CHAPTER 20

FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

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DEPARTMENT OF ELECTRICAL, ELECTRONIC AND COMPUTER ENGINEERING

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DEPARTMENT OF INFORMATION TECHNOLOGY

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LECTURER Vacant

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BLOEMFONTEIN CAMPUS

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SECRETARY Vacant

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LECTURERS
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Mr O Odufuwa, BTech (CUT)
Mr CK Ramabusa, BTech (CUT)
Mr LF Monaheng, BTech (CUT)

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TECHNICAL ASSISTANT Vacant

DEPARTMENT OF MATHEMATICS AND PHYSICAL SCIENCES

BLOEMFONTEIN CAMPUS

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SECRETARY Vacant

ASSOCIATE PROFESSOR Prof. M Truscott, PhD (UFS)

SENIOR LECTURER Dr HE Brink, PhD (US)

LECTURERS
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Mr R Sypkens, MSc (UFS)

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1. RULES OF THE FACULTY OF ENGINEERING AND INFORMATION TECHNOLOGY

The following rules are supplementary to the rules of the Central University of Technology, Free State (CUT).

2. DURATION OF SEMESTER AND YEAR LEARNING PROGRAMMES

For Electrical, Mechanical and Civil Engineering there are two intakes per year, i.e. one in January and one in July. For all other learning programmes presented in the Faculty there is only one intake per year, i.e. in January.

The duration of a semester is approximately six months.
The first semester extends from January to June, while the second semester extends from July to November.

3. STRUCTURE OF LEARNING PROGRAMMES (REFER TO THE REMARKS PRINTED UNDER EACH LEARNING PROGRAMME)

4. NATIONAL DIPLOMA AND DEGREE LEARNING PROGRAMMES

The student has the option of exiting upon successful completion of the first three years of study, thereby earning a National Diploma. National Diploma programmes in Engineering and Building consist of two components, namely the formal study period and a period of work-integrated learning.

Formal Study Period:
The period of formal study at CUT extends over four semesters.

Work-Integrated Learning Period (Engineering and Building programmes):
The period of compulsory work-integrated learning training applicable to each programme, to be completed at a suitable place of employment extends over two semesters.

A student may register for a Baccalaureus Technologiae Degree in the fourth year upon successful completion of the National Diploma. Admission to the Baccalaureus Technologiae year of study is subject to certain prerequisites (see specific learning programme). Some of the final annual instructional offerings for the Baccalaureus Technologiae in learning programmes related to Engineering are presented on either a full-time or a part-time block basis. A minimum of one year of Work-Integrated Learning is to be completed before Baccalaureus Technologiae studies in the field of Engineering can commence. Further information is available from the Head of Department or the Faculty Officer.

5. FORMAL STUDIES

5.1 Students with an employer

The student enrols directly at National Diploma level, provided he/she is in compliance with the minimum admission requirements. After a period of one year (two semesters) at CUT, the student may return to the employer for Work-Integrated Learning (in a programme of Engineering) or alternatively may continue with the subsequent academic part and join the employer later for Work-Integrated Learning purposes.

5.2 Students without an employer

The student enrols at National Diploma level, provided he/she is in compliance with the minimum admission requirements. The student attends classes with the other groups and at any stage after the first year (two semesters) may commence with his/her work-integrated learning training at a suitable place of employment. Upon completion of the formal study period at CUT and the prerequisite Work-Integrated Learning (Engineering programmes) the student may either apply for the National Diploma and leave the University, or continue with his/her studies towards the Baccalaureus Technologiae Degree.

6. REGISTRATION DURING WORK-INTEGRATED LEARNING

Employers prepare a programme for work-integrated learning in collaboration with CUT. With regard to Computer Systems, it is recommended that students complete all four semesters of study before commencing with their work-integrated learning. The Centre for Work-integrated Learning and Skills Development assists in placing students with employers.

During the work-integrated learning phase, **the student must registerat CUTevery six months, except for the Building programme where students register in January for the full academic year**. The student draws up a report containing details of the training period, which serves as a means of monitoring the progress made in the student's work-integrated learning. The rules applicable to the writing of the report are contained in a study guide, available from the Secretary of the relevant department. After every semester of prescribed work-integrated learning, the student must approach the Secretary of the relevant department to arrange for an interview during which his/her work-integrated learning is assessed by the relevant lecturer, no later than 14 days after commencing with the subsequent semester, unless otherwise stipulated in specific programme study guides.

7. USE OF POCKET CALCULATORS

Unless otherwise specified for a particular instructional offering, no alphanumeric pocket calculators may be used during tests or assessments.

8. ITS CODES

When completing a registration or other form, the student must be certain of the correct codes used to identify the learning programme and instructional offerings selected. Since accounts, class lists, progress reports and assessment results are compiled according to these codes, it is in the best interest of the student to ensure that the correct codes are used and that he/she writes clearly.

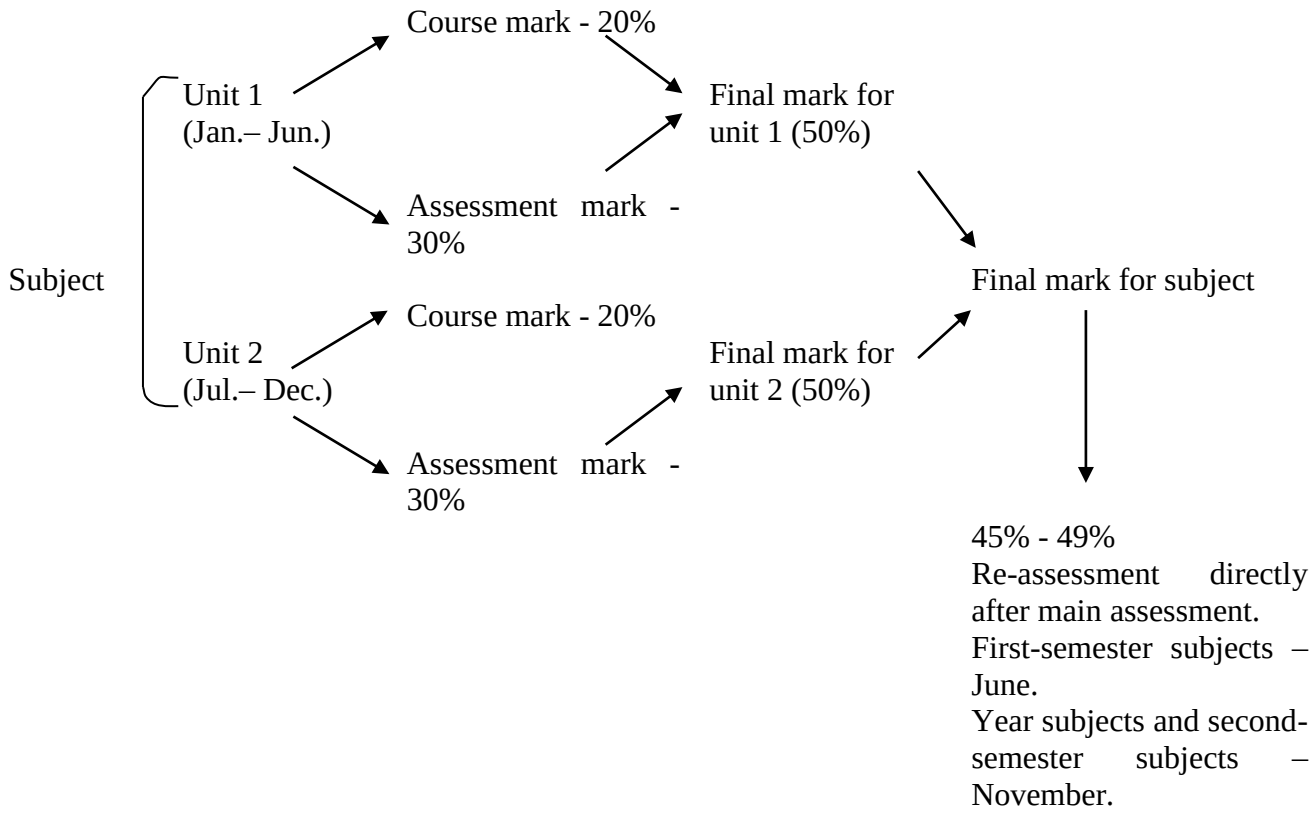
9. INTERNET-BASED LEARNING

Internet-based learning has been implemented in respect of several instructional offerings and is used as an additional instructional support aid in the Faculty of Engineering and Information Technology. Information in this regard will be provided by the lecturers concerned.

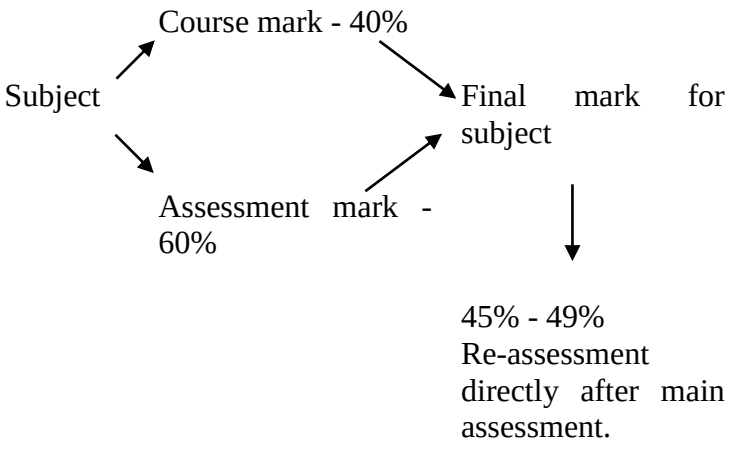
10. ASSESSMENT MODEL FOR ALL PROGRAMMES: 2014

Unless otherwise determined by a resolution of the Senate:

1. **Year subjects**



2. **Semester subjects**



10.1. ASSESSMENT AND RESULTS (ALL faculties unless otherwise specified)

10.1.1 A Subject is considered a credit, and therefore the following provisions apply:A student must pass any subject that is a prerequisite for another subject before he/she may register for the next level of the subject concerned.

- The pass requirements for a specific subject are as follows: A result is determined from a calculated average of tests and assessment opportunities. The minimum pass mark per subject is 50%. The minimum final mark needed to pass a subject with distinction is 75%.
- **Please note that once a student has been granted a re-assessment or a special assessment as a result of illness or some other reason, no such additional assessment will be granted.**

10.2 THE 2014 RULES FOR ALL PROGRAMMES:

10.2.1 A sub-minimum mark of 50% for all Engineering programmes accumulated for practical work and projects in specified subjects is compulsory to gain access to the relevant assessment session and to pass the subject. This rule applies to all those subjects identified as such in the study guides.

10.2.2 An admission mark of at least 40% is required for main assessments.

10.2.3 A re-assessment is granted to a candidate who has achieved a final mark of 45% - 49% in a subject. The re-assessment of a year subject – covering the subject content of the entire year – takes place directly after the main assessment in November. The re-assessment of semester subjects takes place immediately after the main assessment in June, while the re-assessment of second-semester and year subjects takes place in November.

Re-assessment will not be granted in continuous assessment subjects.

11. ACCREDITATION STATUS OF ENGINEERING LEARNING PROGRAMMES

The following learning programmes are accredited by the Engineering Council of South Africa:

- Civil Engineering
- Computer Systems Engineering
- Electrical Engineering
- Mechanical Engineering

12. GENERAL

The student may only enrol for the second-, third- or fourth-year level instructional offerings of a learning programme provided he/she has passed the first-, second- or third-year level respectively.

