



**VAAL UNIVERSITY  
OF TECHNOLOGY**

**ENGINEERING &  
TECHNOLOGY**

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**2023 for 2024**

# FACULTY STRUCTURE AND QUALIFICATIONS

## Chemical & Metallurgical Engineering

Chemical Engineering  
Diploma; Advanced Diploma; PGD; MEng & PhD

Metallurgical Engineering  
Diploma; Advanced Diploma; PGD & MEng & DEng

## Civil Engineering

Civil Engineering  
Diploma; Advanced Diploma; PGD; MEng & DEng

## Electrical Engineering

Computer Systems Engineering  
Diploma; Advanced Diploma; MEng & DEng

Electronic Engineering  
Diploma; Advanced Diploma; MEng & DEng

Power Engineering  
Diploma; Advanced Diploma; MEng & DEng

Process Control Engineering  
Diploma; Advanced Diploma; MEng & DEng

## Industrial Engineering & Operational Management & Mechanical Engineering

Industrial Engineering  
Diploma; Advanced Diploma; PGD & MEng

Operational Management  
Diploma; Advanced Diploma & PGD

Mechanical Engineering  
Diploma; Advanced Diploma; PGD; MEng & DEng



# MINIMUM ADMISSION REQUIREMENTS: FACULTY OF ENGINEERING AND TECHNOLOGY

**Table 1: Academic Points Calculation**

(Please note Life Orientation is excluded from all points' calculations and bonus points)

NSC Percentages	NSC Achievement Score/Rating	SC HG	SC SG	VUT Score	BONUS POINTS	
					Maths	Physical/Natural Science and English
90% - 100%	7	A	A	8	3	2
80% - 89%				7		
70% - 79%	6	B		6	2	1
60% - 69%	5	C	B	5		
50% - 59%	4	D	C	4	0	0
40% - 49%	3	E	D	3		
30% - 39%	2	F	E	2		
0% - 29%	1	G	F	0		

The academic point score (APS) for the Faculty of Engineering and Technology admission requirement is shown in the following tables for different type of qualifications.

**Table 2: Diploma programmes in Engineering - 3 year programmes**

Qualification	Compulsory Subjects	Minimum for the Diploma programme
<b>Diploma:</b>	Mathematics	4
<b>DI0800:</b> Chemical Engineering	Physical Sciences	4
<b>DI0810:</b> Civil Engineering	English Language	4
<b>DI0823:</b> Electronic Engineering		
<b>DI0824:</b> Power Engineering		
<b>DI0825:</b> Process Control Engineering		
<b>DI0822:</b> Computer Systems Engineering		
<b>DI0830:</b> Industrial Engineering		
<b>DI0841:</b> Mechanical Engineering		
<b>DI0850:</b> Metallurgical Engineering		
	<b>Total (Excluding Life Orientation)</b>	<b>24*</b>

\*Admission requirements for any of the 3-year Diploma programmes in Engineering is a National Senior Certificate with a minimum of 24 APS points with minimum of 4 for Mathematics, Physical Science and English (see Table 2).

**Table 3: Diploma programme in Operations Management - 3 year programme**

Qualification	Compulsory Subjects	Minimum for the extended Diploma programme
<b>Diploma:</b>	Mathematics	4
<b>DI0400:</b> Operations Management	Physical Sciences	3
	English Language	4
	<b>Total (Excluding Life Orientation)</b>	<b>23</b>

**Table 4: Diploma programmes in Engineering (Extended Programmes) – 4 year programmes**

Qualification	Compulsory Subjects	Minimum for the extended Diploma programme
<b>Diploma:</b>	Mathematics	3
<b>DE0801:</b> Chemical Engineering	Physical Sciences	3
<b>DE0811:</b> Civil Engineering	English Language	3
<b>DE0863:</b> Electronic Engineering		
<b>DE0864:</b> Power Engineering		
<b>DE0865:</b> Process Control Engineering		
<b>DE0862:</b> Computer Systems Engineering		
<b>DE0831:</b> Industrial Engineering		
<b>DE0841:</b> Mechanical Engineering		
<b>DE0851:</b> Metallurgical Engineering		
	<b>Total (Excluding Life Orientation)</b>	<b>22**</b>

\*\*Admission requirements for any of the 4-year extended Diploma programmes in Engineering is a National Senior Certificate with a minimum of 22 APS points with minimum of 3 for Mathematics, Physical Science and English (see Table 4).

**For admission into Diploma in Engineering Programmes the following should be noted:**

- The prospective student's results must meet the statutory and programme admission requirement.
- Bonus points will only be used for selection purposes. In case of a tie and all other scores remaining the same use the actual percentages to differentiate.
- All other grade 12 or equivalent certificates will be evaluated against/according to statutory and programme requirements.
- International qualifications: All international qualifications will be evaluated by the International Office based on the Swedish scale and SAQA equivalence.
- Transfers: Applications from students to transfer from other institutions will be dealt with in terms of the Recognition of Prior Learning and CAT policies of VUT.

**ADVANCED DIPLOMA PROGRAMMES:**

**ALL ENGINEERING DISCIPLINES**

A student with a relevant qualification on NQF level 6 (min 360 credits), typically a Diploma or an equivalent NQF level 6 qualification (min 360 credits), can enter the Advanced Diploma in Engineering.

**POSTGRADUATE DIPLOMA PROGRAMMES:**

**ALL ENGINEERING DISCIPLINES**

A student with a relevant qualification on NQF level 7 (min 120 credits), typically a Bachelor's degree, Advanced Diploma or relevant NQF level 7 qualification, can enter the PGD in Engineering.

*Table 5: Admission requirements for prospective students with NC(V)-4 qualification.*

Qualification	Compulsory Subjects	Minimum for the Diploma programme	NC-V
<b>Diploma:</b>	Mathematics/Vocational - /Technical Mathematics	4	3 = 40 – 49% (Not yet competent) 4 = 50 – 59% (Competent)
<b>DI0800:</b> Chemical Eng	Physical Sciences/Engineering Sciences/*Technical -/*Vocational Sciences	4	5 = 60 – 69% (Competent) 6 = 70 – 79% (Highly competent)
<b>DI0810:</b> Civil Engineering	English Language	4	7 = 80 – 89% (Outstanding competent) 8 = 90 – 100%
<b>DI0823:</b> Electronic Engineering	*Technical and Vocational Sciences will be used for selection into Electrical Engineering		
<b>DI0824:</b> Power Engineering			
<b>DI0825:</b> Process Control Engineering			
<b>DI0822:</b> Computer Systems			
<b>DI0830:</b> Industrial Engineering			
<b>DI0841:</b> Mechanical Engineering	<b>Total</b>	<b>24</b>	
<b>DI0850:</b> Metallurgical Engineering	<b>(Excluding Life Orientation)</b>		

*Table 6: VUT scoring scale for N qualifications*

Symbol achieved	N3	N4/N5/N6
A	6	8
B	5	7
C	4	6
D	3	5
E	2	4

**ENGINEERING COUNCIL OF SOUTH AFRICA**

The Engineering Council of South Africa (ECSA) audit all the engineering programmes offered at the Vaal University of Technology every four years. ECSA awards an accreditation status to each programme that meets the standard for the award of the qualification. The standards are designed to meet the educational requirement towards registration as a Candidate or Professional Engineering Technician with ECSA and acceptance as a candidate to write the examinations for Certificated Engineers (for Diploma in Engineering Programmes) and the educational base required for registration as a Professional Engineering Technologist and/or Certificated Engineer with ECSA (for the Advanced Diploma in Engineering Programmes).

## DEPARTMENT: CHEMICAL & METALLURGICAL ENGINEERING

**1. QUALIFICATIONS: CHEMICAL ENGINEERING**

AMMAT2A	Mathematics 2	10
APHYT2A	Physics 2 (Theory)	5
APHYP2A	Physics 2 (Practical)	5
EHSPA1A	Safety Principles and Law 1	5

**1.1 DIPLOMA IN CHEMICAL ENGINEERING (DI0800)**

1.1.1 Duration of Programme: Three-year, full-time qualification: Two and a half years (Five semesters S1 to S5); One semester (6 months) Workplace Based Learning (WBL)

1.1.2 Curriculum: Diploma in Chemical Engineering (3 year programme)

**YEAR 1 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
AAECH1A	Engineering Chemistry 1	10
EESK1A	Engineering Skills 1	5
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

**YEAR 1 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY2A	Applied Communication Skills 1.2	8
AAECH2A	Engineering Chemistry 2	10
EMEDR1A	Engineering Drawing 1	10
EHITC1A	Introduction to Chemical Engineering 1	12

**YEAR 2 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
BHMAN1A	Management 1	10
EHCP11A	Chemical Process Industries 1	12
AAECH3A	Engineering Chemistry 3	10
EHMEB2A	Material and Energy Balance 2	12
AMMAT3A	Mathematics 3	10
EHMPO1A	Mechanical Operation 1	12

**YEAR 2 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY2A	Applied Communication Skills 2.2	8
EHCOA2A	Computing Applications 2	7
EHCEL1A	Chemical Engineering Laboratory 1	12
EH CET2A	Chemical Eng. Thermodynamics 1	12
EHHMT2A	Heat and Mass Transfer 1	12
EHP CO2A	Process Control 1	12
EHPFD2A	Process Fluid Dynamics 1	12

**YEAR 3 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
EHATH3A	Applied Thermodynamics 2	12
EHCPR3A	Chemical Process Design	12
EHENE1A	Environmental Engineering 1	12
EHRTE3A	Reactor Technology 1	12
EHSEP3A	Separation Processes 1	12
EHCEL2A	Chemical Engineering Laboratory 2	12

**YEAR 3 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
EHXL1A	Experiential Learning 1	60

**Curriculum: Diploma in Chemical Engineering (4 year Extended programme) – DE0801**

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics, Chemistry and Drawing. In the second year of study, the students will augment their foundation knowledge of Maths, Physics, Chemistry and Drawing to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

**YEAR 1 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAACH1A	Foundation Chemistry 1	Foundation		10
AMXMA1A	Foundation Mathematics 1	Foundation		10
APXPH1A	Foundation Physics 1	Foundation		10
ASICT1A	ICT Skills 1	Regular	10	
EEESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

**YEAR 1 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAACH2A	Foundation Chemistry 2	Foundation		10
AMXMA2A	Foundation Mathematics 2	Foundation		10
APXPH2A	Foundation Physics 2	Foundation		10
EMXDRI1A	Foundation Drawing 1	Foundation		10
EHSPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

**YEAR 2 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAECH1B	Engineering Chemistry 1	Regular (Augm)	10	
AMMAT1B	Mathematics 1	Regular (Augm)	10	
APHYS1B	Physics 1	Regular (Augm)	10	
EHITC1B	Intro to Chemical Engineering 1	Regular (Augm)	12	
EMEDR1B	Engineering Drawing 1	Regular (Augm)	10	

After completion of the first two years, the student will continue to year 3 and 4, following the regular modules.

