSPPRA4	-	Digital Signal Processing IV (Practical)	Co-requisite: DSP4701
ECT4701	-	Electronics IV (Theory)	Co-requisite: ECTPRA4
ECTPRA4	-	Electronics IV (Practical)	Co-requisite: ECT4701
ENM401E	-	Engineering Management IV	
ENT401I	-	Entrepreneurship IV (Option I)	
ICT3631	-	Advanced Operating System Practice	Pre-requisite: ICT2631 (not applicable to BTELN COS)
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
OPE4701	-	Opto-Electronics IV (Theory)	Co-requisite: OPEPRA4
OPEPRA4	-	Opto-Electronics IV (Practical)	Co-requisite: OPE4701

CSETMyereg 20+

Baccalaureus Technologiae: Engineering: Electrical

Stream: Power Engineering

Qualification code: BTELN - PEN **NQF Exit level:** 7 **Total credits:** 120 **APS:** 50 **SAQA ID:** 62321

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements:	A National Diploma: Engineering: Electrical (S4) with Mathematics III OR National Diploma in Electrical Engineering (T3) with Mathematics III PLUS the bridging subject: Design project III (DPJ391U) OR National Higher Diploma in Electrical Engineering (T4) with Mathematics III, PLUS the bridging subject: Design project III (DPJ391U) OR nationally or internationally equivalent qualification or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.
Rules:	Students should note that from Group B, they may either do (CSY401E & CSY4PRA) or DCS401E and not both. Students may also do ENT401I or ENM401E but not both.
Purpose statement:	Students will be competent to design, implement and control production, testing, planning, construction, commissioning and maintenance in the field of Electrical Engineering by applying technical knowledge, engineering principles, innovative design, problem-solving techniques and managerial skills. They will be capable of exercising independent technological judgement and responsible decision making by taking into account the relevant financial, economic, commercial, social, environmental and statutory factors. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EMT4801	-	Engineering Mathematics IV	
IPR4701	-	Industrial Project IV	
Group B. Choose 6 from the following subjects: Theory & Practical module count as 1 subject.			
CAN4701	-	Circuit Analysis IV (Theory)	Co-requisite: CANPRA4
CANPRA4	-	Circuit Analysis IV (Practical)	Co-requisite: CAN4701
CSY4701	-	Control Systems IV (Theory)	Co-requisite: CSYPRA4
CSYPRA4	-	Control Systems IV(Practical)	Co-requisite: CSY4701
DCS401E	-	Digital Control Systems IV	
ECT4701	-	Electronics IV (Theory)	Co-requisite: ECTPRA4
ECTPRA4	-	Electronics IV (Practical)	Co-requisite: ECT4701
EMM4701	-	Electrical Machines IV (Theory)	Co-requisite: EMMPRA4
EMMPRA4	-	Electrical Machines IV (Practical)	Co-requisite: EMM4701
ENM401E	-	Engineering Management IV	
ENT401I	-	Entrepreneurship IV (Option I)	
HVE4701	-	High Voltage Engineering IV (Theory)	Co-requisite: HVEPRA4
HVEPRA4	-	High Voltage Engineering IV (Practical)	Co-requisite: HVE4701
OPE4701	-	Opto-Electronics IV (Theory)	Co-requisite: OPEPRA4
OPEPRA4	-	Opto-Electronics IV (Practical)	Co-requisite: OPE4701
PCE4701	-	Power Electronics IV (Theory)	Co-requisite: PCEPRA4
PCEPRA4	-	Power Electronics IV (Practical)	Co-requisite: PCE4701
PRT4701	-	Protection Technology IV (Theory)	Co-requisite: PRTPRA4
PRTPRA4	-	Protection Technology IV (Practical)	Co-requisite: PRT4701
PSY4701	-	Power Systems IV (Theory)	Co-requisite: PSYPRA4
PSYPRA4	-	Power Systems IV (Practical)	Co-requisite: PSY4701

CSETMyer

Baccalaureus Technologiae: Engineering: Electrical

Stream: Process Instrumentation

Qualification code: BTELN - PIN | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62321

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements: A National Diploma: Engineering: Electrical (S4) with Mathematics III OR National Diploma in Electrical Engineering (T3) with Mathematics III PLUS the bridging subject: Design project III (DPJ391U) OR National Higher Diploma in Electrical Engineering (T4) with Mathematics III, PLUS the bridging subject: Design project III (DPJ391U) OR nationally or internationally equivalent qualification or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.

Purpose statement: Students will be competent to design, implement and control production, testing, planning, construction, commissioning and maintenance in the field of Electrical Engineering by applying technical knowledge, engineering principles, innovative design, problem-solving techniques and managerial skills. They will be capable of exercising independent technological judgement and responsible decision making by taking into account the relevant financial, economic, commercial, social, environmental and statutory factors. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EMT4801	-	Engineering Mathematics IV	
IPR4701	-	Industrial Project IV	
Group B. Choose 6 from the following subjects. Note: Theory and Practical modules count as 1 subject. Students may either do ENM401E or ENT401E.			
CAN4701	-	Circuit Analysis IV (Theory)	Co-requisite: CANPRA4
CANPRA4	-	Circuit Analysis IV (Practical)	Co-requisite: CAN4701
CSY4701	-	Control Systems IV (Theory)	Co-requisite: CSYPRA4
CSYPRA4	-	Control Systems IV(Practical)	Co-requisite: CSY4701
DCS401E	-	Digital Control Systems IV	
DSP4701	-	Digital Signal Processing IV	Co-requisite: DSPPRA4
DSPPRA4	-	Digital Signal Processing IV (Practical)	Co-requisite: DSP4701
ECT4701	-	Electronics IV (Theory)	Co-requisite: ECTPRA4
ECTPRA4	-	Electronics IV (Practical)	Co-requisite: ECT4701
ENM401E	-	Engineering Management IV	
ENT401I	-	Entrepreneurship IV (Option I)	
OPE4701	-	Opto-Electronics IV (Theory)	Co-requisite: OPEPRA4
OPEPRA4	-	Opto-Electronics IV (Practical)	Co-requisite: OPE4701
PRI4701	-	Process Instrumentation IV (Theory)	Co-requisite: PRIPRA4
PRIPRA4	-	Process Instrumentation IV (Practical)	Co-requisite: PRI4701

CSETMyereg 2

Baccalaureus Technologiae: Engineering: Electrical

Stream: Telecommunication

Qualification code: BTELN - TEL | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62321

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements: A National Diploma: Engineering: Electrical (S4) with Mathematics III OR National Diploma in Electrical Engineering (T3) with Mathematics III PLUS the bridging subject: design project III (DPJ391U) OR National Higher Diploma in Electrical Engineering (T4) with Mathematics III, PLUS the bridging subject: Design project III (DPJ391U) OR nationally or internationally equivalent qualification or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.

Purpose statement: Students will be competent to design, implement and control production, testing, planning, construction, commissioning and maintenance in the field of Electrical Engineering by applying technical knowledge, engineering principles, innovative design, problem-solving techniques and managerial skills. They will be capable of exercising independent technological judgement and responsible decision making by taking into account the relevant financial, economic, commercial, social, environmental and statutory factors. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EMT4801	-	Engineering Mathematics IV	
IPR4701	-	Industrial Project IV	
Group B. Choose 6 from the following subjects. Note: Theory and Practical modules count as 1 subject. Students may either do ENM401E or ENT401E.			
CAN4701	-	Circuit Analysis IV (Theory)	Co-requisite: CANPRA4
CANPRA4	-	Circuit Analysis IV (Practical)	Co-requisite: CAN4701
DSP4701	-	Digital Signal Processing IV	Co-requisite: DSPPRA4
DSPPRA4	-	Digital Signal Processing IV (Practical)	Co-requisite: DSP4701
ECM4701	-	Electronic Communication IV (Theory)	Co-requisite: ECMPRA4
ECMPRA4	-	Electronic Communication IV (Practical)	Co-requisite: ECM4701
ECT4701	-	Electronics IV (Theory)	Co-requisite: ECTPRA4
ECTPRA4	-	Electronics IV (Practical)	Co-requisite: ECT4701
ENM401E	-	Engineering Management IV	
ENT401I	-	Entrepreneurship IV (Option I)	
MWE4701	-	Microwave Engineering IV (Theory)	Co-requisite: MWEPRA4
MWEPRA4	-	Microwave Engineering IV (Practical)	Co-requisite: MWE4701
OPE4701	-	Opto-Electronics IV (Theory)	Co-requisite: OPEPRA4
OPEPRA4	-	Opto-Electronics IV (Practical)	Co-requisite: OPE4701
RAE4701	-	Radio Engineering IV (Theory)	Co-requisite: RAEPRA4
RAEPRA4	-	Radio Engineering IV (Practical)	Co-requisite: RAE4701
SCM4701	-	Satellite Communications IV (Theory)	Co-requisite: SCMPRA4 or SCM4PRA
SCMPRA4	-	Satellite Communications IV (Practical)	Co-requisite: SCM4701 or SCM401E

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Baccalaureus Technologiae: Engineering: Chemical

Qualification code: BTENC **NQF Exit level:** 7 **Total credits:** 120 **APS:** 50 **SAQA ID:** 62319

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements:	National Diploma: Engineering (S4) in the relevant discipline OR National Higher Diploma in Chemical Engineering (T4), PLUS the following bridging subjects: Process Control III (PCT3601 or PCT381H), which is the prerequisite for PCT401C; National Diploma: Chemical Engineering (T3 diploma: 3 semesters Uot training plus 3 semesters work integrated learning service training) PLUS the following 4 bridging units: Process Control III (PCT3601 or PCT381H); Chemical Engineering Technology III (Module B) (CEM321B and CEMPRB3 or CEM3PRB); Thermodynamics: Chemical Engineering III (TDC341P or TDC3601); Chemical Process Design: Principles III (CPD371S or CPD3601); Foreign Chemical Engineering qualifications are considered but subject to SAQA evaluation and departmental approval or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification.
Rules:	Important: A student may only register for BTech: Engineering: Chemical if he or she: (a) can identify and complete a research project for Project: Chemical Engineering IV (PCE401C),(b) has access to a computer simulation design programme/package for Chemical Process Design IV : Plant Design (Module B) such as ASPEN,CHEMCAD,PROII, etc. and (c) can provide a mentor for each of the above study units respectively. Students who register for PCE401C and CPD4702 will be required to do an oral presentation at Unisa's Science campus in Florida, Johannesburg, as part of the assessment for these modules. The practical component must be done at Unisa's Science campus in Florida, Johannesburg. Access to a personal computer is compulsory for the Practical.CEM4703 has been replaced with SEP4701, students who have completed CEM4703 may not register for SEP4701. PCT401C has been replaced with PRC4701, students who have done PCT401C do not need to do PRC4701
Purpose statement:	Chemical engineering is concerned with the manufacturing of chemicals on an industrial scale as well as with the industrial processes that convert raw materials into products that have higher economic value. In a particular manufacturing environment, there is usually a chemical engineering team. This team is usually led by a degreed Chemical Engineer, usually assisted by a Chemical Engineering Technologist or a Chemical Engineering Technician. They all obtain their qualifications from a university of technology or a university. The technologist has obtained a BTech degree and the technician a National Diploma. The team is qualified to research, develop, design, construct and operate the plants required to make any processed product. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering

Module			Pre/Co-requisite
Group A. Compulsory			
CEM4701	-	Chemical Engineering Technology IV: Fluid Flow (Module A)	
CEM4702	-	Chemical Engineering Technology IV: Heat and Mass (Module B)	
CHE4PRA	-	Chemical Engineering IV (Practical)	Co-requisite: CPD4701, CEM4701, CEM4702 & CEM4703 or SEP4701
CPD4701	-	Chemical Process Design IV: Equipment Design (Module A)	Co-requisite: CEM4702 & CEM4703 or SEP4701
CPD4702	-	Chemical Process Design IV: Plant Design (Module B)	Co-requisite: CPD4701& RTE4701
MAT3700	-	Mathematics III (Engineering)	Pre-requisite: MAT2691
PCE401C	-	Project: Chemical Engineering IV	Co-requisite: CEM4701 & CEM4702 & CPD4701 & CEM4703 or SEP4701 & PCT401C or PRC4701 & RTE4701
PCI401C	-	Production Engineering: Chemical Industry IV	
PRC4701	-	Process Control IV	Co-requisite: MAT3700
RTE4701	-	Reactor Technology IV	Co-requisite: CEM4702
SEP4701	-	Separation Principles II	Co-requisite: CEM4702
Group B. Optional Study Unit			
ENT401I	-	Entrepreneurship IV (Option I)	

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Baccalaureus Technologiae: Engineering: Industrial

Qualification code: BTENI | **NQF Exit level:** 7 | **Total credits:** 120 | **APS:** 50 | **SAQA ID:** 62322

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements:	National Higher Diploma: Industrial Engineering OR a National Diploma: Engineering: Industrial OR a National Diploma: Industrial Engineering (T3-diploma) as well as the following study units from the National Diploma: Engineering: Industrial (S4): (i) Management Practice IV (MGP437U); (ii) Automation III (ATO331Q); (iii) Operational Research III (OPR371S); (iv) Financial Management (FMA401V); (v) Quality Assurance II (QAS221U). Students who hold any approved National Diploma in Engineering or a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification, other than the ND: Industrial Engineering, students who wants to study BTech: Industrial Engineering, must first complete the Higher Certificate: Industrial Engineering successfully. Refer to the Short Learning Programmes Calendar.
Purpose statement:	Persons achieving this qualification should be competent in leading programmes involving productivity improvement, integrated manufacturing systems, operating information systems, and those of project and logistics management. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A.			
ENT401I	-	Entrepreneurship IV (Option I)	
INY401I	-	Information Systems IV	
LGE401I	-	Logistics Engineering IV	
PRE401I	-	Project Engineering IV	
PRT401I	-	Production Technology IV	
PTR401I	-	Project Research IV	
QAS401I	-	Quality Assurance IV	
SDY401I	-	Systems Dynamics IV	

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Baccalaureus Technologiae: Engineering: Mechanical

Qualification code: BTMEE **NQF Exit level:** 7 **Total credits:** 120 **APS:** 50 **SAQA ID:** 62323

This qualification will be presented using both online and distance learning modes.

Qualification offered until 2021, and ONLY for students previously registered for this qualification.

Admission requirements: National Diploma: Engineering: Mechanical (S4 diploma); or a National Higher Diploma: Mechanical Engineering (T4 diploma); or a National Diploma: Mechanical Engineering (T3 diploma) with at least 2 of the following S4 subjects: Theory of Machines III; Applied Strength of Materials III, Hydraulic Machines III, Steam Plant III and their respective practical components OR a minimum of 50% of the completed qualification that satisfy the vocational requirement of the specific B-Tech qualification. Foreign Mechanical Engineering Qualifications are considered but subject to SAQA evaluation and departmental approval.

Purpose statement: Persons achieving this qualification should be able to independently integrate mechanical engineering principles and specialist knowledge, apply these to determine appropriate ways of approaching activities and establish and use criteria to judge processes and outcomes. This qualification is intended for engineering practitioners in the industry. A qualified person with sufficient experience will be able to register with the Engineering Council of South Africa (ECSA) as a Professional Technologist in this field of Engineering.

Module			Pre/Co-requisite
Group A. Compulsory			
EDP401M	-	Engineering Design Project IV	
Group B. Choose any three of the following groups (B, C, D, E , F)			
AUC401M	-	Automatic Control IV	Pre-requisite: MOM3602 & MOMPRB3
MOM401M	-	Mechanics of Machines IV	Pre-requisite: MOM3602 & MOMPRB3
Group C.			
SOM401M	-	Strength of Materials IV	Pre-requisite: SOM3602 & SOMPRB3
STA401M	-	Stress Analysis IV	Pre-requisite: SOM3602 & SOMPRB3
Group D.			
FMA401M	-	Fluid Mechanics IV	Pre-requisite: FMA3602 & FMAPRB3
TMA401M	-	Turbo Machines IV	Pre-requisite: FMA3602 & FMAPRB3
Group E.			
RAC401M	-	Refrigeration and Air Conditioning IV	Pre-requisite: THD3602 & THDPRB3
THD401M	-	Thermodynamics IV	Pre-requisite: THD3602 & THDPRB3
Group F.			
MMN101M	-	Maintenance Management	
PRT401I	-	Production Technology IV	

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BACHELOR DEGREES

Bachelor of Science

Stream: Applied Mathematics and Computer Science Stream

Qualification code: 98801 - AMC | **NQF Exit level:** 7 | **Total credits:** 360 | **APS:** 25 | **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, at a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for COS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1513	-	Applied Linear Algebra	
APM1514	-	Mathematical Modelling	
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
COS1512	-	Introduction to Programming II	Pre-requisite: COS1511 (or XOS1511)
COS1521	-	Computer Systems: Fundamental Concepts	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			

APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level

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Bachelor of Science

Stream: Applied Mathematics and Physics Stream

Qualification code: 98801 - AMP | **NQF Exit level:** 7 | **Total credits:** 360 | **APS:** 25 | **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new NSC) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for COS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1513	-	Applied Linear Algebra	
APM1514	-	Mathematical Modelling	
COS1511	-	Introduction to Programming I	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
PHY1505	-	Mechanics (Physics)	
PHY1506	-	Electromagnetism and Heat (Fisika)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1612	-	Mechanics II	Pre-requisite: MAT1512 (or XAT1512) & PHY1505 (or XHY1505)
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY1604	-	Modern Physics	Co-requisite: PHY1505
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2604	-	Physics Practical Work II	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512) Co-requisite: PHY2601, PHY2602 & PHY2606
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)

Third level

Module	Pre/Co-requisite

Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
Group B. Choose 1 from the following			
PHY3706	-	Physics Practical Work III	Pre-requisite: PHY2604
PHY3709	-	Computational Modeling	Co-requisite: APM2611

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Bachelor of Science

Stream: Applied Mathematics and Statistics Stream

Qualification code: 98801 - AMS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new NSC) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for COS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1513	-	Applied Linear Algebra	
APM1514	-	Mathematical Modelling	
COS1511	-	Introduction to Programming I	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
STA1501	-	Descriptive Statistics and Probability	
STA1502	-	Statistical Inference I	Co-requisite: STA1501
STA1503	-	Distribution Theory I	Pre-requisite: STA1501 Co-requisite: STA1502 & (MAT1512 or DSC1620 or DSC1520)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: Chemistry and Applied Mathematics Stream

Qualification code: 98801 - CAM **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1514	-	Mathematical Modelling	
APM1612	-	Mechanics II	Pre-requisite: MAT1512 (or XAT1512) & PHY1505 (or XHY1505)
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
COS1501	-	Theoretical Computer Science I	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1505	-	Mechanics (Physics)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level

APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level

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Bachelor of Science

Stream: Chemistry and Physics Stream

Qualification code: 98801 - CAP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
PHY1505	-	Mechanics (Physics)	
PHY1506	-	Electromagnetism and Heat (Fisika)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
PHY1604	-	Modern Physics	Co-requisite: PHY1505
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621

CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611

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Bachelor of Science

Stream: Chemistry and Statistics Stream

Qualification code: 98801 - CAS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
STA1501	-	Descriptive Statistics and Probability	
STA1502	-	Statistical Inference I	Co-requisite: STA1501
STA1503	-	Distribution Theory I	Pre-requisite: STA1501 Co-requisite: STA1502 & (MAT1512 or DSC1620 or DSC1520)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: Chemistry and Computer Science Stream

Qualification code: 98801 - CCS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for COS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
COS1512	-	Introduction to Programming II	Pre-requisite: COS1511 (or XOS1511)
COS1521	-	Computer Systems: Fundamental Concepts	
MAT1512	-	Calculus A	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2626	-	Computer Networks I	
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	

Third level

Module	Pre/Co-requisite

Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)

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Bachelor of Science

Stream: Chemistry and Information Systems Stream

Qualification code: 98801 - CIS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for INF1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
INF1505	-	Introduction to Business Information Systems	
INF1511	-	Visual Programming I	
INF1520	-	Human-Computer Interaction I	
MAT1512	-	Calculus A	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
EWS2601	-	Engaging with Society: Meeting the Challenges of a Changing World	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)

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Bachelor of Science

Stream: General

Qualification code: 98801 - GEN **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Rules:

The curriculum for the BSC degree consists of:a.THIRTY MODULESb.At least TWENTY-FOUR of the thirty modules must be from the list below.c.Not more than EIGHT of the thirty modules may be on the first level (NQFlevel 5).d.At least TEN modules must be on third level (NQF level 7).e.Not more than THREE course on first year level (the equivalent of 6modules) maybe in Subjects from the curricula of first Bachelor's degreesof other colleges.f.Refer to my Modules. for the Major subject combination

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Compulsory.			
AGE1501	-	Introduction to Archaeology	
AGE1502	-	The Archaeology of Southern Africa	
APM1513	-	Applied Linear Algebra	
APM1514	-	Mathematical Modelling	
APM1612	-	Mechanics II	Pre-requisite: MAT1512 (or XAT1512) & PHY1505 (or XHY1505)
APY1501	-	Anthropology in a Diverse World	
AST1534	-	Spherical Astronomy and Kepler Orbits	
AST1631	-	General Introduction to Astronomy	
BLG1502	-	Animal and Plant Diversity	
BLG1603	-	Biology Practical	Co-requisite: BLG1501 (or XLG1501) & BLG1502 (or XLG1502)
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
COS1512	-	Introduction to Programming II	Pre-requisite: COS1511 (or XOS1511)
COS1521	-	Computer Systems: Fundamental Concepts	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
FAC1502	-	Financial Accounting Principles, Concepts and Procedures	
GEL1503	-	Environmental Geology	
GGH1503	-	Our Living Earth	
INF1505	-	Introduction to Business Information Systems	
INF1511	-	Visual Programming I	
INF1520	-	Human-Computer Interaction I	
MAT1503	-	Linear Algebra	
MAT1510	-	Precalculus Mathematics A	
MAT1511	-	Precalculus Mathematics B	
MAT1512	-	Calculus A	
PHY1502	-	Elementary Electromagnetism and Heat	
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
PHY1505	-	Mechanics (Physics)	
PHY1506	-	Electromagnetism and Heat (Fisika)	
PHY1604	-	Modern Physics	Co-requisite: PHY1505
STA1501	-	Descriptive Statistics and Probability	
STA1502	-	Statistical Inference I	Co-requisite: STA1501

STA1503	-	Distribution Theory I	Pre-requisite: STA1501 Co-requisite: STA1502 & (MAT1512 or DSC1620 or DSC1520)