13. THE FOLLOWING HIGHER CERTIFICATE PROGRAMMES ARE OFFERED IN THE FACULTY:

Higher Certificate: Renewable Energy Technologies

14. THE FOLLOWING NATIONAL DIPLOMA PROGRAMMES ARE OFFERED IN THE FACULTY:

National Diploma: Building
National Diploma: Engineering: Civil
National Diploma: Engineering: Computer Systems
National Diploma: Engineering: Electrical (HC)
National Diploma: Engineering: Electrical (Electronic LC)
National Diploma: Engineering: Mechanical
National Diploma: Information Technology (Software Development)
National Diploma: Information Technology (Web and Application Development)

15. THE FOLLOWING NATIONAL DIPLOMA EXTENDED CURRICULUM PROGRAMMES (ECP) ARE OFFERED IN THE FACULTY:

National Diploma: Engineering: Civil ECP
National Diploma: Engineering: Electrical (HC) ECP
National Diploma: Engineering: Electrical (Electronic LC) ECP
National Diploma: Engineering: Mechanical ECP
National Diploma: Information Technology ECP (Software Development)
National Diploma: Information Technology ECP (Web and Application Development)

16. THE FOLLOWING BACCALAUREUS TECHNOLOGIAE PROGRAMMES ARE OFFERED IN THE FACULTY:

Baccalaureus Technologiae: Construction Management
Baccalaureus Technologiae: Engineering: Civil
Baccalaureus Technologiae: Engineering: Electrical
Baccalaureus Technologiae: Engineering: Mechanical
Baccalaureus Technologiae: Information Technology (Software Development)
Baccalaureus Technologiae: Information Technology (Web and Application Development)
Baccalaureus Technologiae: Quantity Surveying

17. THE FOLLOWING MAGISTER TECHNOLOGIAE PROGRAMMES ARE OFFERED IN THE FACULTY:

Magister Technologiae: Engineering: Civil
Magister Technologiae: Engineering: Electrical
Magister Technologiae: Engineering: Mechanical
Magister Technologiae: Information Technology

18. THE FOLLOWING DOCTOR TECHNOLOGIAE PROGRAMMES ARE OFFERED IN THE FACULTY:

Doctor Technologiae: Engineering: Civil
Doctor Technologiae: Engineering: Electrical
Doctor Technologiae: Engineering: Mechanical
Doctor Technologiae: Information Technology

19. HIGHER CERTIFICATE

19.1 HIGHER CERTIFICATE: RENEWABLE ENERGY TECHNOLOGIES IEHCRE

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 120
NQF LEVEL: 5
DURATION OF LEARNING PROGRAMME: 1 year

Instructional Offerings

1ST YEAR		INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1	**SEMESTER 2**		
LCS5011		Academic Literacy and Communication Studies	12
PPE5011		Applied Physics of Energy Conversion I	12
DLC5011		Basic Digital Literacy	6
EEN5011		Electrical Engineering I	12
WIS5011		Mathematics IA	6
LES5011		Solar Energy Systems I	12
	EIP5012	Electrical Installation and Storage	12
	HPP5012	Health and Safety: Principles and Practice	6
	WIS5012	Mathematics IB	6
	PGS5012	Power Generation and Storage	12
	LES5022	Solar Energy Systems II	12
	LWG5012	Small Wind Generation	12
		Total:	**120**

REMARKS

- All instructional offerings are compulsory.
- Any application for subject recognition will be considered ONLY for subjects completed at equivalent level, not lower.
- The qualification will be issued on completion of 120 credits.
- One intake per year in January.
- After successful completion of this qualification a Higher Certificate will be awarded during an official graduation ceremony at CUT.

Admission requirements:

For candidates who matriculated in 2007 and before:
In addition to the CUT general admission requirements a Senior Certificate with a minimum score of 27 on the CUT scoring scale, plus a minimum mark of 50% on Standard Grade or 40% on Higher Grade in both Mathematics and Physical Science is required.

For candidates who completed the NSC in 2008 and thereafter:
In addition to the CUT general admission requirements, a Senior Certificate with a minimum score of 27 on the CUT scoring scale, plus a minimum mark of 50% (level 4) in both Mathematics and Physical Science is required.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

20. NATIONAL DIPLOMAS

20.1 NATIONAL DIPLOMA: BUILDING ISNDBO

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Instructional Offerings

1ST YEAR	2ND YEAR	3RD YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
TBW10AI			Applied Building Science I	20
ECM12BI			Communication Skills I **(Semester 2)**	5
RTP11AI			Computer Applications I **(Semester 1)**	5
KON10AI			Construction Management I	20
KTG10AI			Construction Technology I	20
PRE1A			English Proficiency **and**	
PRE2B			English Proficiency	10
BRK10AI			Quantity Surveying I	20
TRO10AI			Site Surveying I	20
	TBW20ZI		Work-Integrated Learning: Building	60
	KON20AI		Construction Management II	20
	KTG20AI		Construction Technology II	20
	BRK20AI		Quantity Surveying II	20
		KOR30AI	Construction Accounting III	20
		KON30AI	Construction Management III	20
		KTG30AI	Construction Technology III	20
		PRY30AI	Price Analysis & Estimating III	20
		BRK30AI	Quantity Surveying III	20
		STR30AI	Structures & Concrete III	20
			Total:	**360**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Building Science I	20	Grade 12
English Proficiency	10	
Communication I (Semester 2)	5	Grade 12
Computer Applications I (Semester 1)	5	Grade 12
Construction Accounting III	20	Quantity Surveying I
Construction ManagementI	20	Grade 12
Construction Management II	20	Construction Management I
Construction Management III	20	Construction Management II
Construction Technology I	20	Grade 12
Construction Technology II	20	Construction Technology I
Construction Technology III	20	Construction Technology II
Price Analysis & Estimating III	20	Quantity Surveying I

Quantity Surveying I	20	Grade 12
Quantity Surveying II	20	Quantity Surveying I
Quantity Surveying III	20	Quantity Surveying II
Site Surveying I	20	Grade 12
Structures and Concrete III	20	Site Surveying I, Construction Technology II andApplied Building Science I
Work-Integrated Learning	60	All 1st year subjects

REMARKS

All instructional offerings are compulsory.

The minimum total credit value of theoretical instructional offerings is 240 credits. The Work-integrated Learning component, together with the project-based subjects of the second year, amounts to 120 credits.

Only one intake per year, in January.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.The following shall apply to academic Literacy and where a subject is denoted with an *: A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements:

For candidates who matriculated in 2007 and before:
A Senior Certificate with a score of 27 and higher on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in Mathematics.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 and higher on the CUT scoring scale, plus a minimum of 50% (Rating 4) in Mathematics or 70% (Rating 6) in Mathematical Literature, **and** a minimum of 50% (Rating 4) in any one of the following subjects: Accounting, Business Studies, Economics, Geography, Information Technology and Physical Science.

Students who do not fully comply with the stated admission requirements may be considered on strength of their academic record as well as the successful completion of a selection test, provided there is sufficient space available for admission.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

Students need to follow the curriculum as prescribed.

- The student is not permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level. (See prerequisites).
- A student must be enrolled for all prescribed second year instructional offerings simultaneously unless credits have already been obtained for any of the prescribed instructional offerings.

20.2 NATIONAL DIPLOMA: ENGINEERING: CIVIL ISNDLS

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for the student's progression towards becoming a competentpractising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;

- Identify, analyse, conduct and manage a project;

- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;

- Work both independently and as a member of a team, and also as a team leader;

- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;

- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and

- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

1ST YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1		SEMESTER 2			
January	July	January	July		
CAM11AI	CAM12AI			Applied Mechanics I	10
COM11AI	COM12AI			Computer Skills I	5
KMA11AI	KMA12AI			Construction Materials I	10
CDR11AI	CDR12AI			Drawing I	10
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2A			English Proficiency **and**	
	PRE1B			English Proficiency	0
CMC11AI	CMC12AI			Management (Civil) I	10
WIS11AI	WIS12AI			Mathematics I	10
		ECM11BI	ECM12BI	Communication Skills I	5
		KMT11AI	KMT12AI	Construction Methods I	10
		CDR21AI	CDR22AI	Drawing II	10
		CMC21AI	CMC22AI	Management (Civil) II	10
		WIS21AI	WIS22AI	Mathematics II	10
		CSU11AI	CSU12AI	Surveying I	10
		CTS21AI	CTS22AI	Theory of Structures II	10
				Total:	**120**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
CGE21AI	CGE22AI			Geotechnical Engineering II	10
SSL31AI	SSL32AI			Structural Steel & Timber Design III	10
CSA21AI	CSA22AI			Structural Analysis II	10
CSU21AI	CSU22AI			Surveying (Civil) II	10
CTE21AI	CTE22AI			Transportation Engineering II	10
CWE21AI	CWE22AI			Water Engineering II	10
		CDO31AI	CDO32AI	Documentation III	10
		CGE31AI	CGE32AI	Geotechnical Engineering III	10
		GWP31AI	GWP32AI	Reinforced Concrete & Masonry Design III	10
		CSA31AI	CSA32AI	Structural Analysis III	10
		CTE31AI	CTE32AI	Transportation Engineering III	10
		CWE31AI	CWE32AI	Water Engineering III	10
				Total:	**120**

3RD YEAR SEMESTERS 5 & 6		INSTRUCTIONAL OFFERINGS	CREDITS
January	**July**		
CEX11ZI	CEX12ZI	Work-Integrated Learning I	60
CEX21ZI	CEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Mechanics I	10	Grade 12
Communication Skills I	5	Grade 12
Computer Skills I	5	Grade 12
Construction Materials I	10	Grade 12
Construction Methods I	10	Grade 12
Documentation III	10	Management (Civil) II
Drawing I	10	Grade 12
Drawing II	10	Drawing I and Computer Skills I
Geotechnical Engineering II	10	Construction Materials I
Geotechnical Engineering III	10	Geotechnical Engineering II
Management (Civil) I	10	Grade 12
Management (Civil) II	10	Management (Civil) I
Mathematics I	10	Grade 12
Mathematics II	10	Mathematics I
Reinforced Concrete & Masonry Design III	10	Theory of Structures II
Structural Analysis II	10	Theory of Structures II
Structural Analysis III	10	Structural Analysis II
Structural Steel & Timber Design III	10	Theory of Structures II
Surveying I	10	Mathematics I
Surveying (Civil) II	10	Surveying I and Drawing II
Theory of Structures II	10	Applied Mechanics I
Transportation Engineering II	10	Drawing II and Surveying I
Transportation Engineering III	10	Transportation Engineering II
Water Engineering II	10	Applied Mechanics I and Mathematics I
Water Engineering III	10	Applied Mechanics I and Mathematics I And Drawing I
Work-Integrated Learning I	60	All Semester1 and 2 instructional offerings passed
Work-Integrated Learning II	60	Work-Integrated Learning I

REMARKS

All instructional offerings from semester 1 to 6 are compulsory.
The total credit value of all instructional offerings **must** add up to 240.
The total credit value for Work-Integrated Learning is 120.
The National Diploma will be issued upon completion of 360 credits.
Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements:

For candidates who matriculated in 2007 and before:
A Senior Certificate with a score of 27 and higher on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 and higher on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- The student is not permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level. (See prerequisites.)