**1.2 ADVANCED DIPLOMA IN CHEMICAL ENGINEERING (AD0800)**

1.2.1 Duration of Programme: One-year, full-time qualification.

1.2.2 Curriculum

**YEAR MODULES**

MODULE CODE	NAME OF MODULE	CREDITS
EHAPD4A	Advanced Process Design	30
EHRMP4A	Research Methodology and Project	28

**SEMESTER 1**

MODULE CODE	NAME OF MODULE	CREDITS
EHAEM4A	Advanced Engineering Mathematics	12
EHARE4A	Advanced Reaction Engineering	12
EHFLM4A	Advanced Fluid Mechanics	12
EHMX4A	Advanced Heat, Mass Transfer and Separation: Mod 1	10

**SEMESTER 2**

MODULE CODE	NAME OF MODULE	CREDITS
EHHMY4A	Advanced Heat, Mass Transfer and Separation: Mod 2	11
EHMAN4A	Engineering Management	7
EHCEL4A	Chemical Engineering Laboratory	8
EHAPC4A	Advanced Process Control	12

**1.3 POSTGRADUATE DIPLOMA IN CHEMICAL ENGINEERING (PG0800)**

1.3.1 Duration of Programme: One-year, full-time qualification.

1.3.2 Curriculum

**SEMESTER 1**

MODULE CODE	NAME OF MODULE	CORE/ FUNDAMENTAL/ ELECTIVE	CREDITS
EHPRM5A	Research Project (Chemical Engineering) *Full Year	Core	40
EHPEX5A	Environmental Engineering I (Chemical Eng)	Core	15
EHPDX5A	Chemical Process Design I (Chemical Eng)	Core	15
	Elective Group YI**	Elective	10

**SEMESTER 2**

MODULE CODE	NAME OF MODULE	CORE/ FUNDAMENTAL/ ELECTIVE	CREDITS
EHPEY5A	Environmental Engineering II (Chemical Eng)	Core	15
EHPDY5A	Chemical Process Design II (Chemical Eng)	Core	15
	Elective Group YII***	Elective	10

\*Research Project (Chemical Engineering) (Full year)

\*\* Elective Group YI \*(Elective group Y = A or B)

\*\*\* Elective Group YII \*(Elective group Y = A or B)

**Module Elective Groups**

The learners will first select a group among petroleum, mineral processing and bioprocessing. Elective YI and YII may not come from different groups. The elective group of modules to be offered will depend on admission numbers per group (Minimum of 20 students).

**ELECTIVE GROUP A**

MODULE CODE	NAME OF MODULE	CORE/ FUNDAMENTAL/ ELECTIVE	CREDITS
EBHIX5A	Bioprocess Engineering I	Elective	10
EBHIY5A	Bioprocess Engineering II	Elective	10

**ELECTIVE GROUP B**

MODULE CODE	NAME OF MODULE	CORE/ FUNDAMENTAL/ ELECTIVE	CREDITS
EHPXP5A	Petrochemical Engineering I	Elective	10
EHPYP5A	Petrochemical Engineering II	Elective	10

**1.4 MASTER OF ENGINEERING IN CHEMICAL ENGINEERING (MP0800)**

1.4.1 Admission Requirements: BEng degree in Chemical Engineering or equivalent level 8 qualification including PGD in Chemical Engineering. Proof of successful completion of a Vaal University of Technology approved course in Research Methodology is required. Ad hoc cases will be treated on merit.

1.4.2 Duration of Programme: At least one year's full-time research, concluded with a Master Dissertation.

## 1.5 DOCTOR OF PHILOSOPHY PHD IN CHEMICAL ENGINEERING (708001)

1.5.1 Admission Requirements: MEng (Chemical Engineering) or equivalent. Ad hoc cases will be treated on merit.

1.5.2 Duration of Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

### CAREER OPPORTUNITIES

A profession in the field of Chemical Engineering offers a challenging and exciting career in both the private and public sectors. There is a continuous demand for trained manpower in the field of Chemical Engineering. Job designations may vary from production foremen, area superintendents, line managers and various others within several branches of heavy, light and general types of industries where the services and expertise of such persons are required.

## 2. QUALIFICATIONS: METALLURGICAL ENGINEERING

### 2.1 DIPLOMA IN METALLURGICAL ENGINEERING (DI0850)

2.1.1 Duration of Programme: Three-year, full-time qualification. Five semesters, S1 to S5 at the Vaal University of Technology. One semester Workplace Based Learning (WBL).

2.1.2 Curriculum: Diploma in Metallurgical Engineering (3 year programme)

#### YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
AMMAT1A	Mathematics 1	10
AAECH1A	Engineering Chemistry 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3
EESK1A	Engineering Skills 1	5
ASICT1A	ICT Skills 1	10
HKCOX1A	Applied Communication Skills 1.1	8

#### YEAR 1 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
AMMAT2A	Mathematics 2	10
EMEDR1A	Engineering Drawing 1	10
APHYS2A	Physics 2	10
AAECH2A	Engineering Chemistry 2	10
EYSPA1A	Safety Principles and Law 1	5
EYCOA2A	Computing Applications 2	7
HKCOY1A	Applied Communication Skills 1.2	8

#### YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
EYPTH1A	Process Thermodynamics 1	10
EYEME1A	Extractive Metallurgy 1	10
EYPME1A	Physical Metallurgy 1	10
EYMPR1A	Mineral Processing 1	10
EYMAM1A	Manufacturing Metallurgy 1	10
EYEGE1A	Engineering Geology 1	10
HKCOX2A	Applied Communication Skills 2.1	8

#### YEAR 2 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
EYHYD2A	Hydrometallurgy 2	10
EYPYR2A	Pyrometallurgy 2	10
EYPME2A	Physical Metallurgy 2	10
EYMPR2A	Mineral Processing 2	10
EYMAM2A	Manufacturing Metallurgy 2	10
EBQCO2A	Quality Control 2	10
HKCOY2A	Applied Communication Skills 2.2	8

#### YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
EYHYD3A	Hydrometallurgy 3	10
EYPYR3A	Pyrometallurgy 3	10
EYPME3A	Physical Metallurgy 3	10
EYMPR3A	Mineral Processing 3	10
EYMAM3A	Manufacturing Metallurgy 3	10
BHMAN1A	Management 1	10
EYENC1A	Environmental Geochemistry 1	8

#### YEAR 3 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
EYWIL1A	Work Integrated Learning 1	60

### Curriculum: Diploma in Metallurgical Engineering (4 year Extended programme) – DE0851

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics, Chemistry and Drawing. In the second year of study, the students will augment their foundation knowledge of Maths, Physics, Chemistry and Drawing to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

#### YEAR 1 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAXCH1A	Foundation Chemistry 1	Foundation	10	10
AMXMA1A	Foundation Mathematics 1	Foundation	10	10
APXPH1A	Foundation Physics 1	Foundation	10	10
ASICT1A	ICT Skills 1	Regular	10	
EESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

#### YEAR 1 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAXCH2A	Foundation Chemistry 2	Foundation	10	10
AMXMA2A	Foundation Mathematics 2	Foundation	10	10
APXPH2A	Foundation Physics 2	Foundation	10	10
EMXDOR1A	Foundation Drawing 1	Foundation	10	10
EYCOA2A	Computing Applications 2	Regular	7	
EYSPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

#### YEAR 2 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
AAECH1B	Engineering Chemistry 1	Regular (Aug)	10
AMMAT1B	Mathematics 1	Regular (Aug)	10
APHYS1B	Physics 1	Regular (Aug)	10

#### YEAR 2 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
AAECH2A	Engineering Chemistry 2	Regular	10
AMMAT2A	Mathematics 2	Regular	10
APHYP2A	Physics 2 – Practical	Regular	5
APHYT2A	Physics 2 - Theory	Regular	5
EMEDR1B	Engineering Drawing 1	Regular (Aug)	10

After completion of the first two years, the student will continue to year 3 and 4, following the regular modules.

### 2.2 ADVANCED DIPLOMA IN METALLURGICAL ENGINEERING (AD0850)

2.2.1 Duration of Programme: It is a one-year, full-time programme.

2.2.2 Curriculum

#### SEMESTER 1

MODULE CODE	NAME OF MODULE	CREDITS
AMMAT3A	Mathematics	10

#### SEMESTER 2

MODULE CODE	NAME OF MODULE	CREDITS
EBQCO3A	Quality Control	10

**SEMESTER 1&2 (YEAR MODULES)**

MODULE CODE	NAME OF MODULE	CREDITS
EYHYD4A	Hydrometallurgy	20
EYPYR4A	Pyrometallurgy	20
EYPME4A	Physical Metallurgy	20
EYMIP4A	Mineral Processing	20
EYMAM4A	Manufacturing Metallurgy	20
EYPRO2A	Metallurgical Research Methods and Project	20

**2.3 POSTGRADUATE DIPLOMA IN METALLURGICAL ENGINEERING (PG0850)**

2.3.1 Duration of Programme: This is a one-year, full-time programme.

2.3.2 Curriculum

**PHYSICAL METALLURGY OPTION****SEMESTER 1**

MODULE CODE	NAME OF MODULE	CREDITS
EYPYR4A	Process Thermodynamics	10
EYMKR5A	Corrosion Engineering	10

**SEMESTER 2**

MODULE CODE	NAME OF MODULE	CREDITS
EYHMT5A	Heat and Mass Transfer	10

**SEMESTER 1&2 (YEAR MODULES)**

MODULE CODE	NAME OF MODULE	CREDITS
EYMA55A	Advanced Modelling and Simulation	20
EYPRO5A	Physical Metallurgy Research Project	30
EYPM5A	Physical Metallurgy	20
EYMAM5A	Manufacturing Metallurgy	20
EYMA5A	Materials Engineering	20

**EXTRACTIVE METALLURGY OPTION****SEMESTER 1**

MODULE CODE	NAME OF MODULE	CREDITS
EYPYR4A	Process Thermodynamics	10
EYMKR5A	Corrosion Engineering	10

**SEMESTER 2**

MODULE CODE	NAME OF MODULE	CREDITS
EYHMT5A	Heat and Mass Transfer	10

**SEMESTER 1&2 (YEAR MODULES)**

MODULE CODE	NAME OF MODULE	CREDITS
EYMA55A	Advanced Modelling and Simulation	20
EYPRO5A	Extractive Metallurgy Research Project	30
EYMP5A	Mineral Processing	20
EYHYD5A	Hydrometallurgy	20
EYPYR5A	Pyrometallurgy	20

**2.4 MASTER OF ENGINEERING IN METALLURGICAL ENGINEERING (MENG (METALLURGICAL ENGINEERING)) – (MP0850)**

2.4.1 Admission Requirements: A BEng Degree or equivalent NQF level 8 qualification including the Postgraduate Diploma.

2.4.2 Duration of Programme: The equivalent of one-year, full-time study.

2.4.3 Programme Structure: This instructional programme comprises of a dissertation only.

**2.5 DOCTOR OF ENGINEERING IN METALLURGICAL ENGINEERING (DENG (METALLURGICAL ENGINEERING)) – (DP0850)**

2.5.1 Admission Requirements: A MEng Degree or equivalent NQF level 9 qualification.

2.5.2 Duration of Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

**3. CAREER OPPORTUNITIES**

Many opportunities exist at primary producers of both ferrous and non-ferrous metals as well as in the manufacturing industry.

**4. ENQUIRIES**

Enquiries may be addressed to:

HoD: Chemical and Metallurgical Engineering

Faculty of Engineering & Technology

Vaal University of Technology, Private Bag X021, VANDERBIJLPARK, 1900

HoD Tel: +27 16 950 9402/9243

e-mail: sammyk1@vut.ac.za, rethav@vut.ac.za

**DEPARTMENT: CIVIL ENGINEERING****1. QUALIFICATIONS: CIVIL ENGINEERING****1.1 DIPLOMA IN CIVIL ENGINEERING (DI0810)**

1.1.1 Duration of Programme: This is a three-year course and consists of a five semester's university attendance followed by one semester workplace based learning in industry.