Second level

Module			Pre/Co-requisite
Compulsory.			
AGE2601	-	Archaeological Fieldwork Techniques and Analytical Methods	Recommendation: AGE1501
AGE2602	-	African Archaeology	
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
APY2601	-	Anthropological Theory in Practice	
AST2651	-	The Structure and Evolution of Stars	Pre-requisite: PHY1505 (or XHY1505), PHY1506 (or XHY1506) & MAT1512 (or XAT1512) Co-requisite: PHY1604
AST2652	-	The Structure and Evolution of Galaxies	Pre-requisite: PHY1505 (or XHY1505), PHY1506 (or XHY1506) & MAT1512 (or XAT1512) Co-requisite: PHY1604
AST2655	-	Astronomy Practical	Pre-requisite: PHY1503 or PHY1038 Co-requisite: AST1534
BCH2601	-	Introductory Biochemistry	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
BCH2602	-	Bioenergetics	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
BCH2603	-	Biopolymers of Heredity	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
BCH2604	-	Biochemistry (Practical)	Pre-requisite: CHE1501 or CHE1502
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2626	-	Computer Networks I	
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
DSC1630	-	Introductory Financial Mathematics	
DSC2602	-	Rational Decision Making	Pre-requisite: DSC1510 or DSC1520 or DSC1620 or OPS101G or QMG101P or QMS101D
DSC2604	-	Financial Modelling	Pre-requisite: DSC1630 or QMG102Q
DSC2605	-	Linear Mathematical Programming	Pre-requisite: DSC1510 or DSC1520 or DSC1620 or OPS101G or QMG101P or QMS101D
DSC2606	-	Nonlinear Mathematical Programming	Pre-requisite: DSC1510 or DSC1520 or DSC1620 or OPS101G or QMG101P or QMS101D
GGH2606	-	Geography of Tourism	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)

PHY2604	-	Physics Practical Work II	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512) Co-requisite: PHY2601, PHY2602 & PHY2606
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
PYC2601	-	Personality Theories	
PYC2602	-	Child and Adolescent Development	
PYC2603	-	Adulthood and Maturity	
PYC2605	-	HIV/AIDS Care and Counselling	
PYC2606	-	Basic Measurement and Questionnaire Design	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Third level

Module			Pre/Co-requisite
Compulsory.			
AGE3701	-	The Interpretation of Archaelogical Data	
AGE3702	-	Applied Archaeology: Heritage Conservation, Cultural Resource Management and Archaeotourism	
AGE3705	-	Archaelogy and Fossils: The Study of Human Evolution	
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
BCH3701	-	Enzymology	Co-requisite: BCH2601
BCH3702	-	Advanced Metabolism	Co-requisite: BCH2602
BCH3703	-	Molecular Genetics	Co-requisite: BCH2603
BCH3704	-	Biochemistry (Practical)	Pre-requisite: BCH2604 Co-requisite: Any two of the following: BCH3701, BCH3702, BCH3703
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3712	-	Computer Graphics	Pre-requisite: COS2611 & MAT1503 (or XAT1503)
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
DSC3702	-	Optimisation of Resources	Pre-requisite: DSC2602 and (DSC2601 or DSC2605 & DSC2606)
DSC3703	-	Simulation	Pre-requisite: DSC2602 and (DSC2601 or DSC2605 & DSC2606)
DSC3704	-	Models for Strategic Decision-Making	Pre-requisite: DSC2602 and (DSC2601 or DSC2605 & DSC2606)
DSC3705	-	Financial Risk Modelling	Pre-requisite: DSC2602 & DSC2604 and (DSC2601 or DSC2605 & DSC2606)
DSC3706	-	Selected Topics for Operations Research	Pre-requisite: DSC2602 and (either DSC2601 or DSC2605 & DSC2606)
DSC3707	-	Mathematical Modelling II	Pre-requisite: DSC2602 and (either DSC2601 or DCS2605 & DSC2606)
GGH3701	-	State of the Environment in Southern Africa	
GGH3702	-	Spatial Economic Development	
GGH3703	-	Introduction to Geographical Information Systems	
GGH3704	-	Development of Urban Space	
GGH3705	-	Assessing Environmental Impacts	
GGH3707	-	Ecotourism	
GGH3708	-	Environmental Awareness and Responsibility	
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603

INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3702	-	Abstract Algebra	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3706	-	Physics Practical Work III	Pre-requisite: PHY2604
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611
PYC3701	-	Social Psychology	
PYC3702	-	Abnormal Behaviour and Mental Health	
PYC3703	-	Cognition: Thinking, Memory and Problem Solving	
PYC3704	-	Psychological Research	Pre-requisite: RSC2601 or RSC201H (not applicable to 98053 - PPG and 98053 - XPG)
PYC3705	-	Transformative Counselling Encounters	
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3705	-	Sampling Techniques	Pre-requisite: STA2601
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

CSETMyereg 20

Bachelor of Science

Stream: Mathematics and Chemistry Stream

Qualification code: 98801 - MAC **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1501	-	General Chemistry IA	
CHE1502	-	General Chemistry IB	Pre-requisite: CHE1501(or XHE1501)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
COS1501	-	Theoretical Computer Science I	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
STA1510	-	Basic Statistics	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623

CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Applied Mathematics Stream

Qualification code: 98801 - MAM **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1513	-	Applied Linear Algebra	
APM1514	-	Mathematical Modelling	
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1505	-	Mechanics (Physics)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3702	-	Abstract Algebra	Pre-requisite: Any 2 APM or MAT modules on second

			level
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Physics Stream

Qualification code: 98801 - MAP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1511	-	Introduction to Programming I	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
PHY1505	-	Mechanics (Physics)	
PHY1506	-	Electromagnetism and Heat (Fisika)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY1604	-	Modern Physics	Co-requisite: PHY1505
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level

PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611

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Bachelor of Science

Stream: Mathematics and Statistics Stream

Qualification code: 98801 - MAS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1501	-	Theoretical Computer Science I	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
STA1501	-	Descriptive Statistics and Probability	
STA1502	-	Statistical Inference I	Co-requisite: STA1501
STA1503	-	Distribution Theory I	Pre-requisite: STA1501 Co-requisite: STA1502 & (MAT1512 or DSC1620 or DSC1520)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second

			level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: Mathematics and Computer Science Stream

Qualification code: 98801 - MCS | **NQF Exit level:** 7 | **Total credits:** 360 | **APS:** 25 | **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for COS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
COS1512	-	Introduction to Programming II	Pre-requisite: COS1511 (or XOS1511)
COS1521	-	Computer Systems: Fundamental Concepts	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC

			& 98801-XAC)
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Information Systems Stream

Qualification code: 98801 - MIS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) and have passed Computer Studies (NSC) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for EUP1501 before they register for INF1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1501	-	Theoretical Computer Science I	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
INF1505	-	Introduction to Business Information Systems	
INF1511	-	Visual Programming I	
INF1520	-	Human-Computer Interaction I	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603

INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Statistics and Physics Stream

Qualification code: 98801 - STP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:

A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Purpose statement:

The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
PHY1505	-	Mechanics (Physics)	
PHY1506	-	Electromagnetism and Heat (Fisika)	
STA1501	-	Descriptive Statistics and Probability	
STA1502	-	Statistical Inference I	Co-requisite: STA1501
STA1503	-	Distribution Theory I	Pre-requisite: STA1501 Co-requisite: STA1502 & (MAT1512 or DSC1620 or DSC1520)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY1604	-	Modern Physics	Co-requisite: PHY1505
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602

PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: Applied Mathematics and Computer Science (Extended Programme)

Qualification code: 98801 - XAC **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, at a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XOS1501	-	Theoretical Computer Science I (Extended)	
XOS1511	-	Introduction to Programming I (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
XOS1512	-	Introduction to Programming II (Extended)	Pre-requisite: XOS1511 (or COS1511)
XOS1521	-	Computer Systems: Fundamental Concepts(Extended)	
XPM1513	-	Applied Linear Algebra (Extended)	
XPM1514	-	Mathematical Modelling (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level

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Bachelor of Science

Stream: Applied Mathematics and Physics Stream (Extended Programme)

Qualification code: 98801 - XAP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements: A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Rules: In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.

Purpose statement: The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHY1505	-	Mechanics (Physics)(Extended)	
XOS1511	-	Introduction to Programming I (Extended)	
XPM1513	-	Applied Linear Algebra (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1612	-	Mechanics II	Pre-requisite: MAT1512 (or XAT1512) & PHY1505 (or XHY1505)
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
XHY1506	-	Electromagnetism and Heat (Physics) (Extended)	
XHY1604	-	Modern Physics (Extended)	Co-requisite: PHY1505 (or XHY1505)
XPM1514	-	Mathematical Modelling (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2604	-	Physics Practical Work II	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512) Co-requisite: PHY2601, PHY2602 & PHY2606
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
Group B. Choose 1 module from the following			
PHY3706	-	Physics Practical Work III	Pre-requisite: PHY2604
PHY3709	-	Computational Modeling	Co-requisite: APM2611

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Bachelor of Science

Stream: Applied Mathematics and Statistics Stream (Extended Programme)

Qualification code: 98801 - XAS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements: A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Rules: In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.

Purpose statement: The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XPM1513	-	Applied Linear Algebra (Extended)	
XTA1501	-	Descriptive Statistics and Probability (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
XOS1511	-	Introduction to Programming I (Extended)	
XPM1514	-	Mathematical Modelling (Extended)	
XTA1502	-	Statistical Inference I (Extended)	Co-requisite: XTA1501 (or STA1501)
XTA1503	-	Distribution Theory I (Extended)	Pre-requisite: XTA1501 (or STA1501) Co-requisite: XTA1502 (or STA1502) & (MAT1512(or XAT1512) or DSC1520 or DSC1620)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)

STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: Chemistry and Computer Science Stream (Extended Programme)

Qualification code: 98801 - XCC **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHE1501	-	General Chemistry IA (Extended)	
XOS1501	-	Theoretical Computer Science I (Extended)	
XOS1511	-	Introduction to Programming I (Extended)	
XOS1521	-	Computer Systems: Fundamental Concepts(Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
PLS2601	-	Critical Reasoning	
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XOS1512	-	Introduction to Programming II (Extended)	Pre-requisite: XOS1511 (or COS1511)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)

COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2626	-	Computer Networks I	
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
PLS2607	-	Philosophy of Science	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)

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Bachelor of Science

Stream: Chemistry and Information Systems Stream (Extended Programme)

Qualification code: 98801 - XCI **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) with at least 50% in the language of teaching and learning and 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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 with at least 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 with at least 50%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XNF1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHE1501	-	General Chemistry IA (Extended)	
XNF1505	-	Introduction to Business Information Systems (Extended)	
XNF1511	-	Visual Programming I (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XNF1520	-	Human-Computer Interaction I (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
EWS2601	-	Engaging with Society: Meeting the Challenges of a Changing World	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or

			XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)

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Bachelor of Science

Stream: Chemistry and Applied Mathematics Stream (Extended Programme)

Qualification code: 98801 - XCM **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHE1501	-	General Chemistry IA (Extended)	
XHY1505	-	Mechanics (Physics)(Extended)	
XPM1514	-	Mathematical Modelling (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM1612	-	Mechanics II	Pre-requisite: MAT1512 (or XAT1512) & PHY1505 (or XHY1505)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XOS1501	-	Theoretical Computer Science I (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)

MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level

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Bachelor of Science

Stream: Chemistry and Physics Stream (Extended Programme)

Qualification code: 98801 - XCP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements: A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Rules: In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.