20.3 NATIONAL DIPLOMA: ENGINEERING: COMPUTER SYSTEMS IENDCY

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for astudent's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;
- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;
- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;
- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;
- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

1ST YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1		SEMESTER 2			
January	July	January	July		
ECM11BI	ECM12BI			*Communication Skills I	5
COM11AI	COM12AI			*Computer Skills I	5
EDS11BI	EDS12BI			*Digital Systems I	10
EEN11AI	EEN12AI			*Electrical Engineering I	10
ELE11AI	ELE12AI			*Electronics I	10
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2A			English Proficiency **and**	
	PRE1B			English Proficiency	0
WIS11AI	WIS12AI			*Mathematics I	10
PRG11AI	PRG12AI			*Programming I	10
		EDS21BI	EDS22BI	*Digital Systems II	10
		ELE21AI	ELE22AI	*Electronics II	10
		ENT21AI	ENT22AI	Entrepreneurship II	10
		WIS21AI	WIS22AI	*Mathematics II	10
		NET21AI	NET22AI	*Network Systems II	10
		PRG21AI	PRG22AI	*Programming II	10
				Total:	**120**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
EDS31BI	EDS32BI			*Digital Systems III	10
ELA31BI	ELA32BI			*Electronics III	10
WIT31AI	WIT32AI			Mathematical Applications III	10
NET31AI	NET32AI			*Network Systems III	10
PRG31AI	PRG32AI			*Programming III	10
SYS21AI	SYS22AI			*Systems Analysis II	10
		DAT31BI	DAT32BI	*Database Principles III	10
		EDP31AI	EDP32AI	*Design Project III	10
		LOG31BI	LOG32BI	*Logic Design III	10
		MIP31BI	MIP32BI	Microprocessors III	10
		OPT31AI	OPT32AI	*Operating Systems III	10
		SOF31BI	SOF32BI	*Software Engineering III	10
				Total:	**120**

3RD YEAR		INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTERS 5 & 6			
January	July		
EXP11ZI	EXP12ZI	*Work-Integrated Learning I	60
EXP21ZI	EXP22ZI	*Work-Integrated Learning II	60
		Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Communication Skills I	5	Grade 12
Computer Skills I	5	Grade 12
Database Principles III	10	Programming II
Design Project III	10	Electronics II, Digital Systems II, Programming II
Digital Systems I	10	Grade 12
Digital Systems II	10	Digital Systems I
Digital Systems III	10	Digital Systems II
Electrical Engineering I	10	Grade 12
Electronics I	10	Grade 12
Electronics II	10	Electronics I
Electronics III	10	Electronics II
Entrepreneurship II	10	Grade 12
Logic Design III	10	Digital Systems II
Mathematical Applications III	10	Mathematics II
Mathematics I	10	Grade 12
Mathematics II	10	Mathematics I
Microprocessors III	10	Digital Systems III
Network Systems II	10	Grade 12
Network Systems III	10	Network Systems II (CCNA1)
Operating Systems III	10	Network Systems III (CCNA2)
Programming I	10	Grade 12
Programming II	10	Programming I
Programming III	10	Programming II
Software Engineering III	10	Systems Analysis II
Systems Analysis II	10	Programming I
Work-Integrated Learning I	60	Completion of all Semester 1 and Semester 2 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I

REMARKS

*Compulsory instructional offerings.
The total credit value of all theoretical instructional offerings **must** add up to 240.
The total credit value for Work-Integrated Learning is 120.
The National Diploma will be issued upon completion of 360 credits.

One intake per year, in January.

The student may only embark on Work-Integrated Learning upon completion of the first year of theoretical study.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this

specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Senior Certificate with a score of 27or higher on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 or higher on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- The student is not permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.

20.4 NATIONAL DIPLOMA: ENGINEERING: ELECTRICAL (HC) IENDTS

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;

- Identify, analyse, conduct and manage a project;

- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;

- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;

- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and

- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

1ST YEAR				**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1		**SEMESTER 2**			
January	**July**	**January**	**July**		
ECM11BI	ECM12BI			*Communication Skills I	6
COM11AI	COM12AI			*Computer Skills I	6
EDS11BI	EDS12BI			Digital Systems I	12
EEN11AI	EEN12AI			*Electrical Engineering I	12
ELE11AI	ELE12AI			*Electronics I	12
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2A			English Proficiency **and**	
	PRE1B			English Proficiency	0
WIS11AI	WIS12AI			*Mathematics I	12
MEC11AI	MEC12AI			Mechanics I	12
		EDS21BI	EDS22BI	Digital Systems II	12
		EEN21AI	EEN22AI	*Electrical Engineering II	12
		ELE21AI	ELE22AI	*Electronics II	12
		WIS21AI	WIS22AI	*Mathematics II	12
		EMD11AI	EMD12AI	Mechanical Technology I	12
		EPR11AI	EPR12AI	Projects I	12
		MSM21AI	MSM22AI	Strength of Materials II	10
				Total:	**120**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
EDS31BI	EDS32BI			Digital Systems III	12
EEN31AI	EEN32AI			Electrical Engineering III	12
EMJ31AI	EMJ32AI			Electrical Machines III	12
EKM21AI	EKM22AI			Electronic Communication II	12
ELA31BI	ELA32BI			Electronics III	12
EID21AI	EID22AI			Industrial Electronics II	12
WIS31AI	WIS32AI			Mathematics III	12
EMD21AI	EMD22AI			Mechanical Technology II	12
EPR21AI	EPR22AI			Projects II	12
MSM31BI	MSM32BI			Strength of Materials III	10
		MSK31AI	MSK32AI	Applied Strength of Materials III	10
		ECN31BI	ECN32BI	Control Systems III	12
		EDP31HI	EDP32HI	*Design Project III **(Heavy Current)**	12
		EBE31AI	EBE32AI	Electrical Protection III	12
		ELT31AI	ELT32AI	Electronic Applications III	12
		LOG31BI	LOG32BI	Logic Design III	12
		EMD31AI	EMD32AI	Mechanical Technology III	12
		EPE31AI	EPE32AI	Power Electronics III	12
		ERE31AI	ERE32AI	Radio Engineering III	12
		ESO21AI	ESO22AI	Software Design II	12
				Total:	**120**

3RD YEAR SEMESTERS 5 & 6		INSTRUCTIONAL OFFERINGS	CREDITS
January	July		
EEX11ZI	EEX12ZI	Work-Integrated Learning I	60
EEX21ZI	EEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Strength of Materials III	10	Strength of Materials III
Communication Skills I	6	Grade 12
Computer Skills I	6	Grade 12
Control Systems III	12	Mathematics III and Electronics II
Design Project III	12	Electronics II and Projects II or Electrical Machines II and Electrical Engineering II
Digital Systems I	12	Grade 12
Digital Systems II	12	Digital Systems I
Digital Systems III	12	Digital Systems II
Electrical Distribution III	12	Electrical Engineering II
Electrical Engineering I	12	Grade 12
Electrical Engineering II	12	Electrical Engineering I
Electrical Engineering III	12	Electrical Engineering II

Electrical Machines II	12	Electrical Engineering I
Electrical Machines III	12	Electrical Machines II
Electrical Protection III	12	Electrical Engineering II and Electronics II
Electronic Applications III	12	Electronics III
Electronic Communication II	12	Electrical Engineering I and Electronics II
Electronics I	12	Grade 12
Electronics II	12	Electronics I
Electronics III	12	Electronics II
Industrial Electronics II	12	Electronics II and Mathematics II
Logic Design III	12	Digital Systems II
Mathematics I	12	Grade 12
Mathematics II	12	Mathematics I
Mathematics III	12	Mathematics II
Mechanical Technology I	12	Mechanics I
Mechanical Technology II	12	Mechanical Technology I
Mechanical Technology III	12	Mechanical Technology II
Mechanics I	12	Grade 12
Power Electronics III	12	Industrial Electronics II
Projects I	12	Electronics I
Projects II	12	Projects I and Electronics II
Radio Engineering III	12	Electronic Communication II
Software Design II	12	Computer Skills I
Strength of Materials II	10	Mechanics I
Strength of Materials III	10	Strength of Materials II
Work-Integrated Learning I	60	Successful completion of all Semester 1 and Semester 2 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I

REMARKS

*Compulsory instructional offerings.
The total credit value of all instructional offerings **must** add up to 240.
The total credit value for Work-Integrated Learning is 120.
The National Diploma will be issued upon completion of 360 credits.

At least 50 credits must be earned in level-III instructional offerings.

A maximum of 50 credits in any Engineering-related learning programme may be presented for semesters 1 to 4.

Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 or higher on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- The student is not permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.

20.5 NATIONAL DIPLOMA: ENGINEERING: ELECTRICAL (ELECTRONIC LC) IENDLC

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;

- Identify, analyse, conduct and manage a project;

- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;

- Work both independently and as a member of a team, and also as a team leader;

- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;

- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and

- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

1ST YEAR				**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1		**SEMESTER 2**			
January	**July**	**January**	**July**		
ECM11BI	ECM12BI			*Communication Skills I	6
COM11AI	COM12AI			*Computer Skills I	6
EDS11BI	EDS12BI			Digital Systems I	12
EEN11AI	EEN12AI			*Electrical Engineering I	12
ELE11AI	ELE12AI			*Electronics I	12
PRE1A PRE2B				English Proficiency **and** English Proficiency	0
	PRE2A PRE1B			English Proficiency **and** English Proficiency	0
WIS11AI	WIS12AI			*Mathematics I	12
		EDS21BI	EDS22BI	Digital Systems II	12
		EEN21AI	EEN22AI	*Electrical Engineering II	12
		EMJ21AI	EMJ22AI	Electrical Machines II	12
		ELE21AI	ELE22AI	*Electronics II	12
		WIS21AI	WIS22AI	*Mathematics II	12
		EPR11AI	EPR12AI	Projects I	12
				Total:	**120**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
EDS31BI	EDS32BI			Digital Systems III	12
EEN31AI	EEN32AI			Electrical Engineering III	12
EMJ31AI	EMJ32AI			Electrical Machines III	12
EKM21AI	EKM22AI			Electronic Communication II	12
ELA31BI	ELA32BI			Electronics III	12
EID21AI	EID22AI			Industrial Electronics II	12
WIS31AI	WIS32AI			Mathematics III	12
EPR21AI	EPR22AI			Projects II	12
		ECN31BI	ECN32BI	Control Systems III	12
		EDP31LI	EDP32LI	*Design Project III **(Light Current)**	12
		EVE31AI	EVE32AI	Electrical Distribution III	12
		EBE31AI	EBE32AI	Electrical Protection III	12
		ELT31AI	ELT32AI	Electronic Applications III	12
		LOG31BI	LOG32BI	Logic Design III	12
		EPE31AI	EPE32AI	Power Electronics III	12
		ERE31AI	ERE32AI	Radio Engineering III	12
		ESO21AI	ESO22AI	Software Design II	12
				Total:	**120**

3RD YEAR SEMESTERS 5 & 6		INSTRUCTIONAL OFFERINGS	CREDITS
January	July		
EEX11ZI	EEX12ZI	Work-Integrated Learning I	60
EEX21ZI	EEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Strength of Materials III	10	Strength of Materials III
Communication Skills I	6	Grade 12
Computer Skills I	6	Grade 12
Control Systems III	12	Mathematics III and Electronics II
Design Project III	12	Electronics II and Projects II or Electrical Machines II and Electrical Engineering II
Digital Systems I	12	Grade 12
Digital Systems II	12	Digital Systems I
Digital Systems III	12	Digital Systems II
Electrical Distribution III	12	Electrical Engineering II
Electrical Engineering I	12	Grade 12
Electrical Engineering II	12	Electrical Engineering I
Electrical Engineering III	12	Electrical Engineering II
Electrical Machines II	12	Electrical Engineering I
Electrical Machines III	12	Electrical Machines II
Electrical Protection III	12	Electrical Engineering II and Electronics II

Electronic Applications III	12	Electronics III
Electronic Communication II	12	Electrical Engineering I and Electronics II
Electronics I	12	Grade 12
Electronics II	12	Electronics I
Electronics III	12	Electronics II
Industrial Electronics II	12	Electronics II and Mathematics II
Logic Design III	12	Digital Systems II
Mathematics I	12	Grade 12
Mathematics II	12	Mathematics I
Mathematics III	12	Mathematics II
Mechanical Technology I	12	Mechanics I
Mechanical Technology II	12	Mechanical Technology I
Mechanical Technology III	12	Mechanical Technology II
Mechanics I	12	Grade 12
Power Electronics III	12	Industrial Electronics II
Projects I	12	Electronics I
Projects II	12	Projects I and Electronics II
Radio Engineering III	12	Electronic Communication II
Software Design II	12	Computer Skills I
Strength of Materials II	10	Mechanics I
Strength of Materials III	10	Strength of Materials II
Work-Integrated Learning I	60	Successful completion of all Semester 1 and Semester 2 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I

REMARKS

*Compulsory instructional offerings.
The total credit value of all instructional offerings **must** add up to 240.
The total credit value for Work-Integrated Learning is 120.
The National Diploma will be issued upon completion of 360 credits.