1.1.2 Curriculum

**YEAR 1 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
ASICT1A	ICT Skills 1	10
AAECH1A	Engineering Chemistry 1	10
EEESK1A	Engineering Skills 1	5
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

**YEAR 1 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY1A	Applied Communication Skills 1.2	8
ECAME1A	Applied Mechanics 1	10
ECCOA2A	Computing Applications 2	7
AAECH2A	Engineering Chemistry 2	10
ECEDR1A	Engineering Drawing 1	10
AMMAT2A	Mathematics 2	10

APHYP2A	Physics 2 – Practical	5
APHYT2A	Physics 2 - Theory	5
ECSPA1A	Safety Principles and Law 1	5

**YEAR 2 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
ECCOS1A	Construction Methods 1	10
ECCOM1A	Construction Materials 1	5
ECEDR2A	Engineering Drawing 2	10
EYEGE1A	Engineering Geology 1	10
ECESU1A	Engineering Surveying 1	10
ECSME1A	Soil Mechanics 1	5
ECTST2A	Theory of Structures 2	10

**YEAR 2 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY2A	Applied Communication Skills 2.2	8
ECCEM1A	Civil Engineering Management 1	10
ECCOM2A	Construction Materials 2	5
ECEOS2A	Elements of Structural Steel and Timber Design 2	10
ECESU2A	Engineering Surveying 2	10
ECSAN3A	Structural Analysis 3	10
ECTEN1A	Transportation Engineering 1	10
ECWEN1A	Water Engineering 1	10

### YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
ECCEM2A	Civil Engineering Management 2	10
ECCDOC1A	Documentation 1	10
EECOR3A	Elements of Reinforced Concrete Masonry Design 3	10
ECFCM2A	Fluid Mechanics 2 (Civil)	10
ECSME2A	Soil Mechanics 2	10
ECSAN4A	Structural Analysis 4	10
ECTEN2A	Transportation Engineering 2	10

### YEAR 3 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
ECEXL1A	Experiential Learning 1	60

### Curriculum: Diploma in Civil Engineering (4 year Extended programme) – DE0811

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics, Chemistry and Drawing. In the second year of study, the students will augment their foundation knowledge of Maths, Physics, Chemistry and Drawing to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

### YEAR 1 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXCH1A	Foundation Chemistry 1	Foundation	10	10
AMXMA1A	Foundation Mathematics 1	Foundation	10	10
APXPH1A	Foundation Physics 1	Foundation	10	10
ASICT1A	ICT Skills 1	Foundation	10	
EEESK1A	Engineering Skills 1	Regular	5	
EE SIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

### YEAR 1 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXCH2A	Foundation Chemistry 2	Foundation	10	10
AMXMA2A	Foundation Mathematics 2	Foundation	10	10
APXPH2A	Foundation Physics 2	Foundation	10	10
EMXDR1A	Foundation Drawing 1	Foundation	10	
ECCOA2A	Computing Applications 2	Regular	7	
ECSPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

### YEAR 2 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
			Regular
AAECH1B	Engineering Chemistry 1	Regular (Augm)	10
AMMAT1B	Mathematics 1	Regular (Augm)	10
APHYS1B	Physics 1	Regular (Augm)	10
EMEDR1B	Engineering Drawing 1	Regular (Augm)	10

### YEAR 2 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
			Regular
AAECH2A	Engineering Chemistry 2	Regular	10
AMMAT2A	Mathematics 2	Regular	10
APHYP2A	Physics 2 – Practical	Regular	5
APHYT2A	Physics 2 – Theory	Regular	5
ECAME1B	Applied Mechanics 1	Regular (Augm)	10

After completion of the first two years, the student will continue to year 3 and 4, following the regular modules.

### 1.2 ADVANCED DIPLOMA IN CIVIL ENGINEERING (AD0810)

1.2.1 Duration of Programme: A one-year, full-time course and consists of two semesters' university attendance (13 modules) that includes two

(2) modules on Civil Engineering Research Methods and Project.

1.2.2 Curriculum

### SEMESTER 1

MODULE CODE	NAME OF MODULE	CREDITS
ECMAT4A	Civil Engineering Materials	10
ECHTE4A	Highway and Traffic Engineering	10
ECSTR4A	Structural Analysis	10
ECWWE4A	Water and Wastewater Engineering	10
ECENS4A	Environmental Studies	10
ECREM4A	Civil Engineering Research Methodology	15

### SEMESTER 2

MODULE CODE	NAME OF MODULE	CREDITS
ECDEE4A	Earthworks Design	10
ECSRD4A	Steel and Reinforced Concrete Design	10
ECRWEE4A	Railway Engineering	10
ECRED4A	Reticulation Design	10
ECBDC4A	Business Development in the Civil Engineering Environment	10
ECMTT4A	Management Tools and Techniques	10
ECREP4A	Civil Engineering Research Project	15

### 1.3. POSTGRADUATE DIPLOMA IN CIVIL ENGINEERING (PG0810)

1.3.1 Duration of Programme: This is a one-year, full-time programme. Consists of two semesters' university attendance (8 modules) that includes two (2) modules on Civil Engineering Research Project.

1.3.2 Curriculum

### SEMESTER 1

MODULE CODE	NAME OF MODULE	CREDITS
ECEEN5A	Environmental Engineering	10
ECGET5A	Geotechnical Engineering	20
ECPMCSA	Project and Construction Management	10
ECRPX5A	Research Project in Civil Engineering (Module 1)	15

### SEMESTER 2

MODULE CODE	NAME OF MODULE	CREDITS
ECSTE5A	Structural Engineering	20
ECTEN5A	Transportation Engineering	20
ECWEN5A	Water Engineering	20
ECRPY5A	Research Project in Civil Engineering (Module 2)	25

### 1.4 MASTER OF ENGINEERING IN CIVIL ENGINEERING (MP0810)

1.4.1 Admission Requirements: A BEng Degree or Equivalent level 8 qualification including the Postgraduate Diploma in Civil Engineering. Proof of successful completion of a Vaal University of Technology approved course in Research Methodology. Ad hoc cases will be treated on merit.

1.4.2 Duration of Programme: The equivalent of one-year, full-time study.

1.4.3 Programme Structure: This programme comprises of a thesis only.

### 1.5 DOCTOR OF ENGINEERING IN CIVIL ENGINEERING (DP0810)

1.5.1 Admission requirements: Master of Engineering in Civil Engineering or equivalent level 9 qualification. Ad hoc cases will be treated on merit.

1.5.2 Duration of Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

### 2. FIELDS OF STUDY

Fields of study includes but is not limited to transportation, water, structural, geotechnical, construction management and urban engineering.

### 3. CAREER OPPORTUNITIES

Civil Engineering Technicians could be involved with construction projects such as reinforced concrete, structural steel, timber and masonry structures, roads, bridges, dams, canals, pipelines, water purification, sewage treatment, airports, railways, harbours, housing and services.



#### 4. ENQUIRIES

Enquiries may be addressed to:  
The Head of Department: Civil Engineering  
Faculty of Engineering and Technology  
Vaal University of Technology  
Private Bag X021, VANDERBULPARK 1900

Tel: (016) 950-9420/9241  
e-mail: rosaliat@vut.ac.za or georgeo@vut.ac.za  
Website: www.vut.ac.za

## DEPARTMENT: ELECTRICAL ENGINEERING

### 1. QUALIFICATIONS:

#### ELECTRICAL ENGINEERING: ELECTRONIC ENGINEERING

#### 1.1 DIPLOMA IN ELECTRICAL ENGINEERING: ELECTRONIC ENGINEERING (D10823)

1.1.1 Duration of Programme: Three-year, full-time qualification, minimum 360 credits. Sixty credits are allocated to Work Integrated Learning (WIL).

1.1.2 Curriculum

##### YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
EEESK1A	Engineering Skills 1	5
EPEEN1A	Electrical Engineering 1	10
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

##### YEAR 1 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY1A	Applied Communication Skills 1.2	8
EECO2A	Computing Applications 2	7
EIDSY1A	Digital Systems 1	10
EPEEN2A	Electrical Engineering 2	10
AMMAT2A	Mathematics 2	10
EEELE1A	Electronics 1	10
EEWPR1A	Projects 1 (WIL - Electronics)	7
EESPA1A	Safety Principles And Law 1	5

##### YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
EIDSY2A	Digital Systems 2	10
EEELE2A	Electronics 2	10
EEWPR2A	Projects 2 (WIL - Electronics)	7
EECAD1A	Electrical CAD 1	10
AMMAT3A	Mathematics 3	10
EECO2A	Electronic Communication 2	10
<b>OPTIONAL ADDITIONAL</b>		
EIENP1A	Engineering Programming 1	10
BHMAN1A	Management 1	10

##### YEAR 2 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
<b>COMPULSORY MODULES</b>		
HKCOY2A	Applied Communication Skills 2.2	8
EEELE3A	Electronics 3	10
EEWPR3A	Projects 3 (WIL - Electronics)	8
<b>CHOICE MODULES (Choose any 4)</b>		
EEDCO2A	Digital Communication 2	10
EECAD2A	Electrical CAD 2	10
EEMET3A	Measurement Technology 3	10
EEPEL3A	Power Electronics 3	10
EICSY2A	Control Systems 2	10

##### YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
EEOEL3A	Opto-Electronics 3	10
EEWPR4A	Projects 4 (WIL - Electronics)	8
EEMIC3A	Microwave Communication 3	10
EERAD3A	Radio Engineering 3	10
EETXR3A	Transmission 3 (Radio Frequency)	10
<b>OPTIONAL ADDITIONAL</b>		
EEPEL4A	Power Electronics 4	10

##### Compulsory WPBL Placement

MODULE CODE	NAME OF MODULE	CREDITS
EEEXL1A	Experiential Learning 1 (Electronics)	14
EEEXL2A	Experiential Learning 2 (Electronics)	16
EEPRJ4A	Engineering Project 4 (Electronics)	30

#### Curriculum: Diploma in Electrical Engineering: Electronic (4 year Extended programme) – DE0863

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics and Chemistry. In the second year of study, the students will augment their foundation knowledge of Maths, Physics and Chemistry to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

##### YEAR 1 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXCH1A	Foundation Chemistry 1	Foundation		10
AMXMA1A	Foundation Mathematics 1	Foundation		10
APXP1A	Foundation Physics 1	Foundation		10
ASICT1A	ICT Skills 1	Regular	10	
EEESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

##### YEAR 1 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXCH2A	Foundation Chemistry 2	Foundation		10
AMXMA2A	Foundation Mathematics 2	Foundation		10
APXP2A	Foundation Physics 2	Foundation		10
EECO2A	Computing Applications 2	Regular	7	
EESPA1A	Safety Principles and Law 1	Regular	5	
EEWPR1A	Project 1	Regular	7	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

## YEAR 2 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
AMMAT1B	Mathematics 1	Regular (Augm)	10
APHYS1B	Physics 1	Regular (Augm)	10
EPEEN1A	Electrical Engineering 1	Regular	10