Purpose statement: The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHE1501	-	General Chemistry IA (Extended)	
XHY1505	-	Mechanics (Physics)(Extended)	
XHY1506	-	Electromagnetism and Heat (Physics) (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XHY1604	-	Modern Physics (Extended)	Co-requisite: PHY1505 (or XHY1505)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or

			XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
PLS2607	-	Philosophy of Science	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611

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Bachelor of Science

Stream: Chemistry and Statistics Stream (Extended Programme)

Qualification code: 98801 - XCS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements: A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Rules: In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.

Purpose statement: The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHE1501	-	General Chemistry IA (Extended)	
XTA1501	-	Descriptive Statistics and Probability (Extended)	
XTA1502	-	Statistical Inference I (Extended)	Co-requisite: XTA1501 (or STA1501)

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XTA1503	-	Distribution Theory I (Extended)	Pre-requisite: XTA1501 (or STA1501) Co-requisite: XTA1502 (or STA1502) & (MAT1512(or XAT1512) or DSC1520 or DSC1620)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or

			XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: General (Extended Programme)

Qualification code: 98801 - XGE | **NQF Exit level:** 7 | **Total credits:** 360 | **APS:** 20 | **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	The curriculum for the BSC degree consists of: a. THIRTY MODULES b. At least TWENTY-FOUR of the thirty modules must be from the list below. c. Not more than EIGHT of the thirty modules may be on the first level (NQF level 5). d. At least TEN modules must be on third level (NQF level 7). e. Not more than THREE course on first year level (the equivalent of 6 modules) maybe in Subjects from the curricula of first Bachelor's degrees of other colleges. f. Refer to my Modules for the Major subject combination g. In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory. Choose 5 modules			
XAT1503	-	Linear Algebra (Extended)	
XAT1510	-	Precalculus Mathematics A (Extended)	
XAT1511	-	Precalculus Mathematics B (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XGH1501	-	Know Your World: Introduction to Geography (Extended)	
XGH1502	-	World Issues: A Geographical Perspective (Extended)	
XGH1503	-	Our Living Earth (Extended)	
XHE1501	-	General Chemistry IA (Extended)	
XHY1501	-	Elementary Mechanics (Extended	Co-requisite: AMC1PRA (only applicable to NDECI), MCA1PRA (only applicable to NDEEN-MEC, NDEID, NDEMC)
XHY1502	-	Elementary Electromagnetism and Heat (Extended)	
XHY1505	-	Mechanics (Physics)(Extended)	
XHY1506	-	Electromagnetism and Heat (Physics) (Extended)	
XLG1501	-	Basic Biology (Extended)	
XNF1511	-	Visual Programming I (Extended)	
XNF1520	-	Human-Computer Interaction I (Extended)	
XOL1501	-	Animal Diversity I (Extended)	
XOS1501	-	Theoretical Computer Science I (Extended)	
XOS1511	-	Introduction to Programming I (Extended)	
XOS1521	-	Computer Systems: Fundamental Concepts(Extended)	
XOT1501	-	Plant Structure: Cytology, Morphology & Anatomy (Extended)	
XPM1513	-	Applied Linear Algebra (Extended)	
XPM1514	-	Mathematical Modelling (Extended)	
XST1534	-	Spherical Astronomy and Kepler's Orbits (Extended)	
XTA1501	-	Descriptive Statistics and Probability (Extended)	
XTA1502	-	Statistical Inference I (Extended)	Co-requisite: XTA1501 (or STA1501)
XTA1510	-	Basic Statistics (Extended)	
ZOL1603	-	Zoology I (Practical)	Co-requisite: ZOL1501 (or XOL1501) or ZOL1502 (or XOL1502)

Second level

Module	Pre/Co-requisite
Group A. Compulsory. Choose 5 modules	

AGE1501	-	Introduction to Archaeology	
APM1612	-	Mechanics II	Pre-requisite: MAT1512 (or XAT1512) & PHY1505 (or XHY1505)
APY1501	-	Anthropology in a Diverse World	
BLG1603	-	Biology Practical	Co-requisite: BLG1501 (or XLG1501) & BLG1502 (or XLG1502)
BOT1603	-	Botany I (Practical)	Co-requisite: BOT1501 (or XOT1501) or BOT1502 (or XOT1502)
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
CLA1501	-	Commercial Law IA	
CLA1502	-	Commercial Law IB	
COM1501	-	Fundamentals of Communication	
COM1502	-	Communication Contexts and Applications	
DSC1520	-	Quantitative Modelling I	
DSC1630	-	Introductory Financial Mathematics	
ECS1501	-	Economics IA	
ECS1601	-	Economics IB	Pre-requisite: ECS1501 or ECS1016
ENN103F	-	English for Academic Purposes	
ENN1504	-	Practising Workplace English	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
FAC1502	-	Financial Accounting Principles, Concepts and Procedures	
GEL1503	-	Environmental Geology	
IOP1501	-	Psychological Processes in Work Context	
IOP1502	-	Customer Service in Tourism	
IOP1503	-	Environmental Psychology	
IOP1504	-	Workforce Diversity	
IOP1601	-	Personality in Work Context	Pre-requisite: IOP1501 or IOP101M
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MNB1501	-	Business Management IA	
MNB1601	-	Business Management IB	Pre-requisite: MNB1501 or MNB101D (except for qualification code 90017)
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
PHY1604	-	Modern Physics	Co-requisite: PHY1505
PYC1501	-	Basic Psychology	
PYC1502	-	Psychology in Society	
SOC1501	-	Community, Society and Inequality in a Globalised World: Introduction to Sociology	
SOC1502	-	Understanding South Africa: Families, Education, Identities and Inequality	
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XHY1604	-	Modern Physics (Extended)	Co-requisite: PHY1505 (or XHY1505)
XLG1502	-	Animal & Plant Diversity (Extended)	Pre-requisite: XLG1501
XOL1502	-	Animal Diversity II (Extended)	Pre-requisite: XOL1501
XOS1512	-	Introduction to Programming II (Extended)	Pre-requisite: XOS1511 (or COS1511)
XOT1502	-	Plant Biodiversity and Environmental Botany (Extended)	Pre-requisite: XOT1501
XTA1503	-	Distribution Theory I (Extended)	Pre-requisite: XTA1501 (or STA1501) Co-requisite: XTA1502 (or STA1502) & (MAT1512(or XAT1512) or DSC1520 or DSC1620)
XTA1610	-	Introduction to Statistics (Extended)	
ZOL2601	-	Comparative Animal Physiology	Co-requisite: ZOL1501 (or XOL1501) or ZOL1502 (or XOL1502)
ZOL2602	-	Cytogenetics and Embryology	Co-requisite: ZOL1501 (or XOL1501) or ZOL1502 (or XOL1502)
ZOL2603	-	Theory of Evolution	Co-requisite: ZOL1501 (or XOL1501) or ZOL1502 (or XOL1502)
ZOL2604	-	Zoology II (Practical)	Pre-requisite: ZOL1603 & (CHE1501(XHE1501) or CHE1502(XHE1502)) Co-requisite: Any two of the following: ZOL2601, ZOL2602 & ZOL2603

Third level

Module			Pre/Co-requisite
Group A. Compulsory. Choose 10 modules			
AGE2601	-	Archaeological Fieldwork Techniques and Analytical Methods	Recommendation: AGE1501
AGE2602	-	African Archaeology	
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
AST2651	-	The Structure and Evolution of Stars	Pre-requisite: PHY1505 (or XHY1505), PHY1506 (or XHY1506) & MAT1512 (or XAT1512) Co-requisite: PHY1604
AST2652	-	The Structure and Evolution of Galaxies	Pre-requisite: PHY1505 (or XHY1505), PHY1506 (or XHY1506) & MAT1512 (or XAT1512) Co-requisite: PHY1604
AST2655	-	Astronomy Practical	Pre-requisite: PHY1503 or PHY1038 Co-requisite: AST1534

BCH2601	-	Introductory Biochemistry	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
BCH2602	-	Bioenergetics	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
BCH2603	-	Biopolymers of Heredity	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
BCH2604	-	Biochemistry (Practical)	Pre-requisite: CHE1501 or CHE1502
BOT2601	-	Plant Anatomy, Structure and Function	Co-requisite: BOT1501 (or XOT1501)
BOT2602	-	Systematics of Vascular Plants	Co-requisite: BOT1502 (or XOT1502)
BOT2603	-	Plant Physiology, Water Relations and Plant Nutrition	Co-requisite: BOT1501 (or XOT1501) or BOT1502 (or XOT1502)
BOT2604	-	Botany II (Practical)	Pre-requisite: BOT1603 & (CHE1501 (or XHE1501) or CHE1502 (or XHE1502) Co-requisite: Any two of the following: BOT2601, BOT2602, BOT2603
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2626	-	Computer Networks I	
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
DSC2602	-	Rational Decision Making	Pre-requisite: DSC1510 or DSC1520 or DSC1620 or OPS101G or QMG101P or QMS101D
DSC2604	-	Financial Modelling	Pre-requisite: DSC1630 or QMG102Q
DSC2605	-	Linear Mathematical Programming	Pre-requisite: DSC1510 or DSC1520 or DSC1620 or OPS101G or QMG101P or QMS101D
DSC2606	-	Nonlinear Mathematical Programming	Pre-requisite: DSC1510 or DSC1520 or DSC1620 or OPS101G or QMG101P or QMS101D
FIS2601	-	Digestion, Endocrine Control and Metabolism	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
FIS2602	-	Respiration and Excretion	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
FIS2603	-	Physiological Defence Mechanisms	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)
FIS2604	-	Physiology II (Practical)	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502) Co-requisite: Any two of the following: FIS2601, FIS2602, FIS2603
GGH2601	-	The African Challenge: People and Environment	
GGH2602	-	The Geography of Services Provision	
GGH2603	-	The Interpretation of Maps, Aerial Photographs and Satellite Images	
GGH2604	-	People and the Environment	
GGH2605	-	Environmental Politics	
GGH2606	-	Geography of Tourism	
GGH3708	-	Environmental Awareness and Responsibility	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
MIB2601	-	Introductory Microbiology	
MIB2602	-	Microbial Ecology	
MIB2603	-	Introductory Microbial Genetics, Immunology and Epidemiology	
MIB2604	-	Microbiology II (Practical)	Pre-requisite: CHE1501 (or XHE1501) or CHE1502 (or XHE1502)

			Co-requisite: Any 2 of MIB2601, MIB2602, MIB2603
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2604	-	Physics Practical Work II	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512) Co-requisite: PHY2601, PHY2602 & PHY2606
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
PYC2601	-	Personality Theories	
PYC2602	-	Child and Adolescent Development	
PYC2603	-	Adulthood and Maturity	
PYC2605	-	HIV/AIDS Care and Counselling	
PYC2606	-	Basic Measurement and Questionnaire Design	
RSC2601	-	Research in Social Sciences	
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory. Choose 10 modules			
AGE3701	-	The Interpretation of Archaelogical Data	
AGE3702	-	Applied Archaeology: Heritage Conservation, Cultural Resource Management and Archaeotourism	
AGE3703	-	World Prehistory	
AGE3704	-	Prehistoric Rock Art	
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
BCH3701	-	Enzymology	Co-requisite: BCH2601
BCH3702	-	Advanced Metabolism	Co-requisite: BCH2602
BCH3703	-	Molecular Genetics	Co-requisite: BCH2603
BCH3704	-	Biochemistry (Practical)	Pre-requisite: BCH2604 Co-requisite: Any two of the following: BCH3701, BCH3702, BCH3703
BOT3701	-	Plant Physiology	Pre-requisite: BOT2603
BOT3702	-	Aquatic Ecology	
BOT3703	-	Terrestrial Ecology	
BOT3704	-	Botany III (Practical)	Pre-requisite: BOT2604 Co-requisite: Any two of the following: BOT3701, BOT3702, BOT3703
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3712	-	Computer Graphics	Pre-requisite: COS2611 & MAT1503 (or XAT1503)
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
DSC3702	-	Optimisation of Resources	Pre-requisite: DSC2602 and (DSC2601 or DSC2605 & DSC2606)
DSC3703	-	Simulation	Pre-requisite: DSC2602 and (DSC2601 or DSC2605 & DSC2606)
DSC3704	-	Models for Strategic Decision-Making	Pre-requisite: DSC2602 and (DSC2601 or DSC2605 & DSC2606)
DSC3705	-	Financial Risk Modelling	Pre-requisite: DSC2602 & DSC2604 and (DSC2601 or DSC2605 & DSC2606)
DSC3707	-	Mathematical Modelling II	Pre-requisite: DSC2602 and (either DSC2601 or