At least 50 credits must be earned in level-III instructional offerings.

A maximum of 50 credits in any Engineering-related learning programme may be presented for semesters 1 to 4.

Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order. A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 or higher on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- The student is not permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.

20.6 NATIONAL DIPLOMA: ENGINEERING: MECHANICAL IMNDNG

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for astudent's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;
- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

1ST YEAR				**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1		**SEMESTER 2**			
January	**July**	**January**	**July**		
EMC11BI	EMC12BI			Communication Skills I	10
RPV11AI	RPV12AI			Computer & Programming Skills I	10
PRE1A PRE2B				English Proficiency **and** English Proficiency	 0
	PRE1A PRE2B WIS12AI			English Proficiency **and** English Proficiency Mathematics I	 0 10
MDR11AI MAN11AI	MDR12AI MAN12AI			Mechanical Engineering Drawing I Mechanical Manufacturing Engineering I	10 10
MEC11AI	MEC12AI			Mechanics I	10
		MEL11AI MFM21AI	MEL12AI MFM22AI	Electrotechnology I Fluid Mechanics II	10 10
		WIS21AI	WIS22AI	Mathematics II	10
		MEM21AI MSM21AI	MEM22AI MSM22AI	Mechanics of Machines II Strength of Materials II	10 10
		MTH21AI	MTH22AI	Thermodynamics II	10
				Total:	**120**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
MFM31BI	MFM32BI			Fluid Mechanics III	10
WIS31AI	WIS32AI			Mathematics III	10
MED21AI	MED22AI			Mechanical Engineering Design II	10
MEM31BI	MEM32BI			Mechanics of Machines III	10
MSM31BI	MSM32BI			Strength of Materials III	10
MTB31BI	MTB32BI			Thermodynamics III	10
		MSK31AI	MSK32AI	Applied Strength of Materials III	10
		MEL21AI	MEL22AI	Electrotechnology II	10
		MHM31AI	MHM32AI	Hydraulic Machines III	10
		MED31BI	MED32BI	Mechanical Engineering Design III	10
		MST31AI	MST32AI	Steam Plant III	10
		MTM31AI	MTM32AI	Theory of Machines III	10
				Total:	**120**

3RD YEAR SEMESTERS 5 & 6		INSTRUCTIONAL OFFERINGS	CREDITS
January	July		
MEX11ZI	MEX12ZI	Work-Integrated Learning I	60
MEX21ZI	MEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Strength of Materials III	10	Strength of Materials III
Communication Studies I	10	Grade 12
Computer & Programming Skills I	10	Grade 12
Electrotechnology I	10	Grade 12
Electrotechnology II	10	Electrotechnology I
Fluid Mechanics II	10	Mechanics I
Fluid Mechanics III	10	Fluid Mechanics II
Hydraulic Machines III	10	Fluid Mechanics III
Mathematics I	10	Grade 12
Mathematics II	10	Mathematics I
Mathematics III	10	Mathematics II
Mechanical Engineering Design II	10	Mechanics I
Mechanical Engineering Design III	10	Mechanical Engineering Design II
Mechanical Engineering Drawing I	10	Grade 12
Work-Integrated Learning I	60	Successful completion of all semesters 1 – 4 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I
Mechanical Manufacturing Engineering I	10	Grade 12

Mechanics I	10	Grade 12
Mechanics of Machines II	10	Mechanics I
Mechanics of Machines III	10	Mechanics of Machines II
Steam Plant III	10	Thermodynamics III
Strength of Materials II	10	Mechanics I
Strength of Materials III	10	Strength of Materials II
Theory of Machines III	10	Mechanics of Machines III
Thermodynamics II	10	Mechanics I
Thermodynamics III	10	Thermodynamics II

REMARKS

The total credit value of all instructional offerings **must** add up to 240.
The total credit value for Work-Integrated Learning is 120.
The National Diploma will be issued upon completion of 360 credits.
A maximum of 50 credits may be earned in a selection of suitable instructional offerings from any other Engineering-related learning programme approved by faculty management.

Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Senior Certificate with a score of 27 or higher on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 or higher on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- The student is not permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.

20.7 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY (SOFTWARE DEVELOPMENT) EINDSD

This learning programme will be offered in Bloemfontein and Welkom.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Instructional Offerings

1ST YEAR	2ND YEAR	3RD YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
OPG10BB			Development Software I	30
PRE1A			English Proficiency **and**	9
PRE2B			English Proficiency	9
INL10DB			Information Systems I	30
ITV10AB			Information Technology Skills I	30
ITW10AB			IT Mathematics I	30
	OPG20BB		Development Software II	30
	INL20DB		Information Systems II	30
	TPG10AB		Technical Programming I	30
	SPG11AB		System Software I **(Semester 1)**	15
	SPG12AB		System Software I **(Semester 2)**	15
		OPG30BB	Development Software III	30
		INL30EB	Information Systems III	30
		TPG20AB	Technical Programming II	30
		SPG21CB	System Software II **(Semester 1) or**	15
		GID10AB	Graphical User Interface Design I	30
		SPG22CB	System Software II **(Semester 2) or**	15
		GID10AB	Graphical User Interface Design I	30
			Total:	**360**

REMARKS

Thirteen instructional offerings are to be taken over a period of three years.
The National Diploma will be issued upon completion of 360 credits.

Only one intake per year, in January.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Optional instructional offerings

Refer to the optional instructional offerings listed under "instructional offerings".

Admission requirements

Admission to this learning programme is subject to selection.

For candidates who matriculated in 2007 and before:
A Grade 12 National Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum of 60% on Standard Grade or 40% on Higher Grade in Mathematics or Computer Science. A candidate must also successfully complete the selection process for admission.

For candidates who completed the NSC in 2008 and thereafter:
A National Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum pass mark of 40% (Rating 3) in Mathematics or Computer Science or 60% (Rating 5) in Mathematical Literacy.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

Refer to the heading "General", point 12 of this chapter.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.

A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Development Software I	30	Grade 12
English Proficiency	9	Grade 12
Information Systems I	30	Grade 12
Information Technology Skills I	30	Grade 12
IT Mathematics I	30	Grade 12
Development Software II	30	Development Software I
Information Systems II	30	Development Software I and Information Systems I
Technical Programming I	30	Development Software I
System Software I (Semester 1)	15	Information Systems I
System Software I (Semester 2)	15	System Software I (Semester 1)
Development Software III	30	Development Software II
Information Systems III	30	Information Systems II
Technical Programming II	30	Technical Programming I
System Software II (Semester 1)	15	System Software I (Semester 2)
System Software II (Semester II)	15	System Software II (Semester I)
Graphical User Interface Design I	30	Development Software I

20.8 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY (WEB AND APPLICATION DEVELOPMENT) BCNDIA

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 3 years

Instructional Offerings

1ST YEAR	2ND YEAR	3RD YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
OPG10BB			Development Software I	30
PRE1A			English Proficiency **and**	9
PRE2B			English Proficiency	9
INL10DB			Information Systems I	30
ITV10AB			Information Technology Skills I	30
ITW10AB			IT Mathematics I	30
	INP20AB		Internet Programming II	30
	INL20DB		Information Systems II	30
	WEB20AB		Web Management II	30
	SPG11AB		Systems Software I **(Semester 1)**	15
	SPG12AB		Systems Software I **(Semester 2)**	15
		INP30AB	Internet Programming III	30
		INL30EB	Information Systems III	30
		WEB30AB	Web Management III	30
		GID10AB	Graphical User Interface Design I	30
			Total:	**360**

REMARKS

Thirteen instructional offerings are to be taken over a period of three years.
The National Diploma will be issued upon completion of 360 credits.

Only one intake per year, in January.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Admission requirements

Admission to this learning programme is subject to selection.

<u>For candidates who matriculated in 2007 and before</u>:
A Grade 12 National Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum of 60% on Standard Grade or 40% on Higher Grade in Mathematics or Computer Science. A candidate must also successfully complete the selection process for admission.

<u>For candidates who completed the NSC in 2008 and thereafter</u>:
A National Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum pass mark of 40% (Rating 3) in Mathematics or Computer Science or 60% (Rating 5) in Mathematical Literacy.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements approved by Senate.

Optional instructional offerings

Refer to the optional instructional offerings listed under "instructional offerings".

PREREQUISITES

Refer to the heading "General", point 12 of this chapter.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.

A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Development Software I	30	Grade 12
English Proficiency	9	Grade 12
Information Systems I	30	Grade 12
Information Technology Skills I	30	Grade 12
IT Mathematics I	30	Grade 12
Internet Programming II	30	Development Software I
Information Systems II	30	Development Software I and Information Systems I
Web Management II	30	Development Software I
System Software I (Semester 1)	15	Information Systems I
System Software I (Semester 2)	15	System Software I (Semester 1)
Information Systems III	30	Information Systems II
Internet Programming III	30	Internet Programming II
Web Management III	30	Web Management II
Graphical User Interface Design I	30	Development Software I

21. NATIONAL DIPLOMAS : EXTENDED CURRICULUM PROGRAMMES

21.1 NATIONAL DIPLOMA: ENGINEERING: CIVIL ECP EXNDCE

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 4 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and professional recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;
- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;
- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;
- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;
- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

1ST YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1		SEMESTER 2			
January	July	January	July		
ECM11BI	ECM12BI			Communication Skills I	5
COM11AI	COM12AI			Computer Skills	5
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2B			English Proficiency **and**	
	PRE1A			English Proficiency	0
INX01CP	INX02CP			Industrial Experience	6
LSS01CP	LSS02CP			Life Skills	4
WIS01CP	WIS02CP			Mathematics	10
FIS01CP	FIS02CP			Physics	10
		CAM11AI	CAM12AI	Applied Mechanics I	10
		KMA11AI	KMA12AI	Construction Materials I	10
		CDR11AI	CDR12AI	Drawing I	10
		CMC11AI	CMC12AI	Management (Civil) I	10
		WIS11AI	WIS12AI	Mathematics I	10
				Total:	**90**

2ND YEAR				INSTRUCTIONAL OFFERINGS	
SEMESTER 3		SEMESTER 4			
January	July	January	July		
KMT11AI	KMT12AI			Construction Methods I	10
CDR21AI	CDR22AI			Drawing II	10
CMC21AI	CMC22AI			Management (Civil) II	10
WIS21AI	WIS22AI			Mathematics II	10
CSU11AI	CSU12AI			Surveying I	10
		CGE21AI	CGE22AI	Geotechnical Engineering II	10
		CSU21AI	CSU22AI	Surveying (Civil) II	10
		CTS21AI	CTS22AI	Theory of Structures II	10
		CTE21AI	CTE22AI	Transportation Engineering II	10
		CWE21AI	CWE22AI	Water Engineering II	10
				Total:	**100**

3RD YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 5		SEMESTER 6			
January	July	January	July		
CDO31AI	CDO32AI			Documentation III	10
CGE31AI	CGE32AI			Geotechnical Engineering III	10
SSL31AI	SSL32AI			Structural Steel & Timber Design III	10
CSA21AI	CSA22AI			Structural Analysis II	10
		GWP31AI	GWP32AI	Reinforced Concrete & Masonry Design III	10
		CSA31AI	CSA32AI	Structural Analysis III	10
		CTE31AI	CTE32AI	Transportation Engineering III	10
		CWE31AI	CWE32AI	Water Engineering III	10
				Total:	**80**

4TH YEAR SEMESTERS 7 & 8		INSTRUCTIONAL OFFERINGS	CREDITS
January	**July**		
CEX11ZI	CEX12ZI	Work-Integrated Learning I	60
CEX21ZI	CEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

REMARKS

- All instructional offerings from semesters 1 to 8 are compulsory.
- The minimum total credit value of all instructional offerings **must** add up to 240.
- The total credit value for Work-Integrated Learning is 120.
- The National Diploma will be issued upon completion of 360 credits.
- Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.