### 1.2 ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING: ELECTRONIC ENGINEERING (AD0823)

1.2.1 Duration of programme: One-year, full-time course.

1.2.2 Curriculum

#### SEMESTER 1

MODULE CODE	NAME OF MODULE COMPULSARY	CREDITS
EEPRO4A	Electrical Engineering Project (Electronic)	25
EEREM4A	Engineering Research Methods (Electronic)	15
	<b>ELECTIVES (Choose 2 modules)</b>	
EEAEL4A	Electronics **	20
EERAD4A	Radio Engineering **	20
EIDSP4A	Digital Signal Processing ***	20
EISPC4A	Signal Processing ***	20

#### SEMESTER 2

MODULE CODE	NAME OF MODULE COMPULSARY	CREDITS
AMAEM4A	Advanced Engineering Mathematics	15
BHEMN4A	Engineering Management	10
	<b>ELECTIVES (Choose 2 modules)</b>	
EEAMI4A	Microwave Engineering **	20
EEAOE4A	Opto-Electronics **	20
EESAT4A	Satellite Communication **	20
EICIA4A	Circuit Analysis ***	20
EIDCS4A	Digital Control Systems ***	20

(\*\* and \*\*\* should be taken together as a specialisation field)

### 1.3 MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING: ELECTRONIC ENGINEERING (MP0820)

1.3.1 Admission Requirements: A BEng degree or equivalent level 8 qualification including a Postgraduate Diploma.

1.3.2 Programme Structure: At least one-year, full-time research, concluded with a Master's dissertation.

### 1.4 MASTER OF ENGINEERING IN ENERGY EFFICIENCY (MP0823)

The MEng (Energy Efficiency) was developed under the guidance and with the support of the PEESA project (<http://peesa.usz.edu.pl>)

1.4.1 Admission Requirements: An appropriate BEng or equivalent level 8 qualification.

1.4.2 Duration of Programme: One-year, full-time or two years part-time.

1.4.3 Curriculum:

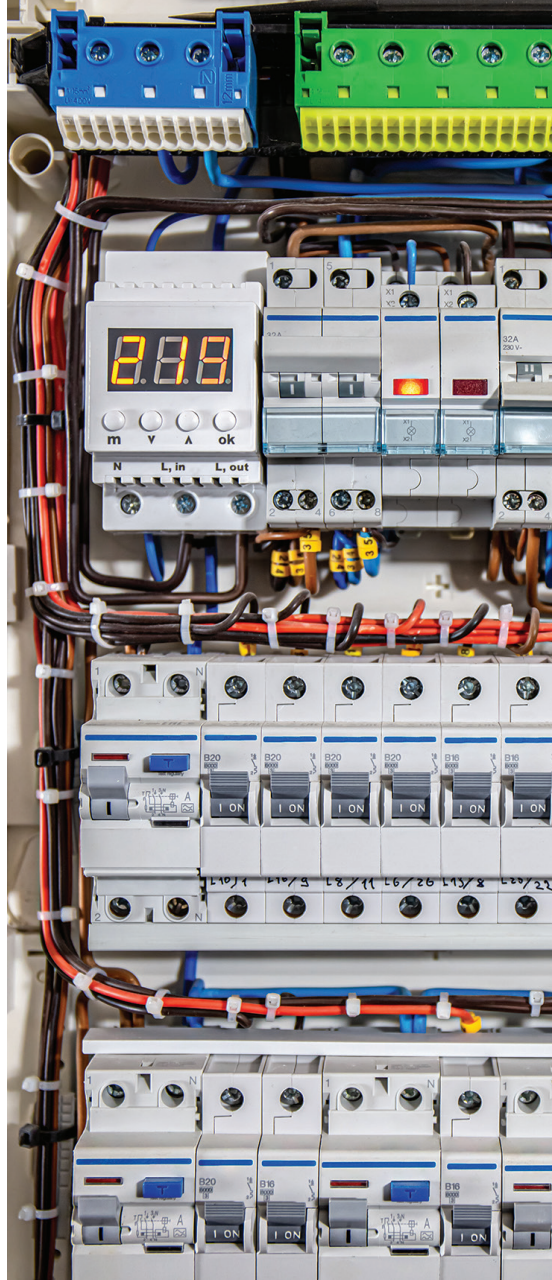
MODULE CODE	NAME OF MODULE	CREDITS
EEACC6A	Mod 1: Energy Accounting & Economics	20
EPPEM6A	Mod 2: Process Energy Management	25
EPESS6A	Mod 3: Electrical Systems	20
EERNE6A	Mod 4: Renewable Energy	25
EERPE6A / EPRPE6A	Mod 5: Research Project	90

1.4.4 Enquiries (MEng Energy Efficiency):

Dr Trudy Sutherland

Tel: (016) 950-9724

E-mail: [trudys@vut.ac.za](mailto:trudys@vut.ac.za)



## 1.5 DOCTOR OF ENGINEERING IN ELECTRICAL ENGINEERING: ELECTRONIC ENGINEERING (DP0820)

1.5.1 Admission Requirements: A MEng in Electrical Engineering: Electronic Engineering. Ad hoc cases will be treated on merit.

1.5.2 Duration of Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

1.5.3 Programme Structure: This instructional programme comprises of a thesis only. This qualification is offered at the Vanderbijlpark campus only.

### CAREER OPPORTUNITIES

A successful candidate can pursue a career as a technician in one of the following specialisation fields: Electronic design and development; Electronic maintenance; Electronic communication design and development.

## 2. QUALIFICATIONS: ELECTRICAL ENGINEERING: POWER ENGINEERING

### 2.1 DIPLOMA IN ELECTRICAL ENGINEERING: POWER ENGINEERING(DI0824)

2.1.1 Duration of Programme: Three years' full-time qualification, 360 credits. Sixty credits are allocated to Workplace Based Learning.

2.1.2 Curriculum

#### YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
EEESK1A	Engineering Skills 1	5
EPEEN1A	Electrical Engineering 1	10
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

#### YEAR 1 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY1A	Applied Communication Skills 1.2	8
EPCOA2A	Computing Applications 2	7
EIDSY1A	Digital Systems 1	10
EPEEN2A	Electrical Engineering 2	10
EEEE1A	Electronics 1	10
AMMAT2A	Mathematics 2	10
EESPA1A	Safety Principles And Law 1	5

#### YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
EPEEN3A	Electrical Engineering 3	10
EPEMA2A	Electrical Machines 2	10
EPSYS2A	Power Systems 2	10
AMMAT3A	Mathematics 3	10
EEEE2A	Electronics 2	10
EIDSY2A	Digital Systems 2	10

#### YEAR 2 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY2A	Applied Communication Skills 2.2	8
EPSYS3A	Power Systems 3	10
EEPEL3A	Power Electronics 3	10
EPEN2A	Alternative Energy 2 (Power)	10
EPEMA3A	Electrical Machines 3	10
EPEEN4A	Electrical Engineering 4	10
EICSY2A	CHOICE MODULE (Select 1) Control Systems 2	10

#### YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
EPEPR3A	Electrical Protection 3	10
EPEN3A	Alternative Energy 3 (Power)	10
EPEMA4A	Electrical Machines 4	10

EPTXP3A	Transmission 3 (Power)	10
EEPEL4A	Power Electronics 4	10
EPEMN2A	Energy Management 2	10
EEEE3A	CHOICE MODULE (Select 1) Electronics 3	10

### Compulsory WPBL Placement

MODULE CODE	NAME OF MODULE	CREDITS
EPEXL1A	Experiential Learning 1	14
EPEXL2A	Experiential Learning 2	16
EPPRJ4A	Engineering Project 4	30

### Curriculum: Diploma in Electrical Engineering: Power Engineering (4 year Extended programme) – DE0864

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics and Chemistry. In the second year of study, the students will augment their foundation knowledge of Maths, Physics and Chemistry to reach the level of the mainstream programme. Students are required to pass all subjects in both years of the foundation phase to be able to proceed to the next year of study.

#### YEAR 1 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAXCH1A	Foundation Chemistry 1	Foundation		10
AMXMA1A	Foundation Mathematics 1	Foundation		10
APXPH1A	Foundation Physics 1	Foundation		10
ASICT1A	ICT Skills 1	Regular	10	
EEESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

#### YEAR 1 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAXCH2A	Foundation Chemistry 2	Foundation		10
AMXMA2A	Foundation Mathematics 2	Foundation		10
APXPH2A	Foundation Physics 2	Foundation		10
EPCOA2A	Computing Applications 2	Regular	7	
EESPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

#### YEAR 2 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AMMAT1B	Mathematics 1	Regular (Augm)		10
APHYS1B	Physics 1	Regular (Augm)		10
EPEEN1A	Electrical Engineering 1	Regular		10

After completion of the first two years, the student will continue to year 3 and 4, following the regular modules.

### 2.1.3 Government Certificate of Competency (GCC)

The Certificate of Competency as a Mechanical and / or Electrical Engineering Technician is issued by the Department of Labour (Factories) or the Department of Minerals and Energy Affairs (Mines) to a person with the necessary academic diploma / degree and practical experience and who has passed a qualifying examination. A person with such a certificate must take responsibility for the operation of a factory or mine where the consumption of electricity exceeds a certain limit.

This University is one of a few tertiary institutions accredited to offer Diplomas complying with the requirements for admission to the GCC examination. This is not a GCC qualification, only a subject package complying with the entry requirements to the GCC examination.

This is for the combination of subjects of the National Diploma and NOT for the Diploma in Engineering.

## Government Certificate of Competency (GCC)

- ICT Skills I
- Computing Applications II
- Mathematics I
- Mathematics II
- Industrial Electronics II
- Power Electronics III
- Electronics I
- Electronics II
- Mechanics I
- Mechanical Engineering Drawing I
- Mechanical Technology I
- Mechanical Technology II
- Mechanical Technology III
- Power Systems II
- Power Systems III
- Electrical Engineering I
- Electrical Engineering II
- Electrical Engineering III
- Electrical Machines II
- Electrical Machines III
- Electrical Protection III
- Digital Systems I
- Applied Communication Skills 1.1
- Applied Communication Skills 1.2
- Applied Communication Skills 2.1
- Applied Communication Skills 2.2
- Electrical Transmission III (Power)
- Strength of Materials II
- Strength of Materials III

Government Certificate of Competency Contact Information: Written application for admission to the examination for the Certificate of Competency can be addressed to:

Mines & Industries  
Department of Minerals & Energy Affairs  
Private Bag X59  
Pretoria, 0001

The written application must also include a letter stating that all the prescribed theoretical requirements have been met. This letter is obtainable from the Department of Power Engineering.

## 2.2 ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING: POWER ENGINEERING (AD0824)

2.2.1 Duration of Programme: One-year, full-time qualification.

2.2.2 Curriculum

### SEMESTER 1

MODULE CODE	NAME OF MODULE COMPULSARY	CREDITS
EPPRO4A	Electrical Engineering Project	25
EPREM4A	Engineering Research Methods	15
EPHVE4A	High Voltage Engineering	20
EPELP4A	Electrical Protection	20
EPELM4A	Electrical Machines	20

### SEMESTER 2

MODULE CODE	NAME OF MODULE COMPULSARY	CREDITS
AMAEM4A	Advanced Engineering Mathematics	15
BHEMN4A	Engineering Management	10
EPEPS4A	Electrical Power Systems	20
EPEPW4A	Power Electronics	20

## 2.3 MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING: POWER ENGINEERING (MP0820)

2.3.1 Admission Requirements: A BEng degree (Power) or equivalent.

2.3.2 Programme Structure: At least one year's, full-time research, concluded with a Master's dissertation.

## 2.4 DOCTOR OF ENGINEERING IN ELECTRICAL ENGINEERING: POWER ENGINEERING (DP0820)

2.4.1 Admission Requirements: Master of Engineering in Electrical Engineering; Power Engineering. Ad hoc cases will be treated on merit.