			DCS2605 & DSC2606)
FIS3701	-	Physiology of the Nervous System	
FIS3702	-	Cardiovascular System	
FIS3703	-	Membrane and Effector Physiology	
FIS3704	-	Physiology (Practical)	Pre-requisite: FIS2604 Co-requisite: Any two of the following: FIS3701, FIS3702, FIS3703
GGH3701	-	State of the Environment in Southern Africa	
GGH3702	-	Spatial Economic Development	
GGH3703	-	Introduction to Geographical Information Systems	
GGH3704	-	Development of Urban Space	
GGH3705	-	Assessing Environmental Impacts	
GGH3707	-	Ecotourism	
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3702	-	Abstract Algebra	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615
MIB3701	-	Microbial Physiology	
MIB3702	-	Advanced Microbial Genetics, Recombinant DNA Technology and Industrial Microbiology	
MIB3703	-	Microbial Diversity	
MIB3704	-	Microbiology III (Practical)	Pre-requisite: MIB2604 Co-requisite: Any two of the following: MIB3701, MIB3702, MIB3703
PYC3701	-	Social Psychology	
PYC3703	-	Cognition: Thinking, Memory and Problem Solving	
PYC3704	-	Psychological Research	Pre-requisite: RSC2601 or RSC201H (not applicable to 98053 - PPG and 98053 - XPG)
PYC3705	-	Transformative Counselling Encounters	
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3705	-	Sampling Techniques	Pre-requisite: STA2601
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610
ZOL3701	-	Ethology and Project	Co-requisite: Any two of the following modules: ZOL2601, ZOL2602, ZOL2603
ZOL3702	-	Ecology	Co-requisite: Any two of the following modules: ZOL2601, ZOL2602, ZOL2603
ZOL3703	-	Applied Zoology	
ZOL3704	-	Zoology III (Practical)	Pre-requisite: ZOL2604 Co-requisite: Any two of the following: ZOL3701, ZOL3702, ZOL3703

CSETMY

Bachelor of Science

Stream: Mathematics and Computer Science Stream (Extended Programme)

Qualification code: 98801 - XMC **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XOS1511	-	Introduction to Programming I (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
XOS1501	-	Theoretical Computer Science I (Extended)	
XOS1512	-	Introduction to Programming II (Extended)	Pre-requisite: XOS1511 (or COS1511)
XOS1521	-	Computer Systems: Fundamental Concepts(Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PLS2607	-	Philosophy of Science	

Fourth level

Module	Pre/Co-requisite

Group A. Compulsory			
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Chemistry Stream (Extended Programme)

Qualification code: 98801 - XMH **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHE1501	-	General Chemistry IA (Extended)	
XTA1510	-	Basic Statistics (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE1503	-	General Chemistry I (Practical)	Pre-requisite: CHE1501 (or XHE1501) Co-requisite: CHE1502 (or XHE1502)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
XHE1502	-	General Chemistry IB (Extended)	Pre-requisite: CHE1501 (or XHE1501)
XOS1501	-	Theoretical Computer Science I (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
CHE2611	-	Inorganic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2612	-	Physical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503,MAT1512 (or XAT1512)
CHE2613	-	Organic Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502), CHE1503
CHE2614	-	Analytical Chemistry II (Theory)	Pre-requisite: CHE1501 (or XHE1501), CHE1502 (or XHE1502) & CHE1503
CHE2621	-	Inorganic Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2611
CHE2622	-	Physical Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2612
CHE2623	-	Organic Chemistry II (Practical) Semester 2 only	Co-requisite: CHE2613
CHE2624	-	Analytical Chemistry II (Practical) Semester 1 only	Co-requisite: CHE2614
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)

PLS2607	-	Philosophy of Science	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
CHE3701	-	Inorganic Chemistry III	Pre-requisite: CHE2611 & CHE2621
CHE3702	-	Physical Chemistry III	Pre-requisite: CHE2612, CHE2622 & MAT1512 (or XAT1512)
CHE3703	-	Organic Chemistry III	Pre-requisite: CHE2613 & CHE2623
CHE3704	-	Analytical Chemistry III	Pre-requisite: CHE2614 & CHE2624
CHE3721	-	Inorganic Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3701
CHE3722	-	Physical Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3702
CHE3723	-	Organic Chemistry III (Practical) Semester 1 only	Co-requisite: CHE3703
CHE3724	-	Analytical Chemistry III (Practical) Semester 2 only	Co-requisite: CHE3704
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Information Systems Stream (Extended Programme)

Qualification code: 98801 - XMI **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XNF1511.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XNF1505	-	Introduction to Business Information Systems (Extended)	
XOS1501	-	Theoretical Computer Science I (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	
XNF1511	-	Visual Programming I (Extended)	
XNF1520	-	Human-Computer Interaction I (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Applied Mathematics Stream (Extended Programme)

Qualification code: 98801 - XMM **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XPM1513	-	Applied Linear Algebra (Extended)	
XPM1514	-	Mathematical Modelling (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
XHY1505	-	Mechanics (Physics)(Extended)	
XOS1501	-	Theoretical Computer Science I (Extended)	
XOS1511	-	Introduction to Programming I (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
APM2614	-	Applied Dynamical Systems	Pre-requisite: APM1513 (or XPM1513) & MAT1503 (or XAT1503) , MAT1512 (or XAT1512) & MAT1613
APM2616	-	Computer Algebra	Pre-requisite: APM1513 (or XPM1513)& MAT1503 (or XAT1503), MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PLS2607	-	Philosophy of Science	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			

APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
APM3712	-	Mechanics and Calculus of Variations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3713	-	Special Relativity and Riemannian Geometry	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3702	-	Abstract Algebra	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615

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Bachelor of Science

Stream: Mathematics and Physics Stream (Extended Programme)

Qualification code: 98801 - XMP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHY1505	-	Mechanics (Physics)(Extended)	
XOS1511	-	Introduction to Programming I (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
XHY1506	-	Electromagnetism and Heat (Physics) (Extended)	
XHY1604	-	Modern Physics (Extended)	Co-requisite: PHY1505 (or XHY1505)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
APM3701	-	Partial Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611

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Bachelor of Science

Stream: Mathematics and Statistics Stream (Extended Programme)

Qualification code: 98801 - XMS **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements: A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.

Rules: In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.

Purpose statement: The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XOS1501	-	Theoretical Computer Science I (Extended)	
XTA1501	-	Descriptive Statistics and Probability (Extended)	
XUP1501	-	Ethical Information and Communication Technologies for Development Solutions (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
PLS2601	-	Critical Reasoning	
PLS2607	-	Philosophy of Science	
XTA1502	-	Statistical Inference I (Extended)	Co-requisite: XTA1501 (or STA1501)
XTA1503	-	Distribution Theory I (Extended)	Pre-requisite: XTA1501 (or STA1501) Co-requisite: XTA1502 (or STA1502) & (MAT1512(or XAT1512) or DSC1520 or DSC1620)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2612	-	Introduction to Discrete Mathematics	Pre-requisite: COS1501 (or XOS1501) or MAT1512 (or XAT1512) or MAT1613 or MAT1503 (or XAT1503)
MAT2613	-	Real Analysis	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT3701	-	Linear Algebra	Pre-requisite: MAT2611 or MAT211R
MAT3705	-	Complex Analysis	Pre-requisite: MAT2613 or MAT2615
MAT3706	-	Ordinary Differential Equations	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3707	-	Discrete Mathematics: Combinatorics	Pre-requisite: Any 2 APM or MAT modules on second level
MAT3711	-	Real Analysis	Pre-requisite: MAT2613 or MAT2615
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science

Stream: Statistics and Physics Stream (Extended Programme)

Qualification code: 98801 - XSP **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 35954

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree endorsement) or equivalent with at least 50% in the language of teaching and learning, 50% in Mathematics and 50% 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%, and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. or a Senior Certificate (SC) with matriculation exemption or qualify for the exemption from the Matriculation Board 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%, or and at least N4 Engineering Science passed with a minimum of 50%, if any Physics or Chemistry modules form part of the qualification. To enter a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. Applicants who do not comply with the above requirements should consider applying for a lower level qualification.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules.
Purpose statement:	The purpose of the qualification is, in one or more sub-fields within the physical, mathematical, computer, life, earth, and environmental sciences: To produce science graduates who have: a systematic and coherent body of knowledge and an understanding of underlying concepts and principles; the ability to access and evaluate scientific information including knowing how scientific knowledge is created; a high level of cognitive and other generic skills including problem-solving, written and spoken communication and computer literacy; and competence in applying knowledge through basic research methods and practice. To provide every graduate with a sufficient depth of knowledge and skills that give opportunities for continued personal intellectual growth, including postgraduate study, for gainful economic activity in a range of careers, and for rewarding and constructive contributions to society. To provide society with science graduates who demonstrate initiative and responsibility, who are professional and ethical in their roles within the economy and society, and who are able to be intellectual leaders within their society. To produce graduates in all scientific fields, in order to increase, widen and transform the leadership base in South Africa, both for innovation and science-based economic and research development, and for the education of future generations of scientists, technologists, engineers and other professional people.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XHY1505	-	Mechanics (Physics)(Extended)	
XHY1506	-	Electromagnetism and Heat (Physics) (Extended)	
XTA1501	-	Descriptive Statistics and Probability (Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
MAT1613	-	Calculus B	Co-requisite: MAT1512 (or XAT1512)
PHY1503	-	Physics Practical Work I	Co-requisite: PHY1505 (or XHY1505) & PHY1506 (or XHY1506)
XHY1604	-	Modern Physics (Extended)	Co-requisite: PHY1505 (or XHY1505)
XTA1502	-	Statistical Inference I (Extended)	Co-requisite: XTA1501 (or STA1501)
XTA1503	-	Distribution Theory I (Extended)	Pre-requisite: XTA1501 (or STA1501) Co-requisite: XTA1502 (or STA1502) & (MAT1512(or XAT1512) or DSC1520 or DSC1620)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
APM2611	-	Differential Equations	Pre-requisite: MAT1512 (or XAT1512) & MAT1613
MAT2611	-	Linear Algebra	Pre-requisite: MAT1503 (or XAT1503)
MAT2615	-	Calculus in Higher Dimensions	Pre-requisite: MAT1512 (or XAT1512) or MAT1503 (or XAT1503)
PHY2601	-	Classical Mechanics	Pre-requisite: PHY1505 (or XHY1505), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2602	-	Electricity and Magnetism (Physics)	Pre-requisite: PHY1506 (or XHY1506), MAT1503 (or XAT1503) & MAT1512 (or XAT1512)
PHY2606	-	Waves (Physics)	Pre-requisite: PHY1503 (or XHY1503), PHY1505 (or XHY1505), PHY1506 (or XHY1506), MAT1503 (or XAT1503)& MAT1512 (or XAT1512)
STA2601	-	Applied Statistics II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)
STA2602	-	Statistical Inference II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502) Co-requisite: STA1503 (or XTA1503) or STA2610
STA2603	-	Distribution Theory II	Pre-requisite: STA1502 or XTA1502 & (DSC1520 or DSC1620) or (STA1503 (or XTA1503) & MAT1512 (or