A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Grade 12 certificate with a score of 21- 26 on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics. A candidate must also successfully complete the selection process for admission.

For candidates who matriculated in 2008 and thereafter:
A National Senior Certificate with a score of 21- 26 on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- A student will not be permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.
- The student must pass all instructional offerings of the first semester of the extended curriculum in order to continue with his/her studies.

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Mechanics I	10	Grade 12
Communication Skills I	5	Grade 12
Computer Skills I	5	Grade 12
Construction Materials I	10	Grade 12
Construction Methods I	10	Grade 12
Documentation III	10	Management (Civil) II
Drawing I	10	Grade 12
Drawing II	10	Drawing I and Computer Skills I
Geotechnical Engineering II	10	Construction Materials I
Geotechnical Engineering III	10	Geotechnical Engineering II
Industrial Experience 0	6	Grade 12
Life Skills 0	4	Grade 12
Management (Civil) I	10	Grade 12
Management (Civil) II	10	Management (Civil) I
Mathematics 0	10	Grade 12 Mathematics
Mathematics I	10	Mathematics 0
Mathematics II	10	Mathematics I
Physics 0	10	Grade 12 Physical Science
Reinforced Concrete and Masonry Design III	10	Theory of Structures II
Structural Analysis II	10	Theory of Structures II
Structural Analysis III	10	Structural Analysis II
Structural Steel and Timber Design III	10	Theory of Structures II
Surveying I	10	Mathematics I
Surveying (Civil) II	10	Surveying I and Drawing II
Theory of Structures II	10	Applied Mechanics I
Transportation Engineering II	10	Drawing II and Surveying I
Transportation Engineering III	10	Transportation Engineering II
Water Engineering II	10	Applied Mechanics I and Mathematics I
Water Engineering III	10	Applied Mechanics I and Mathematics I and Drawing I
Work-Integrated Learning I	60	Successful completion of all Semester 1, Semester 2 and Semester 3 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I

21.2 NATIONAL DIPLOMA: ENGINEERING: ELECTRICAL (HC) ECP EXNDEL

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 4 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and professional recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;
- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering (Electrical Engineering);
- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;
- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;
- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings:

1ST YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1		SEMESTER 2			
January	July	January	July		
ECM11BI	ECM12BI			*Communication Skills I	5
COM11AI	COM12AI			*Computer Skills	5
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2B			English Proficiency **and**	
	PRE1A			English Proficiency	0
INX01CP	INX02CP			Industrial Experience	6
LSS01CP	LSS02CP			Life Skills	4
WIS01CP	WIS02CP			Mathematics	10
FIS01CP	FIS02CP			Physics	10
		EDS11BI	EDS12BI	Digital Systems I	10
		EEN11AI	EEN12AI	*Electrical Engineering I	10
		ELE11AI	ELE12AI	*Electronics I	10
		WIS11AI	WIS12AI	*Mathematics I	10
		MEC11AI	MEC12AI	Mechanics I	10
				Total:	**90**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
EDS21BI	EDS22BI			Digital Systems II	10
EEN21AI	EEN22AI			*Electrical Engineering II	10
ELE21AI	ELE22AI			*Electronics II	10
WIS21AI	WIS22AI			*Mathematics II	10
EMD11AI	EMD12AI			Mechanical Technology I	10
		EDS31BI	EDS32BI	Digital Systems III	10
		EEN31AI	EEN32AI	Electrical Engineering III	10
		ELA31BI	ELA32BI	Electronics III	10
		WIS31AI	WIS32AI	Mathematics III	10
		EPR11AI	EPR12AI	Projects I	10
		MSM21AI	MSM22AI	Strength of Materials II	10
				Total:	**100**

3RD YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 5		SEMESTER 6			
January	**July**	**January**	**July**		
EVE31AI	EVE32AI			Electrical Distribution III	10
EMJ31AI	EMJ32AI			Electrical Machines III	10
ELT31AI	ELT32AI			Electronic Applications III	10
EKM21AI	EKM22AI			Electronic Communication II	10
EID21AI	EID22AI			Industrial Electronics II	10
LOG31BI	LOG32BI			Logic Design III	10
EMD21AI	EMD22AI			Mechanical Technology II	10
EPR21AI	EPR22AI			Projects II	10
MSM31BI	MSM32BI			Strength of Materials III	10
		MSK31AI	MSK32AI	Applied Strength of Materials III	10
		ECN31BI	ECN32BI	Control Systems III	10
		EDP31HI	EDP32HI	*Design Project III **(Heavy Current)**	10
		EBE31AI	EBE32AI	Electrical Protection III	10
		EMD31AI	EMD32AI	Mechanical Technology III	10
		EPE31AI	EPE32AI	Power Electronics III	10
		ERE31AI	ERE32AI	Radio Engineering III	10
		ESO21AI	ESO22AI	Software Design II	10
				Total:	**80**

4TH YEAR SEMESTERS 7 & 8		INSTRUCTIONAL OFFERINGS	CREDITS
January	**July**		
EEX11ZI	EEX12ZI	Work-Integrated Learning I	60
EEX21ZI	EEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

REMARKS

- All instructional offerings indicated with an asterisk (*) are compulsory.
- The minimum total credit value of all instructional offerings **must** add up to 240.
- The total credit value for Work-Integrated Learning is 120.
- The National Diploma will be issued upon completion of 360 credits, which **may** include a maximum of 60 credits from any Engineering-related learning programme. It **must**,however, include a minimum of 60 credits of formal time at level III.
- Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Grade 12 National Senior Certificate with a minimumscore of 27 on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics. A candidate must also successfully complete the selection process for admission.

For candidates who matriculated in 2008 and thereafter:
A National Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Candidates with a score of 23 - 26 on the CUT scoring scale must successfully complete the selection process for admission that could include the writing of an admission selection test. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- A student will not be permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.
- The student must pass all instructional offerings of the first semester of the extended curriculum in order to continue with his/her studies.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Communication Skills I	5	Grade 12
Computer Skills I	5	Grade 12
Control Systems III	10	Mathematics III and Electronics III
Design Project III	10	Electronics II and Projects II
Digital Systems I	10	Grade 12
Digital Systems II	10	Digital Systems I
Digital Systems III	10	Digital Systems II
Electrical Engineering I	10	Grade 12
Electrical Engineering II	10	Electrical Engineering I
Electrical Engineering III	10	Electrical Engineering II
Electronic Applications III	10	Electronics III
Electronic Communication II	10	Electrical Engineering II and Electronics II
Electronics I	10	Grade 12
Electronics II	10	Electronics I
Electronics III	10	Electronics II
Industrial Experience 0	6	Grade 12
Life Skills 0	4	Grade 12
Logic Design III	10	Digital Systems II
Mathematics 0	10	Grade 12 Mathematics
Mathematics I	10	Mathematics 0
Mathematics II	10	Mathematics I
Mathematics III	10	Mathematics II
Physics 0	10	Grade 12 Physical Science
Projects I	10	Electronics I
Projects II	10	Projects I and Electronics II

Radio Engineering III	10	Electronic Communication II
Work-Integrated Learning I	60	Successful completion of all Semester 1, Semester 2 and Semester 3 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I

21.3 NATIONAL DIPLOMA: ENGINEERING: ELECTRICAL (ELECTRONIC LC) ECP EXNDEC

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 4 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and professional recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;
- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering (Electrical Engineering);
- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;
- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;
- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;

- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;

- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and

- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings:

1ST YEAR				**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1		**SEMESTER 2**			
January	**July**	**January**	**July**		
ECM11BI	ECM12BI			*Communication Skills I	5
COM11AI	COM12AI			*Computer Skills	5
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2B			English Proficiency **and**	
	PRE1A			English Proficiency	0
INX01CP	INX02CP			Industrial Experience	6
LSS01CP	LSS02CP			Life Skills	4
WIS01CP	WIS02CP			Mathematics	10
FIS01CP	FIS02CP			Physics	10
		EDS11BI	EDS12BI	Digital Systems I	10
		EEN11AI	EEN12AI	*Electrical Engineering I	10
		ELE11AI	ELE12AI	*Electronics I	10
		WIS11AI	WIS12AI	*Mathematics I	10
				Total:	**90**

2ND YEAR				**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 3		**SEMESTER 4**			
January	**July**	**January**	**July**		
EDS21BI	EDS22BI			Digital Systems II	10
EEN21AI	EEN22AI			*Electrical Engineering II	10
ELE21AI	ELE22AI			*Electronics II	10
WIS21AI	WIS22AI			*Mathematics II	10
		EDS31BI	EDS32BI	Digital Systems III	10
		EEN31AI	EEN32AI	Electrical Engineering III	10
		EMJ21AI	EMJ22AI	Electrical Machines II	10
		ELA31BI	ELA32BI	Electronics III	10
		WIS31AI	WIS32AI	Mathematics III	10
		EPR11AI	EPR12AI	Projects I	10
				Total:	**100**

3RD YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 5		SEMESTER 6			
January	July	January	July		
EVE31AI	EVE32AI			Electrical Distribution III	10
EMJ31AI	EMJ32AI			Electrical Machines III	10
ELT31AI	ELT32AI			Electronic Applications III	10
EKM21AI	EKM22AI			Electronic Communication II	10
EID21AI	EID22AI			Industrial Electronics II	10
LOG31BI	LOG32BI			Logic Design III	10
EPR21AI	EPR22AI			Projects II	10
		ECN31BI	ECN32BI	Control Systems III	10
		EDP31LI	EDP32LI	*Design Project III **(Light Current)**	10
		EBE31AI	EBE32AI	Electrical Protection III	10
		EPE31AI	EPE32AI	Power Electronics III	10
		ERE31AI	ERE32AI	Radio Engineering III	10
		ESO21AI	ESO22AI	Software Design II	10
				Total:	**80**

4TH YEAR		INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTERS 7 & 8			
January	July		
EEX11ZI	EEX12ZI	Work-Integrated Learning I	60
EEX21ZI	EEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

REMARKS

- All instructional offerings indicated with an asterisk (*) are compulsory.
- The minimum total credit value of all instructional offerings **must** add up to 240.
- The total credit value for Work-Integrated Learning is 120.
- The National Diploma will be issued upon completion of 360 credits, which **may** include a maximum of 60 credits from any Engineering-related learning programme. It **must**, however, include a minimum of 60 credits of formal time at level III.
- Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order. A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Grade 12 National Senior Certificate with a minimum score of 27 on the CUT scoring scale, plus a

minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics. A candidate must also successfully complete the selection process for admission.