2.4.2 Duration of Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

2.4.3 Programme Structure: This instructional programme comprises of a doctoral thesis only, offered at the Vanderbijlpark campus.

## CAREER OPPORTUNITIES

A successful candidate can pursue a career as a Power Engineering technician in one of the following specialisation fields: Electrical machines; generation of electricity; electrical transmission and distribution, electrical protection, alternative energy and energy management. The specialisation fields above each offer careers in design and development and maintenance.

## 3. QUALIFICATIONS: ELECTRICAL ENGINEERING: PROCESS CONTROL

### 3.1 DIPLOMA IN ELECTRICAL ENGINEERING: PROCESS CONTROL ENGINEERING (DI0825)

3.1.1 Duration of Programme: Offered full-time, contact classes are for a period for six semesters (three years) followed by a one-year Workplace Based Learning (WBL) (carried out through attachment to industry) component.

3.1.2 Curriculum

#### YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
EEESK1A	Engineering Skills 1	5
EPEEN1A	Electrical Engineering 1	10
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

#### YEAR 1 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY1A	Applied Communication Skills 1.2	8
EICOA2A	Computing Applications 2	7
EIDSY1A	Digital Systems 1	10
AMMAT2A	Mathematics 2	10
EIPRI1A	Process Instrumentation 1	10
APHYP2A	Physics 2 Practical	5
APHYT2A	Physics 2 Theory	5
EESPA1A	Safety Principles and Law 1	5

#### YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
EPEEN2A	Electrical Engineering 2	10
EEELE1A	Electronics 1	10
EIENP1A	Engineering Programming 1	10
EINET1A	Networks 1	10
EIPRI2A	Process Instrumentation 2	10
AMMAT3A	Mathematics 3	10

#### YEAR 2 - Semester 2

MODULE CODE	NAME OF MODULE	CREDITS
EIDCS1A	Digital Control Systems 1	10
HKCOY2A	Applied Communication Skills 2.2	8
EIDSY2A	Digital Systems 2	10
EEELE2A	Electronics 2	10
EIENP2A	Engineering Programming 2	10
EINET2A	Networks 2	10
EIPRI3A	Process Instrumentation 3	10

#### YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
EEPEL3A	Power Electronics 3	10
EIDSY3A	Digital Systems 3	10
EINET3A	Networks 3	10
EICSY2A	Control Systems 2	10
EIDCS2A	Digital Control Systems 2	10
EIENP3A	Engineering Programming 3	10

### YEAR 3 - Semester 2

MODULE CODE	NAME OF MODULE OPTIONAL ADDITIONAL	CREDITS
EICSY3A	Control Systems 3	10

#### Compulsory WPBL Placement

MODULE CODE	NAME OF MODULE	CREDITS
EIEXL1A	Experiential Learning 1 (Process Control)	14
EIEXL2A	Experiential Learning 2 (Process Control)	16
EIPRJ4A	Engineering Project 4 (Process Control)	30

#### Curriculum: Diploma Electrical Engineering: Process Control Engineering (4 year Extended programme) – DE0865

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics and Chemistry. In the second year of study, the students will augment their foundation knowledge of Maths, Physics and Chemistry to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

#### YEAR 1 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXH1A	Foundation Chemistry 1	Foundation	10	
AMXMA1A	Foundation Mathematics 1	Foundation	10	
APXPH1A	Foundation Physics 1	Foundation	10	
ASICT1A	ICT Skills 1	Regular	10	
EEESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

#### YEAR 1 - SEMESTER 2

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXH2A	Foundation Chemistry 2	Foundation	10	
AMXMA2A	Foundation Mathematics 2	Foundation	10	
APXPH2A	Foundation Physics 2	Foundation	10	
EPCOA2A	Computing Applications 2	Regular	7	
EESPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

#### YEAR 2 - SEMESTER 1

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
			Regular
AMMAT1B	Mathematics 1	Regular (Augm)	10
APHYS1B	Physics 1	Regular (Augm)	10
EPEEN1A	Electrical Engineering 1	Regular	10

After completion of the first two years, the student will continue to year 3 and 4, following the regular modules.

### 3.2. ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING: PROCESS CONTROL ENGINEERING (AD0825)

3.2.1 Duration of Programme: One-year, full-time qualification.

3.2.2 Curriculum

SEMESTER 1		CREDITS
MODULE CODE	NAME OF MODULE COMPULSORY	25
EIPRO4A	Electrical Engineering Project	15
EIREM4A	Engineering Research Methods	20
EIPRI4A	Process Instrumentation	20
EIDSP4A	Digital Signal Processing	

SEMESTER 2		CREDITS
MODULE CODE	NAME OF MODULE COMPULSORY	15
AMAEM4A	Advanced Engineering Mathematics	10
BHEMN4A	Engineering Management	20
EIDCS4A	Digital Control Systems	20
EIINT4A	Industrial Network Systems	

### 3.3 MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING: PROCESS CONTROL ENGINEERING (MP0820)

3.3.1 Admission Requirements: A BEng degree in Electrical Engineering: Process Control Engineering or equivalent level 8 qualification.

3.3.2 Programme Structure: At least one year's, full-time research, concluded with a Master's dissertation.

### 3.4 DOCTOR OF ENGINEERING IN ELECTRICAL ENGINEERING: PROCESS CONTROL ENGINEERING (DP0820)

3.4.1 Admission Requirements: Master of Engineering in Electrical Engineering: Process Control Engineering. Ad hoc cases will be treated on merit.

3.4.2 Duration of Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

3.4.3 Programme Structure: This instructional programme comprises of a doctoral thesis only, offered at the Vanderbiljpark campus.

#### CAREER OPPORTUNITIES

The computerisation of modern instrumentation and process control platforms in various industries, created a vacuum period in training of skills development for technicians in this modern industrial environment which led to a huge demand for technical skilled manpower in this field.

#### 4. QUALIFICATIONS: ELECTRICAL ENGINEERING: COMPUTER SYSTEMS ENGINEERING

##### 4.1 DIPLOMA IN ELECTRICAL ENGINEERING: COMPUTER SYSTEMS ENGINEERING (DI0822)

4.1.1 Duration of Programme: Three years' qualification, offered full-time. Contact classes are for a period of six semesters (three years) followed by a one-year Workplace Based Learning (WBL) (carried out through attachment to industry) component.

4.1.2 Curriculum



**YEAR 1 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
EESK1A	Engineering Skills 1	5
EPEEN1A	Electrical Engineering 1	10
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

**YEAR 1 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY1A	Applied Communication Skills 1.2	8
EICOA2A	Computing Applications 2	7
EIDSY1A	Digital Systems 1	10
EPEEN2A	Electrical Engineering 2	10
AMMAT2A	Mathematics 2	10
APHYP2A	Physics 2 Practical	5
APHYT2A	Physics 2 Theory	5
EESPA1A	Safety Principles and Law 1	5

**YEAR 2 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
EIDSY2A	Digital Systems 2	10
EEEE1A	Electronics 1	10
EIENP1A	Engineering Programming 1	10
EINET1A	Networks 1	10
EISEN1A	Software Engineering 1	10
EIOSY1A	Operating Systems 1	10

**YEAR 2 - Semester 2**

MODULE CODE	NAME OF MODULE	CREDITS
HKCOY2A	Applied Communication Skills 2.2	8
EIDSY3A	Digital Systems 3	10
EEEE2A	Electronics 2	10
EIENP2A	Engineering Programming 2	10
EINET2A	Networks 2	10
EIOSY2A	Operating Systems 2	10
EISEN2A	Software Engineering 2	10

**YEAR 3 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
EIENP3A	Engineering Programming 3	10
AMMAT3A	Mathematics 3	10
EINET3A	Networks 3	10
EIOSY3A	Operating Systems 3	10
EISEN3A	Software Engineering 3	10
EIDSY4A	Digital Systems 4	10
<b>Compulsory WPBL Placement</b>		
EIEXC1A	Experiential Learning 1 (Computer Systems)	14
EIEXC2A	Experiential Learning 2 (Computer Systems)	16
EIPRC4A	Engineering Project 4	30

**Curriculum: Diploma in Electrical Engineering: Computer Systems Engineering (4 year Extended programme) – DE0862**

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics and Chemistry. In the second year of study, the students will augment their foundation knowledge of Maths, Physics and Chemistry to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

**YEAR 1 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	REGULAR CREDITS	FOUND CREDITS
AAXCH1A	Foundation Chemistry 1	Foundation	10	10
AMXMA1A	Foundation Mathematics 1	Foundation	10	10
APXPH1A	Foundation Physics 1	Foundation	10	10
ASICT1A	ICT Skills 1	Regular	10	
EESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

**YEAR 1 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	REGULAR CREDITS	FOUND CREDITS
AAXCH2A	Foundation Chemistry 2	Foundation	10	10
AMXMA2A	Foundation Mathematics 2	Foundation	10	10
APXPH2A	Foundation Physics 2	Foundation	10	10
EPCOA2A	Computing Applications 2	Regular	7	
EESPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

**YEAR 2 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	REGULAR CREDITS	FOUND CREDITS
AMMAT1B	Mathematics 1	Regular (Aug)	10	
APHYS1B	Physics 1	Regular (Aug)	10	
EPEEN1A	Electrical Engineering 1	Regular	10	

After completion of the first two years, the student will continue to year 3 and 4, following the regular modules.

**4.2. ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING: COMPUTER SYSTEMS ENGINEERING (AD0822)**

4.2.1 Duration of Programme: One-year, full-time qualification.

4.2.2 Curriculum

**SEMESTER 1**

MODULE CODE	NAME OF MODULE	CREDITS
<b>COMPULSORY</b>		
EIPRE4A	Electrical Engineering Project	25
EIREM4A	Engineering Research Methods	15
<b>ELECTIVES (Choose 2)</b>		
EIMSD4A	Micro Systems Design **	20
EEAEL4A	Electronics **	20
EINTP4A	New Technology Programming ***	20
EIDBP4A	Database Programming ***	20

**SEMESTER 2**

MODULE CODE	NAME OF MODULE	CREDITS
<b>COMPULSORY</b>		
AMAEM4A	Advanced Engineering Mathematics	15
BHEMN4A	Engineering Management	10
<b>ELECTIVES (Choose 2)</b>		
EISEN4A	Software Engineering ***	20
EIWDC4A	Wireless Data Communications **	20
EICNS4A	Computer Network Security **	20
EIDBS4A	Database Administration ***	20
EIARI4A	Artificial Intelligence ***	20

(\*\* and \*\*\* should be taken together as a specialisation field)

**4.3 MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING: COMPUTER SYSTEMS ENGINEERING (MP0820)**

4.3.1 Admission Requirements: A BEng degree in Electrical Engineering: Computer Systems Engineering or equivalent level 8 qualification.

4.3.2 Programme Structure: At least one year's, full-time research, concluded with a Master's dissertation.

**4.4 DOCTOR OF ENGINEERING IN ELECTRICAL ENGINEERING: COMPUTER SYSTEMS ENGINEERING (DP0820)**

4.4.1 Admission Requirements: Master of Engineering in Electrical Engineering: Computer Systems Engineering. Ad hoc cases will be treated on merit.