			XAT1512) Co-requisite: STA2610 (only for BCom students)
STA2604	-	Forecasting II	Pre-requisite: STA1501 (or XTA1501) & STA1502 (or XTA1502)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
PHY3702	-	Quantum Physics	Pre-requisite: APM2611, MAT2611, PHY1604 (or XHY1604), PHY2601 & PHY2602
PHY3703	-	Statistical and Thermal Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3707	-	Solid State Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3708	-	Atomic and Nuclear Physics	Pre-requisite: PHY2606 Co-requisite: PHY3702
PHY3709	-	Computational Modeling	Co-requisite: APM2611
STA3701	-	Applied Statistics III	Pre-requisite: STA2601 Co-requisite: STA3703 & (MAT2611 or STA3710)
STA3702	-	Statistical Inference III	Pre-requisite: STA2603 or (STA2602 & STA2610)
STA3703	-	Distribution Theory III	Pre-requisite: (STA2603 & MAT2615) or (STA2603 & STA2610) Co-requisite: STA3710 (only for BCom students)
STA3704	-	Time Series III	Pre-requisite: STA2604
STA3710	-	Mathematical Techniques in Statistics	Pre-requisite: STA2603 or STA2610

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Bachelor of Science in Computing

Stream: Computing

Qualification code: 98906 - COM **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 80466

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree 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 matriculation exemption or qualify for the exemption from the Matriculation Board 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, 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 a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511.
Purpose statement:	Successful learners should have: A systematic and coherent body of knowledge. An understanding of underlying concepts and principles of computing and the ability to apply this in the workplace. A high level of cognitive and other generic skills including problem-solving, written and spoken communication. The ability to access and evaluate scientific information; competence in applying knowledge through basic research methods and practice. Specific skills and applied competence leading to continued personal intellectual growth, gainful economic activity and valuable contributions to society in science and technology.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
COS1512	-	Introduction to Programming II	Pre-requisite: COS1511 (or XOS1511)
COS1521	-	Computer Systems: Fundamental Concepts	
INF1505	-	Introduction to Business Information Systems	
MAT1503	-	Linear Algebra	
Group B. Choose 2 from the following			
INF1511	-	Visual Programming I	
INF1520	-	Human-Computer Interaction I	
MAT1512	-	Calculus A	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2626	-	Computer Networks I	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
STA1610	-	Introduction to Statistics	
Group B. Choose 2 from the following			
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
Group B. Choose 4 from the following			
APM3711	-	Numerical Methods II	Pre-requisite: COS2633

COS3712	-	Computer Graphics	Pre-requisite: COS2611 & MAT1503 (or XAT1503)
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)

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Bachelor of Science in Computing

Stream: Computing (Extended Programme)

Qualification code: 98906 - XCO **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 80466

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree 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 matriculation exemption or qualify for the exemption from the Matriculation Board 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, 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 a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511.
Purpose statement:	Successful learners should have: A systematic and coherent body of knowledge. An understanding of underlying concepts and principles of computing and the ability to apply this in the workplace. A high level of cognitive and other generic skills including problem-solving, written and spoken communication. The ability to access and evaluate scientific information; competence in applying knowledge through basic research methods and practice. Specific skills and applied competence leading to continued personal intellectual growth, gainful economic activity and valuable contributions to society in science and technology.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XAT1503	-	Linear Algebra (Extended)	
XNF1505	-	Introduction to Business Information Systems (Extended)	
XOS1501	-	Theoretical Computer Science I (Extended)	
XOS1511	-	Introduction to Programming I (Extended)	
XOS1521	-	Computer Systems: Fundamental Concepts(Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2601	-	Theoretical Computer Science II	Pre-requisite: COS1501 (or XOS1501) or MAT2612
XOS1512	-	Introduction to Programming II (Extended)	Pre-requisite: XOS1511 (or COS1511)
XTA1610	-	Introduction to Statistics (Extended)	
Group B. Choose any 2 modules from the following			
XAT1512	-	Calculus A (Extended)	Pre-requisite: XAT1511 (Not applicable to 98801-XAC, XAP, XCM, XCP, XCC, XCI, XMM, XMP, XMS, XMI, XSP, XMH)
XNF1511	-	Visual Programming I (Extended)	
XNF1520	-	Human-Computer Interaction I (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2621	-	Computer Organisation	Pre-requisite: COS1512 (or XOS1512) & COS1521 (or XOS1521)
COS2626	-	Computer Networks I	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
Group B. Choose any 2 modules from the following			
COS2633	-	Numerical Methods I	Pre-requisite: COS1511 (or XOS1511), MAT1512 (or XAT1512) & MAT1503 (or XAT1503)
COS2661	-	Formal Logic II	Pre-requisite: COS1501 (or XOS1501)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
COS3701	-	Theoretical Computer Science III	Pre-requisite: COS2601
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614

COS3721	-	Operating Systems and Architecture	Pre-requisite: COS2614
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
Group B. Choose Any 4 modules from the following			
APM3711	-	Numerical Methods II	Pre-requisite: COS2633
COS3712	-	Computer Graphics	Pre-requisite: COS2611 & MAT1503 (or XAT1503)
COS3751	-	Techniques of Artificial Intelligence	Pre-requisite: COS2611 & COS2661 (Not applicable to 98801-AMC & 98801-XAC)
COS3761	-	Formal Logic III	Pre-requisite: COS2661 (Not applicable to 98801-AMC & 98801-XAC)
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)

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Bachelor of Science in Informatics

Stream: Informatics

Qualification code: 98907 - INF **NQF Exit level:** 7 **Total credits:** 360 **APS:** 25 **SAQA ID:** 79786

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree 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 matriculation exemption or qualify for the exemption from the Matriculation Board 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, 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 a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511. FAC1601 has been replaced with FAC1602, students who have already passed FAC1601 may not register for FAC1602.
Purpose statement:	Successful graduates should have: A systematic and coherent body of knowledge. An understanding of underlying concepts and principles of Information Systems with the ability to apply this in the workplace. An understanding of underlying concepts and principles of Information Systems with the ability to apply this in the workplace. The ability to access and evaluate scientific information. A high level of cognitive and other generic skills including problem-solving, written and spoken communication.Competence in applying knowledge through basic research methods and practice. Specific skills and applied competence leading to continued personal intellectual growth, gainful economic activity and valuable contributions to society in science and technology. Their competencies and skills include programming, system analysis and design, database design and implementation, interaction design and project management. The qualification should produce graduates who demonstrate responsibility in being professional and ethical in their roles within the economy and society; are proficient in innovative, scientific, economic and managerial scholarly activities; are able to consolidate and widen scientific knowledge; are capable of integrating knowledge and skills in contributing to the good of society. Such graduates should be able to provide South Africa and other countries with citizens capable of making a constructive contribution to their society and who are empowered to play a leadership role.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
COS1511	-	Introduction to Programming I	
COS1512	-	Introduction to Programming II	Pre-requisite: COS1511 (or XOS1511)
COS1521	-	Computer Systems: Fundamental Concepts	
FAC1502	-	Financial Accounting Principles, Concepts and Procedures	
INF1505	-	Introduction to Business Information Systems	
INF1511	-	Visual Programming I	
INF1520	-	Human-Computer Interaction I	
MNB1501	-	Business Management IA	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2626	-	Computer Networks I	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MNB1601	-	Business Management IB	Pre-requisite: MNB1501 or MNB101D (except for qualification code 90017)
MNE2601	-	Introduction to Entrepreneurship and Small Business Management	Pre-requisite: MNB1501 & MNB1601 or MNB101D & MNB102E
MNG2601	-	General Management	
STA1610	-	Introduction to Statistics	
Group B. Choose 2 from the following			
AUE2602	-	Corporate Governance in Accountancy	Pre-requisite: FAC1502 (except for qualification code 90017)
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)
FAC1602	-	Elementary Financial Accounting and Reporting	Co-requisite: FAC1502

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603

INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)
MNE3701	-	Entrepreneurship and Small Business Management	Pre-requisite: MNE2601 or MNE202V
MNE3702	-	Corporate Entrepreneurship	Pre-requisite: MNE2601 or MNE202V
MNG3701	-	Strategic Planning IIIA	Pre-requisite: MNG2601 or MNG2016 (Not applicable to BTCOR, BTPLC, BTEXP, BTMAN, BTSMN, BTTOU & BTAGM & 98235)
MNG3702	-	Strategic Implementation and Control IIIB	Co-requisite: MNG3701
Group B. Choose 1 from the following			
AUI3702	-	The Internal Audit Process: Test of Controls	Pre-requisite: AUE2602
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
MNB3701	-	Global Business Management IA	Pre-requisite: MNG2601

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Bachelor of Science in Informatics

Stream: Informatics (Extended Programme)

Qualification code: 98907 - XIN **NQF Exit level:** 7 **Total credits:** 360 **APS:** 20 **SAQA ID:** 79786

This qualification will be presented using both online and distance learning modes.

Admission requirements:	A National Senior Certificate (NSC) (Degree 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 matriculation exemption or qualify for the exemption from the Matriculation Board 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, 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 a degree students have to comply with all admission requirements, inclusive of the minimum APS of 20, and must be eligible for admission into degree studies. Applicants who have an APS of 20 to 24 will be considered for the extended (4) year Degree curriculum where applicable. Applicants who have an APS of 25 and higher will be considered for the (3) three year degree curriculum. Applicants who comply with the minimum statutory admission requirements but do not meet the additional College requirements, may follow Unisa's alternative pathway. 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.
Rules:	In this qualification, registration is restricted to 60 credits in the first and second levels. It is strongly recommended to students to complete all the first level modules, followed by all the second level modules, before proceeding to register for the third or fourth level modules. Students who want to register for Computer Science or Information Systems modules should: (a) Have access to an internet cafe, a Unisa Regional Learning Centre or other internet facilities. After registration, access to myUnisa on a regular basis is compulsory and (b) Have passed Computer Application Technology or Information Technology with a rating of 4 (new National Senior Certificate) or have passed Computer Studies (old Senior Certificate) or hold an Industry Standard qualification such as the ICDL in Computer Literacy. Students who do not satisfy this requirement are strongly recommended to register for XUP1501 before they register for XOS1511. FAC1601 has been replaced with FAC1602, students who have already passed FAC1601 may not register for FAC1602.
Purpose statement:	Successful graduates should have: A systematic and coherent body of knowledge. An understanding of underlying concepts and principles of Information Systems with the ability to apply this in the workplace. An understanding of underlying concepts and principles of Information Systems with the ability to apply this in the workplace. The ability to access and evaluate scientific information. A high level of cognitive and other generic skills including problem-solving, written and spoken communication.Competence in applying knowledge through basic research methods and practice. Specific skills and applied competence leading to continued personal intellectual growth, gainful economic activity and valuable contributions to society in science and technology. Their competencies and skills include programming, system analysis and design, database design and implementation, interaction design and project management. The qualification should produce graduates who demonstrate responsibility in being professional and ethical in their roles within the economy and society; are proficient in innovative, scientific, economic and managerial scholarly activities; are able to consolidate and widen scientific knowledge; are capable of integrating knowledge and skills in contributing to the good of society. Such graduates should be able to provide South Africa and other countries with citizens capable of making a constructive contribution to their society and who are empowered to play a leadership role.