For candidates who matriculated in 2008 and thereafter:
A National Senior Certificate with a score of 27 on the CUT scoring scale, plus a minimumpass mark of 50% (Rating 4) in both Mathematics and Physical Science. Candidates with a score of 23 - 26 on the CUT scoring scale must successfully complete the selection process for admission that could include the writing of an admission selection test. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

PREREQUISITES

- A student will not be permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.
- The student must pass all instructional offerings of the first semester of the extended curriculum in order to continue with his/her studies.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Communication Skills I	5	Grade 12
Computer Skills I	5	Grade 12
Control Systems III	10	Mathematics III and Electronics III
Design Project III	10	Electronics II and Projects II
Digital Systems I	10	Grade 12
Digital Systems II	10	Digital Systems I
Digital Systems III	10	Digital Systems II
Electrical Engineering I	10	Grade 12
Electrical Engineering II	10	Electrical Engineering I
Electrical Engineering III	10	Electrical Engineering II
Electronic Applications III	10	Electronics III
Electronic Communication II	10	Electrical Engineering II and Electronics II
Electronics I	10	Grade 12
Electronics II	10	Electronics I
Electronics III	10	Electronics II
Industrial Experience 0	6	Grade 12
Life Skills 0	4	Grade 12
Logic Design III	10	Digital Systems II
Mathematics 0	10	Grade 12 Mathematics
Mathematics I	10	Mathematics 0
Mathematics II	10	Mathematics I
Mathematics III	10	Mathematics II
Physics 0	10	Grade 12 Physical Science
Projects I	10	Electronics I
Projects II	10	Projects I and Electronics II
Radio Engineering III	10	Electronic Communication II
Work-Integrated Learning I	60	Successful completion of all Semester 1, Semester 2 and Semester 3 instructional offerings
Work-Integrated Learning II	60	Work-Integrated Learning I

21.4 NATIONAL DIPLOMA: ENGINEERING: MECHANICAL ECP EXNDMG

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 360
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 4 years

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technician. It is intended to subsequently empower the candidate engineering technician to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and professional recognition.

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving well-defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering (Mechanical Engineering);

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;

- Identify, analyse, conduct and manage a project;

- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;

- Work both independently and as a member of a team, and also as a team leader;

- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;

- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technician (National Diploma); and

- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings:

1ST YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1		SEMESTER 2			
January	July	January	July		
EMC11BI	EMC12BI			Communication Skills I	10
RPV11AI	RPV12AI			Computer & Programming Skills I	10
PRE1A				English Proficiency **and**	
PRE2B				English Proficiency	0
	PRE2B			English Proficiency **and**	
	PRE1A			English Proficiency	0
INX01CP	INX02CP			Industrial Experience	6
LSS01CP	LSS02CP			Life Skills	4
WIS01CP	WIS02CP			Mathematics	10
FIS01CP	FIS02CP			Physics	10
		WIS11AI	WIS12AI	Mathematics I	10
		MDR11AI	MDR12AI	Mechanical Engineering Drawing I	10
		MAN11AI	MAN12AI	Mechanical Manufacturing Engineering I	10
		MEC11AI	MEC12AI	Mechanics I	10
				Total:	**90**

2ND YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 3		SEMESTER 4			
January	July	January	July		
MEL11AI	MEL12AI			Electrotechnology I	10
MFM21AI	MFM22AI			Fluid Mechanics II	10
WIS21AI	WIS22AI			Mathematics II	10
MEM21AI	MEM22AI			Mechanics of Machines II	10
MSM21AI	MSM22AI			Strength of Materials II	10
		MFM31BI	MFM32BI	Fluid Mechanics III	10
		WIS31AI	WIS32AI	Mathematics III	10
		MED21AI	MED22AI	Mechanical Engineering Design II	10
		MEM31BI	MEM32BI	Mechanics of Machines III	10
		MTH21AI	MTH22AI	Thermodynamics II	10
				Total:	**100**

3RD YEAR				INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 5		SEMESTER 6			
January	July	January	July		
MEL21BI	MEL22BI			Electrotechnology II	10
MHM31AI	MHM32AI			Hydraulic Machines III	10
MSM31BI	MSM32BI			Strength of Materials III	10
MTB31BI	MTB32BI			Thermodynamics III	10
		MSK31AI	MSK32AI	Applied Strength of Materials III	10
		MED31BI	MED32BI	Mechanical Engineering Design III	10
		MST31AI	MST32AI	Steam Plant III	10
		MTM31AI	MTM32AI	Theory of Machines III	10
				Total:	**80**

4TH YEAR SEMESTERS 7 & 8		INSTRUCTIONAL OFFERINGS	CREDITS
January	**July**		
MEX11ZI	MEX12ZI	Work-Integrated Learning I	60
MEX21ZI	MEX22ZI	Work-Integrated Learning II	60
		Total:	**120**

REMARKS

- All instructional offerings from semesters 1 to 8, with the exception of Solution of Differential Equations, are compulsory.
- The minimum total credit value of all instructional offerings is 240.
- The total credit value for Work-Integrated Learning is 120.
- The National Diploma will be issued upon completion of 360 credits, which **may** include a maximum of 60 credits from any Engineering-related instructional programme. It **must**, however, include a minimum of 60 credits of formal time at level III.
- Two intakes per year, in January and July.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Admission requirements

For candidates who matriculated in 2007 and before:
A Grade 12 certificate with a score of 23 - 26 on the CUT scoring scale, plus a minimum of 50% on Standard Grade or 40% on Higher Grade in both Physical Science and Mathematics. A candidate must also successfully complete the selection process for admission.

For candidates who matriculated in 2008 and thereafter:
A National Senior Certificate with a score of 23 - 26 on the CUT scoring scale, plus a minimum pass mark of 50% (Rating 4) in both Mathematics and Physical Science. Mathematical Literacy will **not** be accepted.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

Optional instructional offerings

All instructional offerings are compulsory.

PREREQUISITES

- A student will not be permitted to continue with an instructional offering on the subsequent level before successfully completing the preceding level.
- The student must pass all instructional offerings of the first semester of the extended curriculum in order to continue with his/her studies.

Instructional offerings	Credits	Prerequisite instructional offerings
Applied Strength of Materials III	10	Strength of Materials III
Communication Studies I	10	Grade 12
Computer & Programming Skills I	10	Grade 12
Electrotechnology I	10	Grade 12
Electrotechnology II	10	Electrotechnology I
Fluid Mechanics II	10	Mechanics I
Fluid Mechanics III	10	Fluid Mechanics II
Hydraulic Machines III	10	Fluid Mechanics III
Industrial Experience 0	6	Grade 12
Life Skills 0	4	Grade 12
Mathematics 0	10	Grade 12 Mathematics
Mathematics I	10	Mathematics 0
Mathematics II	10	Mathematics I
Mathematics III	10	Mathematics II
Mechanical Engineering Design II	10	Mechanics I
Mechanical Engineering Design III	10	Mechanical Engineering Design II
Mechanical Engineering Drawing I	10	Grade 12
Mechanical Manufacturing Engineering I	10	Grade 12
Mechanics I	10	Grade 12
Mechanics of Machines II	10	Mechanics I
Mechanics of Machines III	10	Mechanics of Machines II
Physics 0	10	Grade 12 Physical Science
Steam Plant III	10	Thermodynamics III
Strength of Materials II	10	Mechanics I
Strength of Materials III	10	Strength of Materials II
Theory of Machines III	10	Mechanics of Machines III
Thermodynamics II	10	Mechanics I
Thermodynamics III	10	Thermodynamics II
Work-Integrated Learning I	10	Successful completion of all Semester 1 to Semester 6 instructional offerings
Work-Integrated Learning II	10	Work-Integrated Learning I

21.5 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY ECP (SOFTWARE DEVELOPMENT) EXNDIS

This learning programme will be offered in Bloemfontein and Welkom.

SAQA CREDITS: 415
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 4 years

Instructional Offerings

1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
PPC00FP				Programming Principles	15
LSK00FP				Life Skills	15
BSC00FP				Business Communication	15
PRE1A				English Proficiency **and**	9
PRE2B				English Proficiency	9
	OPG10BB			Development Software I	30
	INL10DB			Information Systems I	30
	ITV10AB			Information Technology Skills I	30
	ITW10AB			IT Mathematics I	30
		OPG20BB		Development Software II	30
		INL20DB		Information Systems II	30
		TPG10AB		Technical Programming I	30
		SPG11AB		System Software I **(Semester 1)**	15
		SPG12AB		System Software I **(Semester 2)**	15
			OPG30BB	Development Software III	30
			INL30EB	Information Systems III	30
			TPG20AB	Technical Programming II	30
			SPG21CB	System Software II **(Semester 1) or**	15
			GID10AB	Graphical User Interface Design I	30
			SPG22CB	System Software II **(Semester 2) or**	15
			GID10AB	Graphical User Interface Design I	30
				Total:	**415**

REMARKS

Sixteen instructional offerings are to be taken over a period of four years.

Only one intake per year, in January.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Admission requirements

For candidates who matriculated in 2007 and before:
Students with an M-score of between 21 and 27, with a Mathematics symbol lower than a C on Standard Grade or a D on Higher Grade without Computer Studies on Higher Grade, will be selected according to the outcome of a selection test.

For candidates who completed the NSC in 2008 and thereafter:
Students with an M-score between 21 and 27 on the CUT scoring scale with a mark lower than 40% (Rating 3) in either Mathematics or Information Technology, or 60% (Rating 5) in Mathematical Literacy, will be selected according to the outcome of a selection test.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

Admission to this learning programme is subject to selection.

PREREQUISITES

The student may only enrol for the second-, third- or fourth-year level of an instructional offering provided he/she has passed the first-, second- or third-year level respectively.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing the Academic Literacy programme.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Programming Principles	30	Grade 12
Life Skills	30	Grade 12
Business Communication	30	Grade 12
English Proficiency	9	Grade 12
Development Software I	30	Programming Principles
Information Systems I	30	Grade 12
Information Technology Skills I	30	Grade 12
IT Mathematics I	30	Grade 12
Development Software II	30	Development Software I
Information Systems II	30	Development Software I and Information Systems I
Technical Programming I	30	Development Software I
System Software I (Semester 1)	15	Information Systems I
System Software I (Semester 2)	15	System Software I (Semester 1)
Development Software III	30	Development Software II
Information Systems III	30	Information Systems II
Technical Programming II	30	Technical Programming I
System Software II (Semester 1)	15	System Software I (Semester 2)
System Software II (Semester 2)	15	System Software II (Semester 1)
Graphical User Interface Design I	30	Development Software I

21.6 NATIONAL DIPLOMA: INFORMATION TECHNOLOGY ECP (WEB AND APPLICATION DEVELOPMENT) EXNDIT

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 415
NQF LEVEL: 6
DURATION OF LEARNING PROGRAMME: 4 years

Instructional Offerings

1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
PPC00FP				Programming Principles	15
LSK00FP				Life Skills	15
BSC00FP				Business Communication	15
PRE1A				English Proficiency **and**	9
PRE2B				English Proficiency	9
	OPG10BB			Development Software I	30
	INL10DB			Information Systems I	30
	ITV10AB			Information Technology Skills I	30
	ITW10AB			IT Mathematics I	30
		INP20AB		Internet Programming II	30
		INL20DB		Information Systems II	30
		SPG11AB		System Software I **(Semester 1)**	15
		SPG12AB		System Software I **(Semester 2)**	15
		WEB20AB		Web Management II	30
			INP30AB	Internet Programming III	30
			INL30EB	Information Systems III	30
			GID10AB	Graphical User Interface Design I	30
			WEB30AB	Web Management III	30
				Total:	**415**

REMARKS

Sixteen instructional offerings are to be taken over a period of four years.

Only one intake per year, in January.

After successful completion of this qualification, a National Diploma will be awarded during an official graduation ceremony of CUT.

Admission requirements

For candidates who matriculated in 2007 and before:
Students with an M-score of between 21 and 27, with a Mathematics symbol lower than a C on Standard Grade or a D on Higher Grade without Computer Studies on Higher Grade, will be selected according to the outcome of a selection test.

For candidates who matriculated in 2008 and thereafter:
Students with an M-score between 21 and 27 on the CUT scoring scale with a mark lower than 40% (Rating 3) in either Mathematics or Information Technology, or 60% (Rating 5) in Mathematical Literacy, will be selected according to the outcome of a selection test.

Applicants in possession of the National Certificate Vocational (NCV) will be selected according to the selection requirements as approved by Senate.

Admission to this learning programme is subject to selection.