4.4.2 Programme Structure: At least two years' full-time research, concluded with a Doctoral Thesis. This qualification is offered at the Vanderbijlpark campus only.

## CAREER OPPORTUNITIES

The computerisation and digitization of most facets of modern business and industry, together with the great demand for technical skilled manpower created a multitude of possibilities for such a career in Computer Systems Engineering.

## ENQUIRIES

Enquiries may be addressed to:

The Head of Department:  
Electrical Engineering  
Faculty of Engineering and Technology  
Vaal University of Technology  
Private Bag X021  
Vanderbijlpark 1900

Tel: (016) 950-9295/6739

e-mail: [refilwem1@vut.ac.za](mailto:refilwem1@vut.ac.za) or [cuthbertn@vut.ac.za](mailto:cuthbertn@vut.ac.za)

Website: [www.vut.ac.za](http://www.vut.ac.za)

# DEPARTMENT: INDUSTRIAL ENGINEERING & OPERATIONS MANAGEMENT AND MECHANICAL ENGINEERING

## 1. QUALIFICATIONS: INDUSTRIAL ENGINEERING

### 1.1 DIPLOMA IN INDUSTRIAL ENGINEERING (DI0830)

1.1.1 Duration of Programme: Three-year, full-time qualification: Five semesters (S1 to S5) of theoretical learning and one semester (at least) of Workplace Based Learning (Industry).

1.1.2 Curriculum

#### YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
AAECH1A	Engineering Chemistry 1	10
EEESK1A	Engineering Skills 1	5
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

#### YEAR 1 - Semester 2

HKCOY1A	Applied Communication Skills 1.2	8
EBCOA2A	Computing Applications 2	7
AAECH2A	Engineering Chemistry 2	10
EMEDR1A	Engineering Drawing 1	10
EBMRE2A	Manufacturing Relations 2	10
AMMAT2A	Mathematics 2	10
APHYT2A	Physics 2 (Theory)	5
APHYP2A	Physics 2 (Practical)	5
EBSPA1A	Safety Principles and Law 1	5

#### YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
EPEEN1A	Electrical Engineering 1	10
EBEWS1A	Engineering Work Study 1	10
EMMEN1A	Manufacturing Engineering 1	10
EBPEN1A	Production Engineering 1	10
EBQTE1A	Qualitative Techniques 1	10
EMMEC1A	Mechanics 1	10
AMMAT3A	Mathematics 3	10

#### YEAR 2 - Semester 2

HKCOY2A	Applied Communication Skills 2.2	8
BACOS2A	Costing 2	10
EBEWS2A	Engineering Work Study 2	10
EBFLA2A	Facility Layout and Material Handling 2	10
EMMEN2A	Mechanical Manufacturing Engineering 2	10
EBPEN2A	Production Engineering 2	10
EBQAS2A	Quality Assurance 2	10
<b>Elective modules (select one):</b>		
EBCAD1A	Computer-Aided Drafting 1	10
EPEEN2A	Electrical Engineering 2	10
EMMAE1A	Maintenance Engineering 1	10
EMMOM2A	Mechanics of Machines 2	10
EMSOM2A	Strength of Materials 2	10
EMMED2A	Mechanical Engineering Design 2	10

#### YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
EBAUT3A	Automation 3	10
EBEWS3A	Engineering Work Study 3	10
EBIAC3A	Industrial Accounting 3	10
EBILE3A	Industrial Leadership 3	10
EBORE3A	Operations Research 3	10

#### YEAR 3 - Semester 2 (Compulsory)

EBWIL1A	Work Integrated Learning (Industrial)	60
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#### Curriculum: Diploma in Industrial Engineering (4 year Extended programme) – DE0831

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics, Chemistry and Drawing. In the second year of study, the students will augment their foundation knowledge of Maths, Physics, Chemistry and Drawing to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.



**YEAR 1 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXH1A	Foundation Chemistry 1	Foundation		10
AMXMA1A	Foundation Mathematics 1	Foundation		10
APXPH1A	Foundation Physics 1	Foundation		10
ASICT1A	ICT Skills 1	Regular	10	
EEESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

**YEAR 1 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAAXH2A	Foundation Chemistry 2	Foundation		10
AMXMA2A	Foundation Mathematics 2	Foundation		10
APXPH2A	Foundation Physics 2	Foundation		10
EMXDRI1A	Foundation Drawing 1	Foundation		10
EBCOA2A	Computing Applications 2	Regular	7	
EBSPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

**YEAR 2 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAECH1B	Engineering Chemistry 1	Regular (Augm)		10
AMMAT1B	Mathematics 1	Regular (Augm)		10
APHYS1B	Physics 1	Regular (Augm)		10
EMMEC1B	Mechanics 1	Regular (Augm)		10

**YEAR 2 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAECH2A	Engineering Chemistry 2	Regular		10
AMMAT2A	Mathematics 2	Regular		10
APHYP2A	Physics 2 – Practical	Regular	5	
APHYT2A	Physics 2 – Theory	Regular	5	
EBMRE2A	Manufacturing Relations 2	Regular	10	
EMEDR1B	Engineering Drawing 1	Regular (Augm)		10

**YEAR 3 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
HKCOX2A	Applied Communication Skills 2.1	Compulsory	8	
EBEWS1A	Engineering Work Study 1	Compulsory	10	
EBPEN1A	Production Engineering 1	Compulsory	10	
EBQTE1A	Qualitative Techniques 1	Compulsory	10	
EMMEN1A	Mechanical Manufacturing Engineering 1	Compulsory	10	
EPEEN1A	Electrical Engineering 1	Compulsory	10	
AMMAT3A	Mathematics 3	Compulsory	10	

**YEAR 3 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
HKCOY2A	Applied Communication Skills 2.2	Compulsory	8	
BACOS2A	Costing 2	Compulsory	10	
EBEWS2A	Engineering Work Study 2	Compulsory	10	
EBFLA2A	Facility Layout and Material Handling	Compulsory	10	
EBPEN2A	Production Engineering 2	Compulsory	10	
EBQAS2A	Quality Assurance 2	Compulsory	10	
EMMEN2A	Mechanical Manufacturing Engineering 2	Compulsory	10	
	<b>Elective modules (select one):</b>			
EBCAD1A	Computer-Aided Draughting 1	Elective	10	
EMMAE1A	Maintenance 1	Elective	10	
EMMOM2A	Mechanics of Machines 2	Elective	10	
EMSOM2A	Strength of Materials 2	Elective	10	
EPEEN2A	Electrical Engineering 2	Elective	10	
EMMED2A	Mechanical Engineering Design 2	Elective	10	

**YEAR 4 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
EBAUT3A	Automation 3	Compulsory		10
EBEWS3A	Engineering Work Study 3	Compulsory		10
EBIAC3A	Industrial Accounting 3	Compulsory		10
EBILE3A	Industrial Leadership 3	Compulsory		10
EBORE3A	Operational Research 3	Compulsory		10

**YEAR 4 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
EBWL1A	Work Integrated Learning (Industrial)	Compulsory	60

**1.2 ADVANCED DIPLOMA IN INDUSTRIAL ENGINEERING (AD0830)**

1.2.1 Duration of Programme: A minimum one-year, full-time course.

1.2.2 Curriculum

MODULE CODE	NAME OF MODULE	CREDITS
	<b>YEAR 1 - Semester 1 (3 compulsory modules)</b>	
EBMPS4A	Manufacturing and Production Science	20
EBQIC4A	Equality Control and Improvement	20
EBRM14A	Research Methods and Industrial Engineering Project	20
	<b>Semester 2 (2 compulsory &amp; 2 electives)</b>	
EBFPD4A	Facility Planning and Design	
EBMOS4A	Modelling and Simulation	20
	<b>Select any two (2) electives</b>	
EBHFE4A	Human Factors and Ergonomics	20
EBIEM4A	Industrial Engineering Management	20
EBFEE4A	Financial Engineering and Economics	20
EBIKM4A	Information and Knowledge Management	20

**1.3 POSTGRADUATE DIPLOMA IN INDUSTRIAL ENGINEERING (PG0830)**

1.3.1 Duration of Programme: A minimum one-year, full-time course.

1.3.2 Curriculum

MODULE CODE	NAME OF MODULE	CREDITS
	<b>Year Modules (2 compulsory modules)</b>	
EBIPP5A	Industrial Engineering Project Planning and Design	30
EBIP15A	Industrial Engineering Project Design and Implementation	30
	<b>Semester 1 (2 compulsory modules)</b>	
EBADA5A	Advanced Decision Analysis	20
EBAM55A	Advanced Modelling and Simulation	20
	<b>Semester 2 (1 compulsory &amp; 1 elective)</b>	
EBMPE5A	Manufacturing and Production Engineering	20
	<b>Elective modules (select one):</b>	
EBAFD5A	Advanced Facility Design	20
EBFEN5A	Financial Engineering	20
EBPRE5A	Project Engineering	20

**1.4 MASTER OF ENGINEERING IN INDUSTRIAL ENGINEERING (MP0830)**

1.4.1 Admission Requirements: A BEng Degree or equivalent NQF level 8 qualification including the Postgraduate Diploma.

1.4.2 Duration of Programme: The equivalent of a minimum one-year full-time study.

1.4.3 Programme Structure: This programme comprises of a thesis only.

**CAREER OPPORTUNITIES**

There is a great need for persons who are well trained in Industrial Engineering. Job opportunities as business advisors, industrial analysts, production personnel, planning personnel and line managers are available in all types of manufacturing companies as well as in service organisations. Experience has shown that people with a qualification in Industrial Engineering and a dynamic personality quickly progress to the management level or start their own businesses.

**2. QUALIFICATIONS: OPERATIONS MANAGEMENT****2.1 DIPLOMA IN OPERATIONS MANAGEMENT (DI0400)**

2.1.1 Duration of Programme: Five semesters of theoretical learning and one semester Operations Management Practice (Project-based).