First level

Module			Pre/Co-requisite
Group A. Compulsory			
XNF1505	-	Introduction to Business Information Systems (Extended)	
XNF1511	-	Visual Programming I (Extended)	
XNF1520	-	Human-Computer Interaction I (Extended)	
XOS1511	-	Introduction to Programming I (Extended)	
XOS1521	-	Computer Systems: Fundamental Concepts(Extended)	

Second level

Module			Pre/Co-requisite
Group A. Compulsory			
FAC1502	-	Financial Accounting Principles, Concepts and Procedures	
MNB1501	-	Business Management IA	
MNB1601	-	Business Management IB	Pre-requisite: MNB1501 or MNB101D (except for qualification code 90017)
XOS1512	-	Introduction to Programming II (Extended)	Pre-requisite: XOS1511 (or COS1511)
XTA1610	-	Introduction to Statistics (Extended)	

Third level

Module			Pre/Co-requisite
Group A. Compulsory			
COS2614	-	Programming: Contemporary Concepts	Pre-requisite: COS1512 (or XOS1512)
COS2626	-	Computer Networks I	
ICT2621	-	Structured Systems Analysis and Design	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
ICT2622	-	Object-Oriented Analysis	Pre-requisite: ICT1521 (or XCT1521) & ICT1541 (or XCT1541) or INF1505 (or XNF1505) or COS1521 (or XOS1521)
INF2603	-	Databases I	Pre-requisite: INF1505 (or XNF1505)
INF2611	-	Visual Programming II	Pre-requisite: INF1511 (or XCT1511)
MNE2601	-	Introduction to Entrepreneurship and Small Business Management	Pre-requisite: MNB1501 & MNB1601 or MNB101D & MNB102E
MNG2601	-	General Management	
Group B. Choose 2 modules from the following			
AUE2602	-	Corporate Governance in Accountancy	Pre-requisite: FAC1502 (except for qualification code 90017)
COS2611	-	Programming: Data Structures	Pre-requisite: COS1512 (or XOS1512)

FAC1602	-	Elementary Financial Accounting and Reporting	Co-requisite: FAC1502

Fourth level

Module			Pre/Co-requisite
Group A. Compulsory			
INF3703	-	Databases II	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3705	-	Advanced Systems Development	Pre-requisite: ICT2621 & ICT2622
INF3707	-	Database Design and Implementation	Pre-requisite: ICT2621 or ICT2622 or INF2603
INF3708	-	Software Project Management	
INF3720	-	Human-Computer Interaction II	Co-requisite: INF1520 (or XNF1520)
MNE3701	-	Entrepreneurship and Small Business Management	Pre-requisite: MNE2601 or MNE202V
MNE3702	-	Corporate Entrepreneurship	Pre-requisite: MNE2601 or MNE202V
MNG3701	-	Strategic Planning IIIA	Pre-requisite: MNG2601 or MNG2016 (Not applicable to BTCOR, BTPLC, BTEXP, BTMAN, BTSMN, BTTOU & BTAGM & 98235)
MNG3702	-	Strategic Implementation and Control IIIB	Co-requisite: MNG3701
Group B. Choose 1 module from the following			
AUI3702	-	The Internal Audit Process: Test of Controls	Pre-requisite: AUE2602
COS3711	-	Advanced Programming	Pre-requisite: COS2611 & COS2614
MNB3701	-	Global Business Management IA	Pre-requisite: MNG2601

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HONOURS DEGREES

Bachelor of Commerce Honours in Business Informatics

Qualification code: 98450 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 5687

This qualification will be presented using both online and distance learning modes.

Admission requirements: An accredited undergraduate degree with a major subject in Information Systems and including modules in commercial subjects (or an equivalent NQF level 7 qualification), with a minimum of 60% for the final year modules in the major subject. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.

Purpose statement: The primary purpose of the qualification is to provide Honours Bachelor of Commerce graduate level knowledge, specific skills and applied competence in a number of fields traditionally associated with Business, Commerce and Management that will prepare them to be lifelong learners, employable workers/managers, entrepreneurs and contributors to society and the business community.A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge base economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can understand the constructive role they need to play as intellectual economic leaders in their society and who are empowered to play that role.

Module			Pre/Co-requisite
Group A. Compulsory			
HPCOS81	-	Research Methods and Proposal	
HRCOS82	-	Honours Research Report	Pre-requisite: HPCOS81
Group B. Choose 2 from the following			
INF4817	-	Software Engineering	
INF4820	-	Human-Computer Interaction	
INF4825	-	Software Project Management	
INF4831	-	Information Security	
INF4883	-	Enterprise Architecture	
Group C. Choose 2 from the following			
AUI4861	-	Advanced Internal Audit Practice	
AUI4862	-	Advanced Internal Audit Responsibilities in Risk, Control and Governance	
BAN4801	-	Financial Institutions Management	
FIN4801	-	Advanced Financial Management	
FIN4802	-	International Financial Management	
INV4801	-	Investments: Portfolio Management	
IOP4862	-	Managerial and Organisational Psychology	
RSK4801	-	Operational Risk Management	

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Bachelor of Science Honours in Computing

Qualification code: 98908 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented using both online and distance learning modes.

Admission requirements:	An accredited undergraduate degree with a major in Computer Science or Information Systems (or an equivalent NQF level 7 qualification), with a minimum of 60% for the final year modules in the major subject. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Computing is an umbrella term that includes both Computer Science and Information Systems. Bachelor of Science Honours degree in Computing (98908) therefore includes modules in Information Systems and Computer Science. Students may take any combination of them. Note, however, that the Computer Science modules assume a background in Computer Science. Students with only a major in Information Systems on undergraduate level are strongly advised to take the Information Systems honours modules, and students with only a major in Computer Science on undergraduate level are strongly advised to take the Computer Science honours modules. An exception is Ontology Engineering COS4840, which is suitable for students with a background in Computer Science or Information Systems. Students who want to register for this qualification must have access to an Internet Cafe or a Unisa Regional Learning Centre or other Internet facilities. After registration, access to myUnisa on a regular basis is compulsory.
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HPCOS81	-	Research Methods and Proposal	
HRCOS82	-	Honours Research Report	Pre-requisite: HPCOS81
Group B. Choose any 6 from the following			
COS4807	-	Formal Logic	
COS4840	-	Ontology Engineering	
COS4851	-	Logic-Based Reasoning	
COS4852	-	Machine Learning	
COS4861	-	Natural Language Processing	
COS4892	-	Formal Program Verification	
INF4817	-	Software Engineering	
INF4820	-	Human-Computer Interaction	
INF4825	-	Software Project Management	
INF4831	-	Information Security	
INF4860	-	E-Learning: Concepts and Principles	
INF4883	-	Enterprise Architecture	

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Bachelor of Science Honours in Chemistry Education

Qualification code: 98910 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who have passed STE4802 will retain credit for the module.
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
CHE4801	-	Inorganic Chemistry IV	
CHE4802	-	Physical Chemistry IV	
CHE4803	-	Organic Chemistry IV	
CHE4804	-	Analytical Chemistry IV	
HPSTE81	-	Proposal for Honours in Mathematics, Science and Technology Education	Co-requisite: STE4803
HRMCH82	-	HONOURS REPORT IN CHEMISTRY EDUCATION	Pre-requisite: HPSTE81
STE4801	-	Contemporary Theories of Learning and Implications for Teaching (Offered in Semester 1)	
STE4803	-	Research Methods in Mathematics, Science and Technology Education (Offered in Semester 1)	
STE4804	-	Contributions From Cognitive Science to Teaching and Learning (Offered in Semester 2)	

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Bachelor of Science Honours in Life Science Education

Qualification code: 98912 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who have passed STE4802 will retain credit for the module
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
BOT4802	-	Advanced Plant Taxonomy and Nomenclature	
HPSTE81	-	Proposal for Honours in Mathematics, Science and Technology Education	Co-requisite: STE4803
HRMLS82	-	Honours Report in Life Science Education	Pre-requisite: HPSTE81
STE4801	-	Contemporary Theories of Learning and Implications for Teaching (Offered in Semester 1)	
STE4803	-	Research Methods in Mathematics, Science and Technology Education (Offered in Semester 1)	
STE4804	-	Contributions From Cognitive Science to Teaching and Learning (Offered in Semester 2)	
Group B. Choose 1 from the following:			
BOT4801	-	Medicinal Plant Use	
HES4803	-	Ecotoxicology	Recommendation: First year Chemistry/Biochemistry
HES4807	-	Conservation Ecology	

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Bachelor of Science Honours in Mathematics Education

Qualification code: 98913 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who have passed STE4802 will retain credit for the module .
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HPSTE81	-	Proposal for Honours in Mathematics, Science and Technology Education	Co-requisite: STE4803
HRMMA82	-	Honours Report in Mathematics Education	Pre-requisite: HPSTE81
STE4801	-	Contemporary Theories of Learning and Implications for Teaching (Offered in Semester 1)	
STE4803	-	Research Methods in Mathematics, Science and Technology Education (Offered in Semester 1)	
STE4804	-	Contributions From Cognitive Science to Teaching and Learning (Offered in Semester 2)	
Group B. Choose any 4 from the following:			
APM4801	-	Cosmology	
MAT4831	-	Measure Theory and Integration	
MAT4836	-	Topology	
MAT4841	-	Functional Analysis I	
MAT4843	-	Ordinary Differential Equations I	
MAT4845	-	Graph Theory I	
MAT4847	-	Partial Differential Equations I	
MAT4857	-	Matrix Theory and Linear Algebra I	

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Bachelor of Science Honours in Physics Education

Qualification code: 98914 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who have passed STE4802 will retain credit for the module
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HPSTE81	-	Proposal for Honours in Mathematics, Science and Technology Education	Co-requisite: STE4803
HRMPH82	-	Honours Report in Physics Education	Pre-requisite: HPSTE81
STE4801	-	Contemporary Theories of Learning and Implications for Teaching (Offered in Semester 1)	
STE4803	-	Research Methods in Mathematics, Science and Technology Education (Offered in Semester 1)	
STE4804	-	Contributions From Cognitive Science to Teaching and Learning (Offered in Semester 2)	
Group B. Choose any 4 from the following:			
PHY4801	-	Advanced Mathematical Methods	
PHY4802	-	Electromagnetism	Co-requisite: PHY4801
PHY4805	-	Statistical Physics	Co-requisite: PHY4801
PHY4806	-	Advanced Solid State Physics	Co-requisite: PHY4801
PHY4807	-	Nuclear Physics	Co-requisite: PHY4801

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Bachelor of Science Honours in Statistics Education

Qualification code: 98916 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who have passed STE4802 will retain credit for the module
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HPSTE81	-	Proposal for Honours in Mathematics, Science and Technology Education	Co-requisite: STE4803
HRMST82	-	Honours Report in Statistics Education	Pre-requisite: HPSTE81
STE4801	-	Contemporary Theories of Learning and Implications for Teaching (Offered in Semester 1)	
STE4803	-	Research Methods in Mathematics, Science and Technology Education (Offered in Semester 1)	
STE4804	-	Contributions From Cognitive Science to Teaching and Learning (Offered in Semester 2)	
Group B. Choose any 4 from the following:			
STA4801	-	Matrix Methods in Statistics	
STA4803	-	Linear Models	Co-requisite: STA4801
STA4804	-	Regression	Co-requisite: STA4801 & STA4803
STA4807	-	Time Series	Co-requisite: STA4801
STA4812	-	Inference	Co-requisite: STA4801

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Bachelor of Science Honours in Physics

Qualification code: 98918 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:

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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.