PREREQUISITES

The student may only enrol for the second-, third- or fourth-year level of an instructional offering provided he/she has passed the first-, second- or third-year level respectively.

Academic Literacy requires the successful completion of two instructional offerings, A and B, in this specific order.A distinction (75% or more) in instructional offering A ensures exemption from instructional offering B. A pass (without distinction) means that the student must pass instructional offering B in order to meet the prerequisite for the learning programme. Failing instructional offering A means that the student must reregister for instructional offering A in a subsequent semester.

No student will be allowed to graduate without completing theAcademic Literacy programme.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Programming Principles	30	Grade 12
Life Skills	30	Grade 12
Business Communication	30	Grade 12
English Proficiency	9	Grade 12
Development Software I	30	Programming Principles
Information Systems I	30	Grade 12
Information Technology Skills I	30	Grade 12
IT Mathematics I	30	Grade 12
Internet Programming II	30	Development Software I
Information Systems II	30	Development Software I and Information Systems I
Web Management I	30	Development Software I
System Software I (Semester 1)	15	Information Systems I
System Software I (Semester 2)	15	System Software I (Semester 1)
Information Systems III	30	Information Systems II
Internet Programming III	30	Internet Programming II
Web Management III	30	Web Management II
Graphical User Interface Design I	30	Development Software I

22. BACCALAUREUS TECHNOLOGIAE DEGREES

22.1 BACCALAUREUS TECHNOLOGIAE: CONSTRUCTION MANAGEMENT ISBTRR

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: **120**
NQF LEVEL: **7**
DURATION OF LEARNING PROGRAMME: **2-year block release**
1 year full-time or 2 years part-time block release

Instructional Offerings

4TH YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
APC40AI	Appropriate Construction IV	20
ASM40AI	Asset Management IV	20
BEP40AI	*Building Entrepreneurship IV	20
COE40AI	*Construction Economics IV	20
CLP40AI	*Construction Law & Procedure IV	20
KON40AI	*Construction Management IV	20
DEM40AI	Development Management IV	20
NMD10AI	*Research Methodology I	20
	Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings **
Appropriate Construction IV	20	Construction Technology III
Asset Management IV	20	National Diploma and Construction Management III
Building Entrepreneurship IV	20	Construction Accounting III
Construction Economics IV	20	Price Analysis & Estimating III
Construction Law & Procedures IV	20	National Diploma
Construction Management IV	20	Construction Management III
Development Management IV	20	National Diploma
Research Methodology I	20	National Diploma

REMARKS

*Compulsory instructional offerings.

The total credit value of level-IV instructional offerings is 1.0.

Six instructional offerings must be taken at level IV, one of which must be an instructional offering selected from the list above.

**The student must already be in possession of the National Diploma: Building. Enquiries may be directed to the Programme Head: Built Environment.

After successful completion of this qualification, a Baccalaureus Technologiae Degree will be awarded during an official graduation ceremony of CUT.

Students following the part-time programme may not be enrolled for more than three subjects in any year of study.

22.2 BACCALAUREUS TECHNOLOGIAE: ENGINEERING: CIVIL ISBTCJ

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 120
NQF LEVEL: 7
DURATION OF LEARNING PROGRAMME: 1 year

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technologist. It is intended to subsequently empower the candidate engineering technologist to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving broadly defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;

- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technologist (Baccalaureus Technologiae Degree); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

4TH YEAR URBAN		**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1	**SEMESTER 2**		
January	**July**		
	KMA42AI	Construction Materials Technology IV	15
	GEO42AI	Geometric Design IV	15
PLA41AI		Pavement Technology IV	15
	NWK42AI	Reticulation Design & Management IV**(Compulsory)**	15
STE41AI		Urban Planning & Design IV**(Compulsory)**	15
PJK40AI		Project Management: Civil IV **(Compulsory)**	15
		Total credits for specialist field:	**90**
		Total credits for other field:	**30**
		Grand total:	**120**

4TH YEAR TRANSPORTATION		**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1	**SEMESTER 2**		
January	**July**		
ASF41AI		Asphalt Technology IV	15
	BET42AI	Concrete Technology IV	15
	GEO42AI	Geometrical Design IV	15
PLA41AI		Pavement Technology IV	15
	VKR42AI	Traffic Engineering IV	15
	VVR42AI	Transportation Planning IV	15
PJK40AI		Project Management: Civil IV **(Compulsory)**	15
		Total credits for specialist field:	**90**
		Total credits for other field:	**30**
		Grand total:	**120**

4TH YEAR WATER		INSTRUCTIONAL OFFERINGS	
SEMESTER 1 January	**SEMESTER 2 July**		
	DAM42AI	Dam Engineering IV	15
HDR41AI		Hydraulics IV**(Compulsory)**	15
HID41AI		Hydrology IV**(Compulsory)**	15
	BSP42AI	Irrigation IV	15
	NWK42AI	Reticulation Design & Management IV	15
	AFW42AI	Waste Water Treatment Technology IV	15
WBH41AI		Water Treatment Technology IV	15
PJK40AI		Project Management: Civil IV **(Compulsory)**	15
		Total credits for specialist field:	**90**
		Total credits for other field:	**30**
		Grand total:	**120**

PREREQUISITES

To qualify for admission to the Baccalaureus Technologiae programme, a student must already be in possession of a National Diploma with the specific prescribed instructional offerings, as listed below.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Asphalt Technology IV	15	Transportation Engineering III
Concrete Technology IV	15	National Diploma
Construction Materials Technology IV	15	Transportation Engineering III or Geotechnical Engineering III
Dam Engineering IV	15	Water Engineering III, Hydrology IV, Geotechnical Engineering III and Hydraulics IV
Geometric Design IV	15	Transportation Engineering III
Hydraulics IV	15	Water Engineering III
Hydrology IV	15	Water Engineering II & III
Irrigation IV	15	Water Engineering II & III and Hydraulics IV
Pavement Technology IV	15	Transportation Engineering III and Geotechnical Engineering III
Project Management: Civil IV	15	National Diploma
Reticulation Design & Management IV	15	Water Engineering III and Hydraulics IV
Traffic Engineering IV	15	Transportation Engineering III
Transportation Planning IV	15	Transportation Engineering III
Urban Planning & Design IV	15	National Diploma
Waste Water Treatment Technology IV	15	Water Engineering II & III
Water Treatment Technology IV	15	Water Engineering II & III

REMARKS

A student must choose a particular specialist field, provided he/she complies with the prerequisites thereof. In each specialist field, the learning programme consists of five instructional offerings, plus two from other specialist fields, plus Project Management IV (a total of eight instructional offerings). The details of learning programmes for the specialist fields are available from the secretary of the relevant department.

Construction Materials Technology IV may not be taken in combination with Concrete Technology IVand/or Asphalt Technology IV.

After successful completion of this qualification, a Baccalaureus Technologiae Degree will be awarded during an official graduation ceremony of CUT.

22.3 BACCALAUREUS TECHNOLOGIAE: ENGINEERING: ELECTRICAL IEBTEG

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 120
NQF LEVEL: 7
DURATION OF LEARNING PROGRAMME: 1 year

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technologist. It is intended to subsequently empower the candidate engineering technologist to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving broadly defined problems in the field of Engineering while operating within the relevant standards and codes;

- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;

- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;

- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;

- Identify, analyse, conduct and manage a project;

- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability.
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technologist (Baccalaureus Technologiae Degree); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

4TH YEAR		**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1	**SEMESTER 2**		
January	**July**		
REN41AI	REN42AI	Computer Networks IV	12
DBP41AI	DBP42AI	Database Programming IV	12
EDG41AI	EDG42AI	Digital Signal Processing IV	12
EMJ41AI	EMJ42AI	Electrical Machines IV	12
EBE41AI	EBE42AI	Electrical Protection IV	12
EKS41AI	EKS42AI	Electronic Communication Systems IV	12
EKM41AI	EKM42AI	Electronic Communication IV	12
ELE41AI	ELE42AI	Electronics IV	12
EIW41AI	EIW42AI	Engineering Mathematics IV	12
EHV41AI EIP41AI EIP41HI	EHV42AI EIP42AI EIP42HI	High-Voltage Engineering IV	12
EMO41AI	EMO42AI	Microsystems Design IV	12
EMI41AI	EMI42AI	Microcontroller Systems IV	12
EPE41AI	EPE42AI	Power Electronics IV	12
EPS41AI	EPS42AI	Power Systems IV	12
PCT41AI	PCT42AI	Process Control IV	12
EBT41AI	EBT42AI	Protection Technology IV	12
PIG41AI	PIG42AI	Software Engineering IV	12
SFS41AI	SFS42AI	Software Systems IV	12
EIP40AI		*Industrial Project IV **(Light Current)**	36
EIP40HI		*Industrial Project IV **(Heavy Current)**	36
		Total:	**120**

PREREQUISITES

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Computer Networks IV	12	Network Systems III
Database Programming IV	12	Programming III
Digital Signal Processing IV	12	Digital Systems II and Mathematics III
Electrical Protection IV	12	Electrical Protection III
Electrical Machines IV	12	Electrical Machines III

Electronic Communication IV	12	Radio Engineering III
Electronic Communication Systems IV	12	Radio Engineering III
Electronics IV	12	Electronic Applications III
Engineering Mathematics IV	12	Mathematics III
High-Voltage Engineering IV	12	Electrical Engineering III
Industrial Projects IV	36	Design Project III
Microcontroller Systems IV	12	Digital Systems III
Microsystems Design IV	12	Digital Systems III
Power Electronics IV	12	Power Electronics III
Power Systems IV	12	Electrical Engineering III and Power Electronics III
Process Control IV	12	Control Systems III and Mathematics III
Protection Technology IV	12	Electrical Protection III
Software Engineering IV	12	Software Engineering III
Software Systems IV	12	Operating Systems III

REMARKS

*Compulsory instructional offering.
The total credit value of the instructional offerings is 120.
A maximum of 24 credits in any other Engineering-related learning programme may be presented.
A student must already be in possession of the National Diploma: Engineering: Electrical. Enquiries may be directed to the Head of Department: Electrical, Electronic and Computer Engineering.

Students must register in both semesters of the year for Industrial Projects IV.

Two intakes per year, in January and July.

After successful completion of this qualification, a Baccalaureus Technologiae Degree will be awarded during an official graduation ceremony of CUT.

22.4 BACCALAUREUS TECHNOLOGIAE: ENGINEERING: MECHANICAL IMBTMB

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 120
NQF LEVEL: 7
DURATION OF LEARNING PROGRAMME: 1 year

Statement of purpose of the qualification:

The purpose of the qualification is to build the necessary knowledge, understanding and skills required for a student's progression towards becoming a competent practising engineering technologist. It is intended to subsequently empower the candidate engineering technologist to demonstrate his/her ability to apply his/her acquired knowledge, understanding, skills, attitudes and values in the South African work environment. The qualification is also designed to add value to the qualifying student in terms of personal enrichment, as well as status and recognition.

A person in possession of this qualification is able to do the following:

- Competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills towards solving broadly defined problems in the field of Engineering while operating within the relevant standards and codes;
- Demonstrate well-rounded general Engineering knowledge, as well as systematic knowledge of the main terms, procedures, principles and operations of one of the disciplines of Engineering;
- Gather evidence from primary sources and journals using advanced retrieval skills, and also organise, synthesise and present the information professionally in a mode appropriate to the audience;
- Apply the acquired knowledge to new situations, both concrete and abstract, in the workplace / community;
- Identify, analyse, conduct and manage a project;
- Make independent decisions / judgments taking into account the relevant technical, economic, social and environmental factors;
- Work both independently and as a member of a team, and also as a team leader;
- Relate Engineering activity to health and safety, as well as environmental, cultural and economic sustainability;
- Meet the requirements for registration with the Engineering Council of South Africa as a candidate engineering technologist (Baccalaureus Technologiae Degree); and
- Demonstrate the capacity to explore and exploit educational, entrepreneurial and career opportunities, and to engage in professional development.