2.1.2 Curriculum



## YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
ASICT1A	ICT Skills 1	10
EBMFX1A	Manufacturing Technology 1.1	10
AMMAT1A	Mathematics 1	10
EBOPX1A	Operations Management 1.1 (Industrial)	10
EBOGX1A	Organisational Effectiveness 1.1	10
EBWPX1A	Workplace Dynamics 1.1	10

## YEAR 1 - Semester 2

HKCOY1A	Applied Communication Skills 1.2	8
EBMFY1A	Manufacturing Technology 1.2	10
EBOPY1A	Operations Management 1.2 (Industrial)	10
EBOGY1A	Organisational Effectiveness 1.2	10
EBQMA1A	Quality Management 1	10
EBWPY1A	Workplace Dynamics 1.2	10

## YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
<b>All Compulsory &amp; 1 Elective</b>		
HKCOX2A	Applied Communication Skills 2.1	8
BACEX1A	Costing and Estimating 1.1	10
EBMAX2A	Operations Management 2.1	10
EBOGX2A	Organisational Effectiveness 2.1	10
EBQAS2A	Quality Assurance 2	10
EBSTX1A	Statistics 1.1	10

### Elective modules (select one):

AAECH1A	Engineering Chemistry 1	10
HLAWX1A	Labour Law 1.1	15
APHYS1A	Physics 1	10
ASPRG1A	Programming 1	10

## YEAR 2 - Semester 2 All Compulsory & 1 Elective

HKCOY2A	Applied Communication Skills 2.2	8
BACEY1A	Costing and Estimating 1.2	10
EBMAY2A	Operations Management 2.2	10
EBMAT2A	Operations Management Techniques 2	10
EBOGY2A	Organisational Effectiveness 2.2	10

### Elective modules (select one):

AAECH2A	Engineering Chemistry 2	10
EMMAE2A	Maintenance Engineering 2	10
EMMEN2A	Manufacturing Engineering 2	10
APHYT2A/ APHYP2A	Physics 2 Theory & Practical	10
ASPRG2A	Programming 2	10

## YEAR 3 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
<b>(All modules are compulsory)</b>		
EBILE3A	Industrial Leadership 3	10
EBMAX3A	Operations Management 3.1	10
EBMAT3A	Operations Management Techniques 3	10
EBOMG3A	Operations Management Technology 3	10
EBOEG3A	Organisational Effectiveness 3	10

## YEAR 3 - Semester 2 (Compulsory)

EBMAP1A	Operations Management Practice 1	60
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## 2.2 ADVANCED DIPLOMA IN OPERATIONS MANAGEMENT (AD0400)

2.2.1 Duration of Programme: A minimum one-year, full-time course.

### 2.2.2 Curriculum

MODULE CODE	NAME OF MODULE	CREDITS
<b>YEAR 1 - Semester 1 (3 compulsory modules)</b>		
EBQMA4A	Quality Management	20
EBMAS4A	Manufacturing Systems	20
EBRMO4A	Research Methodology for Operations Management	20
<b>YEAR 1 - Semester 2 (2 compulsory &amp; 1 elective)</b>		
EBFIM4A	Financial Management	20
EBMOM4A	Modelling in Operations Management	20
<b>*Electives (select only 1)</b>		
EBSCM4A	*Supply Chain Management	20
EBWDE4A	*Workplace Design	20

## 2.3 POSTGRADUATE DIPLOMA IN OPERATIONS MANAGEMENT (PG0400)

2.3.1 Duration of Programme: A minimum one-year, full-time course.

## 2.3.2 Curriculum

MODULE CODE	NAME OF MODULE	CREDITS
<b>YEAR MODULES (2 compulsory modules)</b>		
EBOPP5A	Operations Management Project Planning and Design	30
EBOP15A	Operations Management Project Design and Implementation	30

## Semester 1 (2 compulsory modules)

EBAM05A	Advanced Modelling in Operations Management	20
EBQRM5A	Quality and Reliability Management	20

## Semester 2 (1 compulsory & 1 elective module)

EBAMAS4	Advanced Manufacturing Systems	20
<b>*Electives (select only 1)</b>		
EBAIM5A	*Advanced Industrial Management	20
EBBF15A	*Business Finance	20

## CAREER OPPORTUNITIES

Operations Management offers a challenging and exciting career in the private sector. The expertise and skills that you will achieve, find their optimum applications and growth in the manufacturing industry, progressively, as Production Assistant / Production Planner, Production Scheduler / Head Planner, Production Superintendent, Production Manager and Operations Manager. People with Operations Management qualifications and experience are also well equipped to be employed in many other industries to start their own businesses.

## 3. QUALIFICATIONS: MECHANICAL ENGINEERING

### 3.1 DIPLOMA IN MECHANICAL ENGINEERING (DI0841)

3.1.1 Duration of Programme: Three-year, full-time qualification.

#### 3.1.2 Curriculum

##### YEAR 1 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX1A	Applied Communication Skills 1.1	8
AAECH1A	Engineering Chemistry 1	10
EESK1A	Engineering Skills 1	5
ASICT1A	ICT Skills 1	10
AMMAT1A	Mathematics 1	10
APHYS1A	Physics 1	10
EESIN1A	Social Intelligence 1	3

##### YEAR 1 - Semester 2

HKCOY1A	Applied Communication Skills 1.2	8
EMCOA2A	Computing Applications 2	7
AAECH2A	Engineering Chemistry 2	10
EMEDR1A	Engineering Drawing 1	10
AMMAT2A	Mathematics 2	10
APHYT2A	Physics 2 (Theory)	5
APHYP2A	Physics 2 (Practical)	5
EMSPA1A	Safety Principles and Law 1	5

### Elective modules (select one):

EMCAI2A	Computer Aided Drafting 1	10
EMMAE1A	Maintenance Engineering 1	10

##### YEAR 2 - Semester 1

MODULE CODE	NAME OF MODULE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	8
EMMEC1A	Mechanics 1	10
AMMAT3A	Mathematics 3	10
EMEDR2A	Engineering Drawing 2	10
EMMEN1A	Manufacturing Engineering 1	10
EPEEN1A	Electrical Engineering 1	10
EMFMM2A	Fluid Mechanics 2	10
EMTHE2A	Thermodynamics 2	10

##### YEAR 2 - Semester 2

HKCOY2A	Applied Communication Skills 2.2	8
EMMED2A	Mechanical Engineering Design 2	10
EMSON2A	Strength of Materials 2	10
EMMOM2A	Mechanics of Machines 2	10
EMFME3A	Fluid Mechanics 3	10
EMTHE3A	Thermodynamics 3	10

### Elective modules (select one):

EMMEN2A	Manufacturing Engineering 2	10
EMMAE2A	Maintenance Engineering 2	10

**YEAR 3 - Semester 1**

MODULE CODE	NAME OF MODULE	CREDITS
EMSOM3A	Strength of Materials 3	10
EMMOM3A	Mechanics of Machines 3	10
EMTOM3A	Theory of Machines 3	10
EMHYM3A	Hydraulic Machines 3	10
EMSPL3A	Steam Plant 3	10
EMAOM3A	Applied Strength of Materials 3	10
<b>Elective modules (select one):</b>		
EMMED3A	Mechanical Engineering Design 3	10
EMMEC2A	Modelling and Engineering Computation 2	10
EMMDE3A	Machine Design 3	10
<b>YEAR 3 - Semester 2</b>		
EMWIL1A	Work Integrated Learning 1 (Mechanical)	60

**CURRICULUM: DIPLOMA IN MECHANICAL ENGINEERING (4 YEAR EXTENDED PROGRAMME) – DE0841**

The purpose of the Extended Diploma programme is to assist students who enter the University with APS score of minimum 22 by giving them more time to reach the level of competency similar to those who enter with higher APS scores. The programme extends the 3-year programme into 4 years by spreading the first year of study over 2 years with the inclusion of foundational modules as well as mainstream programme modules. The foundation modules in the first year of study will help students to improve their competency in Maths, Physics, Chemistry and Drawing. In the second year of study, the students will augment their foundation knowledge of Maths, Physics, Chemistry and Drawing to reach the level of the mainstream programme. Students are required to pass all modules in both years of the foundation phase to be able to proceed to the next year of study.

**YEAR 1 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAXCH1A	Foundation Chemistry 1	Foundation		10
AMXMA1A	Foundation Mathematics 1	Foundation		10
APXPH1A	Foundation Physics 1	Foundation		10
ASICT1A	ICT Skills 1	Regular	10	
EEESK1A	Engineering Skills 1	Regular	5	
EESIN1A	Social Intelligence 1	Regular	3	
HKCOX1A	Applied Communication Skills 1.1	Regular	8	

**YEAR 1 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Found
AAXCH2A	Foundation Chemistry 2	Foundation		10
AMXMA2A	Foundation Mathematics 2	Foundation		10
APXPH2A	Foundation Physics 2	Foundation		10
EMXDR1A	Foundation Drawing 1	Foundation		10
EMCOA2A	Computing Applications 2	Regular	7	
EMSPA1A	Safety Principles and Law 1	Regular	5	
HKCOY1A	Applied Communication Skills 1.2	Regular	8	

**YEAR 2 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Regular
AAECH1B	Engineering Chemistry 1	Regular (Augm)	10	
AMMAT1B	Mathematics 1	Regular (Augm)	10	
APHYS1B	Physics 1	Regular (Augm)	10	
EMMEC1B	Mechanics 1	Regular (Augm)	10	
EPEEN1A	Electrical Engineering 1	Regular	10	

**YEAR 2 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS	
			Regular	Regular
AAECH2A	Engineering Chemistry 2	Regular	10	
AMMAT2A	Mathematics 2	Regular	10	
APHYP2A	Physics 2 – Practical	Regular	5	
APHYT2A	Physics 2 - Theory	Regular	5	
EMEDR1B	Engineering Drawing 1	Regular (Augm)	10	
<b>Elective modules (select one)</b>				
EMCAI2A	Computer Aided Drafting 1	Elective	10	
EMMAE1A	Maintenance Engineering 1	Elective	10	

**YEAR 3 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
HKCOX2A	Applied Communication Skills 2.1	Compulsory	8
AMMAT3A	Mathematics 3	Compulsory	10
EMEDR2A	Engineering Drawing 2	Compulsory	10
EMMEN1A	Manufacturing Engineering 1	Compulsory	10
EMFMM2A	Fluid Mechanics 2	Compulsory	10
EMTHE2A	Thermodynamics 2	Compulsory	10

**YEAR 3 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
HKCOY2A	Applied Communication Skills 2.2	Compulsory	8
EMMED2A	Mechanical Engineering Design 2	Compulsory	10
EMSOM2A	Strength of Materials 2	Compulsory	10
EMMOM2A	Mechanics of Machines 2	Compulsory	10
EMFME3A	Fluid Mechanics 3	Compulsory	10
EMTHE3A	Thermodynamics 3	Compulsory	10
<b>Elective modules (select one):</b>			
EMMEN2A	Manufacturing Engineering 2	Elective	10
EMMAE2A	Maintenance Engineering 2	Elective	10

**YEAR 4 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
EMSOM3A	Strength of Materials 3	Compulsory	10
EMMOM3A	Mechanics of Machines 3	Compulsory	10
EMTOM3A	Theory of Machines 3	Compulsory	10
EMHYM3A	Hydraulic Machines 3	Compulsory	10
EMSPL3A	Steam Plant 3	Compulsory	10
EMAOM3A	Applied Strength of Materials 3	Compulsory	10
<b>Elective modules (select one)</b>			
EMMED3A	Mechanical Engineering Design 3	Elective	10
EMMEC2A	Modelling and Engineering Computation 2	Elective	10
EMMDE3A	Machine Design 3	Elective	10

**YEAR 4 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	TYPE	CREDITS
EMWIL1A	Experiential Learning 1 (Mechanical)	Compulsory	60

**3.2 ADVANCED DIPLOMA IN MECHANICAL ENGINEERING (AD0840)**

3.2.1 Duration of Programme: One-year, full-time qualification.

3.2.2 Curriculum

MODULE CODE	NAME OF MODULE	CREDITS
EMRMD4A	Research Methods & Engineering Design Project	30

**YEAR 1 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	CREDITS
EMEPR4A	Engineering Professionalism	10
EMECN4A	Engineering Economics	10
EMAEM4A	Applied Engineering Mathematics	15
EMMTS4A	Material Science	15

**YEAR 1 - SEMESTER 2**

MODULE CODE	NAME OF MODULE	CREDITS
EMTFM4A	Thermo-Fluids and Turbo Machinery	15
EMHMT4A	Heat and Mass Transfer	15
EMSMS4A	Solid Mechanics and Stress Analysis	15
EMVCE4A	Vibration and Control Engineering	15

**3.3 POSTGRADUATE DIPLOMA IN MECHANICAL ENGINEERING (PG0840)**

3.3.1 Duration of Programme: One-year, full-time qualification.

3.3.2 Curriculum

MODULE CODE	NAME OF MODULE	CREDITS
EMARM5A	Applied Research Methodology in Mechanical Engineering	30

**YEAR 1 - SEMESTER 1**

MODULE CODE	NAME OF MODULE	CREDITS
EMAEM5A	Advanced Engineering Mathematics	15
EMEMX5A	Engineering Modelling and Simulations Module 1	15

<b>ELECTIVES (Select 1)</b>		
EMICE5A	Internal Combustion Engine Analysis	8
EMMAM5A	Maintenance Management	7
<b>YEAR 1 - SEMESTER 2</b>		
EMCME5A	Continuum Mechanics	15
EMENS5A	Energy Systems	15
EMEMY5A	Engineering Modelling and Simulations Module 2	15
<b>ELECTIVES (Select 1)</b>		
EMPME5A	Production and Manufacturing	8
EMRAC5A	Refrigeration and Air-conditioning	7

### 3.4 MASTER OF ENGINEERING IN MECHANICAL ENGINEERING (MP0840)

- 3.4.1 Admission Requirements: A BEng degree or equivalent level 8 qualification including the Postgraduate Diploma.
- 3.4.2 Duration of Programme: At least one-year, full-time research.
- 3.4.3 Programme Structure: This programme comprises of a Master's dissertation only.