Purpose statement:

The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A.			
HRPHY82	-	Physics Honors Research Methods and Project	Co-requisite: PHY4806 & PHY4807
PHY4801	-	Advanced Mathematical Methods	
PHY4802	-	Electromagnetism	Co-requisite: PHY4801
PHY4803	-	Quantum Mechanics I	Co-requisite: PHY4801
PHY4804	-	Quantum Mechanics II	Co-requisite: PHY4803
PHY4805	-	Statistical Physics	Co-requisite: PHY4801
PHY4806	-	Advanced Solid State Physics	Co-requisite: PHY4801
PHY4807	-	Nuclear Physics	Co-requisite: PHY4801

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Bachelor of Science Honours in Chemistry

Qualification code: 98919 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements: 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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.

Purpose statement: The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A.			
CHE4801	-	Inorganic Chemistry IV	
CHE4802	-	Physical Chemistry IV	
CHE4803	-	Organic Chemistry IV	
CHE4804	-	Analytical Chemistry IV	
CHE4805	-	Molecular Symmetry	
CHE4806	-	Organic Polymer Chemistry	Co-requisite: CHE4803
CHE4807	-	Environmental Chemistry	
CHE4808	-	Honours Project (Practical)	Co-requisite: CHE4801, CHE4802, CHE4803 & CHE4804

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Bachelor of Science Honours in Astronomy

Qualification code: 98920 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who did not complete HMAST80 & HRAST81 must register for the new module HRAST82 in 2017. Pipeline students who have passed HMAST80 only will be given until 2018 to pass HRAST81. Credits for HRAST82 will be given to students who passed both HMAST80 & HRAST81.
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
AST4883	-	Radiative Processes	
HRAST82	-	Honours Research in Astronomy	
Group B. Choose 6 from the following			
APM4804	-	Introduction to General Relativity	
APM4805	-	Mathematics of Optimization Theory	
APM4808	-	Numerical Solutions to Partial Differential Equations	
APM4809	-	Optimal Control	
APM4810	-	An Introduction to the Finite Element Method	
APM4812	-	Introduction to Mechanics of Fluids	
AST4870	-	Special Topics in Astrophysics	
AST4871	-	Special Topics in Astrophysics	
AST4872	-	Special Topics in Astrophysics	
AST4873	-	Special Topics in Astrophysics	
AST4874	-	Special Topics in Astrophysics	
AST4875	-	Special Topics in Astrophysics	
AST4879	-	Special Topics in Astrophysics	
AST4880	-	Galaxies I	
AST4884	-	Atomic and Molecular Spectroscopy	
PHY4801	-	Advanced Mathematical Methods	
PHY4802	-	Electromagnetism	Co-requisite: PHY4801
PHY4803	-	Quantum Mechanics I	Co-requisite: PHY4801
PHY4804	-	Quantum Mechanics II	Co-requisite: PHY4803
PHY4805	-	Statistical Physics	Co-requisite: PHY4801
PHY4807	-	Nuclear Physics	Co-requisite: PHY4801

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Bachelor of Science Honours in Applied Mathematics

Qualification code: 98921 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who did not complete HMAPM80 & HRAPM81 must register for the new module HRAPM82 in 2017. Pipeline students who have passed HMAPM80 only will be given until 2018 to pass HRAPM81. Credits for HRAPM82 will be given to students who passed both HMAPM80 & HRAPM81.
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HRAPM82	-	Honours Research in Applied Mathematics	
Group B. Choose 7 from the following			
APM4801	-	Cosmology	
APM4802	-	Continuous Time Stochastic Processes	
APM4804	-	Introduction to General Relativity	
APM4805	-	Mathematics of Optimization Theory	
APM4806	-	Riemannian Geometry and Tensor Calculus	
APM4808	-	Numerical Solutions to Partial Differential Equations	
APM4809	-	Optimal Control	
APM4810	-	An Introduction to the Finite Element Method	
APM4811	-	Applied Functional Analysis	
APM4812	-	Introduction to Mechanics of Fluids	
MAT4847	-	Partial Differential Equations I	
MAT4848	-	Partial Differential Equations II	Co-requisite: MAT4847
PHY4802	-	Electromagnetism	Co-requisite: PHY4801

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Bachelor of Science Honours in Statistics

Qualification code: 98922 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	It is recommended that students register for HRSTA82 after completing other coursework modules. Credit for HRSTA82 will be given to students who passed both STA4806 & STA4805. Students who have not completed both STA4806 and STA4805 must register for the new module HRSTA82.
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HRSTA82	-	Research Project in Statistics	Co-requisite: STA4801
STA4801	-	Matrix Methods in Statistics	
STA4802	-	Multivariate Distribution Theory	Co-requisite: STA4801
STA4803	-	Linear Models	Co-requisite: STA4801
STA4804	-	Regression	Co-requisite: STA4801 & STA4803
Group B. Choose 3 from the following			
STA4807	-	Time Series	Co-requisite: STA4801
STA4808	-	Survival Analysis	
STA4809	-	Nonparametric Regression	Co-requisite: STA4801
STA4810	-	Methods of Multivariate Analysis	Co-requisite: STA4801, STA4802 & (HRSTA82 applicable to 98922)
STA4811	-	Probability and Stochastic Processes	Co-requisite: STA4801
STA4812	-	Inference	Co-requisite: STA4801

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Bachelor of Science Honours in Mathematics

Qualification code: 98923 **NQF Exit level:** 8 **Total credits:** 120 **APS:** 60 **SAQA ID:** 6085

This qualification will be presented online only.

Admission requirements:	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. Unsuccessful applicants may appeal to the College of Graduate Studies, and will be required to provide a motivation for special admission. The motivation must incorporate the following: academic motivation offering evidence of your ability to study a postgraduate qualification, work experience relevant to the qualification and courses completed since graduating with the Bachelor's degree or Advanced Diploma. These appeals will only be considered if the enrolment target of the particular qualification has not been met and/or additional enrolment spaces are available.
Rules:	Students who did not complete HMMAT80 & HRMAT81 must register for the new module HRMAT82 in 2017. Pipeline students who have passed HMMAT80 only will be given until 2018 to pass HRMAT81. Credits for HRMAT82 will be given to students who passed both HMMAT80 & HRMAT81.
Purpose statement:	The primary purpose of the qualification is to provide Hons BSc graduates with the knowledge, specific skills and applied and theoretical competence in a number of Science fields to provide opportunities for continued personal intellectual growth, gainful economic activity and valuable contributions to society. A second purpose of the qualification is to provide South Africa (and other countries) with graduates in a number of learning fields in order to ensure that the leadership base of innovative and knowledge-based economic and scholarly activity is widened. A third purpose of the qualification is to provide South Africa (and other countries) with people who can perform a constructive role they need to play as intellectual leaders in their society.

Module			Pre/Co-requisite
Group A. Compulsory			
HRMAT82	-	Honours Research in Mathematics	
Group B. Choose 7 from the following			
MAT4831	-	Measure Theory and Integration	
MAT4833	-	Group Theory	
MAT4834	-	Rings and Fields	Co-requisite: MAT4833
MAT4835	-	Set Theory	
MAT4836	-	Topology	
MAT4837	-	Introduction to Category Theory	
MAT4838	-	Category Theory	
MAT4841	-	Functional Analysis I	
MAT4842	-	Functional Analysis II	Co-requisite: MAT4841
MAT4843	-	Ordinary Differential Equations I	
MAT4844	-	Ordinary Differential Equations II	Co-requisite: MAT4843
MAT4845	-	Graph Theory I	
MAT4846	-	Graph Theory II	Co-requisite: MAT4845
MAT4847	-	Partial Differential Equations I	
MAT4848	-	Partial Differential Equations II	Co-requisite: MAT4847
MAT4857	-	Matrix Theory and Linear Algebra I	
MAT4858	-	Matrix Theory and Linear Algebra II	Co-requisite: MAT4857

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NON DEGREE PURPOSES

Extended Programme for Degree Studies

Stream: Extended Programme for the College of Science, Engineering and Technology (NDP)

Qualification code: 98000 - SET **NQF Exit level:** 0 **Total credits:** 0 **APS:** 0 **SAQA ID:**

This qualification will be presented via distance learning mode.

Admission requirements:

First level

Module			Pre/Co-requisite
Group A. Compulsory			
AFK1502	-	Basic Text Skills (Afrikaans)	
AFK1503	-	Contemporary Afrikaans: Language Studies and Written Communication	
ENG1511	-	English Proficiency for University Studies	
ENN103F	-	English for Academic Purposes	
MAT0511	-	Access to Mathematics	
SMI181Q	-	Science: Mining I	
Group B. Choose 2 or 3 of the following modules:			
APM1513	-	Applied Linear Algebra	
APM1514	-	Mathematical Modelling	
COS1501	-	Theoretical Computer Science I	
COS1511	-	Introduction to Programming I	
COS1521	-	Computer Systems: Fundamental Concepts	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
INF1505	-	Introduction to Business Information Systems	
INF1511	-	Visual Programming I	
MAT1503	-	Linear Algebra	
MAT1512	-	Calculus A	
PHY1505	-	Mechanics (Physics)	
STA1501	-	Descriptive Statistics and Probability	
STA1510	-	Basic Statistics	

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Extended Programme for Diploma Studies

Stream: Extended Programme for the College of Science, Engineering and Technology (NDP)

Qualification code: 99000 - SET **NQF Exit level:** 0 **Total credits:** 0 **APS:** 0 **SAQA ID:**

This qualification will be presented via distance learning mode.

Admission requirements:

First level

Module			Pre/Co-requisite
Group A. Compulsory			
AFK1502	-	Basic Text Skills (Afrikaans)	
AFK1503	-	Contemporary Afrikaans: Language Studies and Written Communication	
ENG1511	-	English Proficiency for University Studies	
ENN103F	-	English for Academic Purposes	
MAT0511	-	Access to Mathematics	
SMI181Q	-	Science: Mining I	
Group B. Choose 2 or 3 modules from the following			
BSM1501	-	Business Management IA	
CMD1501	-	Construction Methods I	
COS1511	-	Introduction to Programming I	
DCE1501	-	Drawing: Chemical Engineering I	
DRW1501	-	Drawing I	
EMA2601	-	Engineering Management II (Module A)	
ENN1504	-	Practising Workplace English	
EUP1501	-	Ethical Information and Communication Technologies for Development Solutions	
EWS121Q	-	Engineering Work Study I	
ICT1511	-	Introduction to Programming	
ICT1513	-	Introduction to Web Design	Co-requisite: EUP1501 (or XUP1501), ICT1512
IPM101P	-	Introduction to Pulp and Paper Making I	
MED161Q	-	Mechanical Engineering Drawing I	
MEP171X	-	Mineral Exploitation I	
PTL101P	-	Pulp and Paper Technology I	
STA1510	-	Basic Statistics	

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