Instructional Offerings

4TH YEAR		**INSTRUCTIONAL OFFERINGS**	**CREDITS**
SEMESTER 1	**SEMESTER 2**		
January	**July**		
MAC41AI		Automatic Control IV	15
MSM41AI		Strength of Materials IV	15
MTB41AI		Thermodynamics IV	15
MTU41AI		Turbo Machines IV	15
	MFM42AI	Fluid Mechanics IV	15
	MEM42AI	Mechanics of Machines IV	15
	MRF42AI	Refrigeration & Air Conditioning IV	15
	MSA42AI	Stress Analysis IV	15
MDP40AI		*Engineering Design Project IV	30
		Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings
Automatic Control IV	15	Theory of Machines III
Engineering Design Project IV	30	Mechanical Engineering Design III
Fluid Mechanics IV	15	Hydraulic Machines III
Mechanics of Machines IV	15	Theory of Machines III
Refrigeration & Air Conditioning IV	15	Steam Plant III
Strength of Materials IV	15	Applied Strength of Materials III
Stress Analysis IV	15	Applied Strength of Materials III
Thermodynamics IV	15	Steam Plant III
Turbo Machines IV	15	Hydraulic Machines III

REMARKS

Mathematics III is a prerequisite for all the above-mentioned instructional offerings.
*Compulsory instructional offering: Engineering Design Project IV and any two of the following combinations:
Mechanics of Machines IV and Automatic Control IV **or** Strength of Materials IV and Stress Analysis IV **or** Thermodynamics IV and Refrigeration & Air Conditioning IV **or** Fluid Mechanics IV and Turbo Machines IV.
The total credit value of level-IV instructional offerings is 120 credits.

The degree is bestowed as soon as 120 formal credits have been earned.
Work-Integrated Learning does not form part of the instructional offerings presented from any other approved Engineering programme.

A student must already be in possession of the National Diploma: Engineering: Mechanical. Enquiries may be directed to the Head of Department: Mechanical and Mechatronic Engineering.

After successful completion of this qualification, a Baccalaureus Technologiae Degree will be awarded during an official graduation ceremony of CUT.

22.5 BACCALAUREUS TECHNOLOGIAE: INFORMATION TECHNOLOGY (SOFTWARE DEVELOPMENT) as well as (WEB AND APPLICATION DEVELOPMENT) BCBTIP

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: 120
NQF LEVEL: 7
DURATION OF LEARNING PROGRAMME: 1 year

Instructional Offerings

4TH YEAR		INSTRUCTIONAL OFFERINGS	CREDITS
SEMESTER 1	**SEMESTER 2**		
CMN41AB		Communication Networks IV	12
CSY41AB		Computer Security IV	12
DBS41AB		Database Systems IV	12
IPE41AB		Internet Programming & e-Commerce IV	12
NMT11AB		Research Methodology	12
OPG41AB		Development Software IV	12
ITM41AB		Information & Technology Management IV	12
	ACN42AB	Advanced Communication Networks IV	12
	ADS42AB	Advanced Development Software IV	12
	APE42AB	Advanced Internet Programming & e-Commerce IV	12
	BSL42AB	Operating Systems IV	12
	PIO42AB	Software Engineering & Design IV	12
	TPG42AB	Technical Programming IV	12
	USR42AB	User Interfaces Design IV	12
	CRA42AB	Computer Architecture IV	12
PRJ40AB		Project IV	24
		Total:	**120**

Instructional offerings are presented on demand, depending on the number of students enrolling for such instructional offerings. There is a possibility that a particular instructional offering will not be presented during a specific year.

REMARKS

At least 10 instructional offerings must be taken (Project IV represents two instructional offerings).

Instructional offerings may only be taken during one of the two semesters, with the department in question determining the instructional offerings for the semester. The student must consult with the relevant department before finalising his/her instructional offerings.

After successful completion of this qualification, a Baccalaureus Technologiae Degree will be awarded during an official graduation ceremony of CUT.

Admission requirements

An average mark of at least 65% for the National Diploma: Information Technology **or** equivalent qualification.

Candidates seeking admission to this learning programme are subject to selection.

Optional instructional offerings

The student is to discuss this matter with the relevant department.

PREREQUISITES

Refer to the heading "General", point 12 of this chapter.

Instructional offerings	**Credits**	**Prerequisite instructional offerings**
Communication Networks IV	12	System Software II (Semester II)
Computer Security IV	12	National Diploma: Information Technology
Database Systems IV	12	Information Systems III
Internet Programming & e-Commerce IV	12	Internet Programming III
Research Methodology	12	National Diploma: Information Technology
Development Software IV	12	Development Software III
Information & Technology Management IV	12	Information Systems III
Advanced Communication Networks IV	12	Communication Networks IV
Advanced Development Software IV	12	Development Software IV
Advanced Internet Programming & e-Commerce IV	12	Internet Programming & e-Commerce IV
Operating Systems IV	12	National Diploma: Information
	12	Technology
Software Engineering & Design IV	12	National Diploma: Information Technology
Technical Programming IV		Technical Programming II
User Interfaces Design IV	12	National Diploma: Information Technology
Computer Architecture IV	12	National Diploma: Information Technology
Project IV	24	National Diploma: Information Technology

Compulsory instructional offerings for the fourth year:

Software Development	**Web & Application Development**
Development Software IV	Internet Programming & e-Commerce IV
Advanced Development Software IV	Advanced Internet Programming & e-Commerce IV
Information & Technology Management IV	Information & Technology Management IV

22.6 BACCALAUREUS TECHNOLOGIAE: QUANTITY SURVEYING ISBTQG

This learning programme will be offered in Bloemfontein.

SAQA CREDITS: **120**
NQF LEVEL: **7**
DURATION OF LEARNING PROGRAMME: **2-year block release**
1 year full-time or two years part-time block release

Instructional Offerings

4TH YEAR	INSTRUCTIONAL OFFERINGS	CREDITS
BEP40AI	*Building Entrepreneurship IV	20
COE40AI	*Construction Economics IV	20
CLP40AI	*Construction Law & Procedures IV	20
DEM40AI	Development Management IV	20
MVA40AI	Market Valuations IV	20
BRK40AI	*Quantity Surveying IV	20
PRO40AI	Real Estate Management IV	20
NMD10AI	*Research Methodology I	20
	Total:	**120**

PREREQUISITES

Instructional offerings	Credits	Prerequisite instructional offerings **
Building Entrepreneurship IV	20	Construction Accounting III
Construction Economics IV	20	Price Analysis & Estimating III
Construction Law & Procedures IV	20	National Diploma
Development Management IV	20	National Diploma
Market Valuations IV	20	Price Analysis & Estimating III
Quantity Surveying IV	20	Quantity Surveying III
Real Estate Management IV	20	National Diploma
Research Methodology I	20	National Diploma

REMARKS

* Compulsory instructional offerings.
The total credit value of level-IV instructional offerings is 1.0.
Six instructional offerings must be taken at level IV, one of which must be selected from the list above.

**The student must already be in possession of the National Diploma: Building. Enquiries may be directed to the Programme Head: Built Environment.

After successful completion of this qualification, a Baccalaureus Technologiae degree will be awarded during an official graduation ceremony of CUT.

Students following the part-time programme may not be enrolled for more than three subjects in any year of study.

23. MAGISTER TECHNOLOGIAE DEGREE

SAQA CREDITS: 120
NQF LEVEL: 9

PROGRAMME CODE	MAGISTER TECHNOLOGIAE	MAIN CODE	INSTRUCTIONAL OFFERINGS
ISMTLL	Engineering: Civil ***Offered at: Bloemfontein***	VER50AI	Dissertation
IEMTEA	Engineering: Electrical ***Offered at: Bloemfontein***	VHA50AI	Dissertation
IMMTMF	Engineering: Mechanical ***Offered at: Bloemfontein***	VHD50AI	Dissertation
BCMTIG	Information Technology ***Offered at: Bloemfontein***	VER50AB	Dissertation

REMARKS

After successful completion of this qualification, a Magister Technologiae Degree will be awarded during an official graduation ceremony of CUT.

Admission requirements

Research follows specialisation at Baccalaureus Technologiae level or equivalent.
Excellent assessment results at Baccalaureus Technologiae level or equivalent as required.

24. DOCTOR TECHNOLOGIAE DEGREE

SAQA CREDITS: 240
NQF LEVEL: 10

PROGRAMME CODE	DOCTOR TECHNOLOGIAE	MAIN CODE	INSTRUCTIONAL OFFERINGS
ISDTSB	Engineering: Civil ***Offered at: Bloemfontein***	GVN90AI	Advanced Research Project and Thesis
IEDTEK	Engineering: Electrical ***Offered at: Bloemfontein***	NAV90AI	Advanced Research Project and Thesis
IMDTMJ	Engineering: Mechanical ***Offered at: Bloemfontein***	GNA90AI	Advanced Research Project and Thesis
BCDTTG	Information Technology ***Offered at: Bloemfontein***	ARD90AB	Advanced Research Project and Thesis

REMARKS

After successful completion of this qualification, a Doctor Technologiae Degree will be awarded during an official graduation ceremony of CUT.

Admission requirements

Research follows specialisation at Magister Technologiae level or equivalent.
Excellent assessment results at Magister Technologiae level or equivalent as required.

25. POSTDOCTORAL STUDIES

PROGRAMME CODE	POSTDOCTORAL STUDIES	MAIN CODE	INSTRUCTIONAL OFFERING
POSTDH	Postdoctoral Studies ***Offered at: Bloemfontein***	RESENGI	Research Engineering

26. CERTIFICATE OF COMPETENCY FOR ENGINEERS

Admission requirements
A candidate must be at least 23 years of age and must be in possession of the National Diploma: Engineering: Electrical or the National Diploma: Engineering: Mechanical with the required instructional offerings as specified below. Further instructional offerings and assessments as required are administered by the Commission of Examiners.

Applications must be addressed to:
The Chief Inspector
Private Bag X117
PRETORIA 0001

Instructional offering options for the Certificate of Competency
There is a single intake per year, in January. Additional instructional offerings may be needed by the student as required by the Commission of Examiners. A student preparing for the Certificate of Competency exercises the following instructional offering options:

National Diploma: Engineering: Electrical
Mechanics I instead of Digital Systems I
Strength of Materials II instead of Digital Systems II
Strength of Materials III instead of Digital Systems III
Mechanical Technology I instead of Industrial Electronics II
Mechanical Technology II instead of Software Design II
Mechanical Technology III and Applied Strength of Materials III must also be passed

National Diploma: Engineering: Mechanical
Electrotechnology II & III instead of Mechanical Engineering Design III.

27. REGISTRATION AS PROFESSIONAL TECHNICIAN AND/OR TECHNOLOGIST WITH THE ECSA

The Engineering Council of South Africa (ECSA) is a statutory body established by an Act of Parliament and is responsible for setting and controlling the standards of education, training and conduct of Engineering professionals.

Graduate students of CUT may register for the following titles, according to qualifications attained and specified years of suitable experience in the field of Engineering:

* Professional Engineering Technician (PrEng Tech)
* Professional Technologist (Pr Tech Eng)

For further information in this regard, contact:

Engineering Council of South Africa
Water View Corner Building
2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
Bruma
2198

Telephone: (Direct) (011) 607 9500, Fax: (011) 607 9589

28. REGISTRATION AS PROFESSIONAL QUANTITY SURVEYOR OR CONSTRUCTION MANAGER WITH THE RELEVANT PROFESSIONAL BODY

Statutory bodies established by an Act of Parliament and responsible for setting and controlling standards of education, training and conduct of quantity surveyors and construction managers respectively exist for both professions.

Further information on the registration process is available from the respective professional bodies.