### 3.5 DOCTOR OF ENGINEERING IN MECHANICAL ENGINEERING (DP0840)

- 3.5.1 Admission Requirements: Master of Engineering in Mechanical Engineering or equivalent. Proof of successful completion of a Vaal University of Technology approved course in Research Methodology. Ad hoc cases will be treated on merit.

3.5.2 Duration of the Programme: At least two years' full-time research, concluded with a Doctoral Thesis.

### CAREER OPPORTUNITIES

The activities in Mechanical Engineering can therefore be grouped into design, maintenance, electromechanical and project work where the latter includes aspects such as planning of projects, cost control, evaluation of tenders, negotiations with contractors, control over the progress of the project, co-ordination of all the interested departments and commissioning of the completed project. In any heavy or light manufacturing industry, e.g. the chemical industry, iron and steel manufacturing industry, mining industry, power stations, transport services, provisional and government services, etc. Technicians are much sought after and a career in this field is lucrative and rewarding.

### 4. ENQUIRIES

Enquiries may be addressed to:

The Head of Department:

Industrial Engineering & Operations Management and Mechanical Engineering

Vaal University of Technology

Private Bag X021

VANDERBIJLPARK 1900

Tel: (016) 950-9287/9441

e-mail: lieketsengn@vut.ac.za or thomas@vut.ac.za

Website: [www.vut.ac.za](http://www.vut.ac.za)



# VUT Sport Academy

## WELCOME

The VUT Sports and Recreation would like to extend a warm welcome to you as a new student on campus. We invite you to make use of the numerous well-equipped sport facilities that are available. We have top quality coaches who are willing to help with your needs. Through sport we build the image of Vaal University of Technology (VUT). We wish you a happy and successful sporting experience.

## ADMISSION REQUIREMENTS

Registration at any one of the sport clubs is open to all full time, part time, as well as non-students at VUT. Acceptance to clubs depends on that club's constitution. There is no discrimination with regard to gender, colour, or creed at the Sport Academy and its associated divisions and clubs. This is also the policy at the Vaal University of Technology. Kindly note that only bona fide VUT students will qualify for selection to national student teams and for representing VUT at the University Sport South Africa (USSA) tournaments and Varsity sport competitions.

## SPORT CODES

USSA and Provincial Leagues	Rugby
Track and Field	Basketball
Cross Country	Softball
Road Running	Volleyball
Tennis	Netball
Table Tennis	Body Building
Dance	Aerobics
Karate	Chess
Cricket	Football
Hockey	

Head: Sports and Recreational Services:

Mr. T. Mabulelong (016) 950-9481

Administrator:

Ms. H. Molatela (016) 950-9282

Stadium Manager:

Mr. Hannes Hattingh (016) 981 6403

## FACILITIES

Isak Steyl Stadium  
2 rugby fields (floodlit)  
Grandstand & VIP lounge  
3 soccer fields (floodlit)  
1 athletics track (floodlit)  
throws practice nets (floodlit)  
Astro hockey field (floodlit)  
2 hockey grass fields (floodlit)

Hockey/cricket/soccer clubhouse  
2 cricket fields (2 x floodlit)  
8 cricket nets  
Hockey/cricket open pavilion  
6 netball courts (floodlit)  
6 tennis courts (floodlit)  
3 basketball courts (floodlit)  
Weight training room  
VUT radio station

## VUT RESIDENCES

3 tennis courts (floodlit)  
2 soccer fields  
1 gymnasium

## SPORT MERIT BURSARIES

Merit bursaries are available and awarded to athletes who are selected for the following categories:

1. Representation on National or International level
2. Representation in any South African Junior teams and/or USSA representation.
3. SA and/or USSA and/or Provincial representation.
4. School Honourary Colors and Regional representation.

The annual closing date is 31 October.

## SPORT AWARDS

### Honours:

Awarded to athletes who are selected at a senior provincial level or higher and to those who are selected to represent the different USSA teams.

### General:

The Sport Academy works in conjunction with the Academic Faculties and the Sport Management Department as well as with student sport organizations such as University South African (USSA), Varsity Sport Competitions (High performance student competitions), as well as South African Sport Federations such as South African Football Association (SAFA), Netball South Africa (NSA), Athletics South Africa (ASA), Basketball South Africa (BSA), Gauteng Cricket Board (GCB), Gauteng Softball Association (GASA), Falcons Rugby, Federation of Dance South Africa (Fedansa) Volleyball South Africa (VSA) etc.

## ENQUIRIES

### Sport Academy

Vaal University of Technology

Private Bag X021

Vanderbijlpark 1900

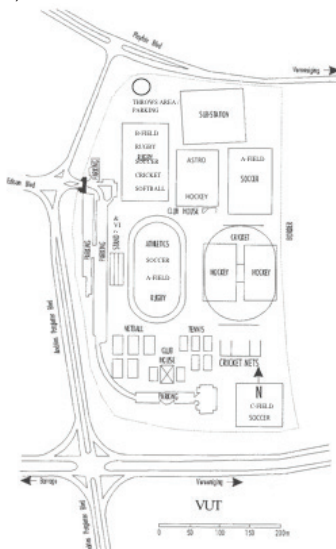
Tel: (016) 950-9917

Fax: (016) 950-9763

### Sports & Recreation

Tel: (016) 950-9282

Fax: (016) 950-9763



GPS: S26, 42' 15.1 /E27, 52' 35.1

# Bursaries & Loans

## Financial Aid Office

### VISION

To become recognised as a leading administrative section providing a creative, holistic personalised and satisfactory service to a wide range of clients, to the maximum benefit of all concerned.

### MISSION

Financial Aid Office strives to offer a comprehensive internal and external administrative service to all stakeholders, specifically catering for individual needs in a creative and professional manner in order to make a meaningful contribution to their success and in so doing to foster a long term working relationship.

The Financial Aid Office offers the following services in order to help students to obtain bursaries and/or loans to be able to complete their studies. Bursaries and/or loans are offered in all study fields at the Vaal University of Technology.

### 1. SPORT BURSARIES

The Vaal University of Technology offers Sport Bursaries to students who have excelled in sport. The value of these bursaries is determined by the level of competitions in which candidates have participated.

The retention of a sport bursary is dependent on satisfactory academic progress.

Contact number: (016) 950 9282 / 9307

### 2. MERIT AWARD (Academic)

#### 2.1 FIRST YEARS

#### Grade 12 Results

%	Criteria	Bursary
75%+	Science Engineering & Technology	R15 000
70%+	Photography	R12 000
65%+	Fine Arts	R10 000
75%+	Accounting	R10 000
70%+	Accounting	R 6 000
65%+	Accounting	R 4 000
75%+	Other	R 7 500
70%+	Other	R 5 000
65%+	Other	R 3 000

Contact number: (016) 950 7652 / 950 9342

#### 2.2 SENIOR STUDENTS Please note:

Funds are allocated in the following manner: Annual aggregate of 75+(Minimum 3 registered subjects per annum), R5000 automatic award.

### 3. COMPANY BURSARIES

At the Vaal University of Technology we fully provide assistance to all company sponsored students. Students who are in pos-

session of confirmation letters must report to the Financial Aid Bureau where their registration will be dealt with.

The following assistance is provided

- \* Meal vouchers
- \* Book vouchers
- \* Booking of residence
- \* Sending of statements
- \* Sending of Academic Records
- \* Handling of all refunds
- \* Debt Collection
- \* Company Visits

*NOTE: The Vaal University of Technology is not responsible in funding or seeking sponsorship (s) for students. It also remains the responsibility of the student to ensure that their accounts are settled on time.*

Should any information be required feel free to contact the following numbers:

Tel: (016) 950 7652/9342 Fax: (016) 950 9106

The Vaal University of Technology will provide assistance to students in securing placements for experiential training but does not guarantee such placements.

### 4. LOANS

#### i) NSFAS LOANS

##### What is NSFAS?

The National Student Financial Aid Scheme (NSFAS) is a loan and bursary scheme operating in terms of Act 56 of 99 and funded by the National Department of Education. NSFAS has been established to assist academically deserving and financially needy students to achieve academic goals at tertiary educational institutions in South Africa, with particular concern in overcoming barriers created by structural disadvantage.

##### What does NSFAS offer?

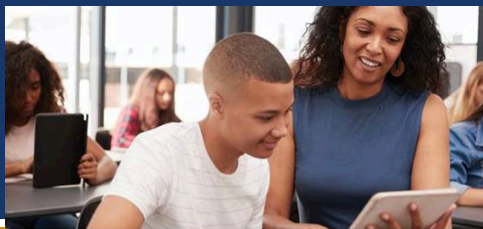
- The means to obtain a tertiary qualification
- Loans at low interest rates
- Loans without guarantees
- A reasonable repayment plan

##### NSFAS convert loan (s) to a Bursary.

Up to 40% of the award may be converted into a bursary depending on your end of year results.

- If you pass all the courses for which you have registered, you qualify for a 40% bursary.
- If you pass three quarters of the course, you qualify for a 30% bursary.
- If you pass half of the courses, you qualify for a 20% bursary.
- If you pass one quarter of the course, you qualify for a 10% bursary.
- If you pass none of the courses, you qualify for no bursary at all.

# Student Counselling and Support Career Services



**Student or teacher, nurse or manager.**  
Apply for an education loan today  
and we'll help you realise your ambition.

Student Counselling and Support as a whole is committed to offering career support, career counselling and guidance, therapeutic counselling and support as well as spiritual/pastoral guidance and support.

Career services that are offered within Student Counselling and Support

The Career Centre Support Services include:

- Career Guidance
- Psychometric Testing
- Workplace Preparation:
  - o CV writing
  - o Job hunting skills
  - o Interview skills
  - o Professionalism and ethics
- Academic Support:
  - o Adjustment to student life
  - o Study skills/time management
  - o exam preparation
  - o exam and test anxiety
  - o Personal Finance

**As enrolled students, the above services are available FREE of charge.**

Prospective students and External Clients can liaise with our department to enable them to make appropriate subject (Grade 9) and career (Grade 11/12) choice as well as graduate career development decisions. Career and subject choice counselling process include:

1. The initial interview (40-60 minutes) and parents are welcome to sit in on the interview
2. Psychometric testing (approximately 5 hours) determining your:
  - interests: which measures how people differ in their motivation, values and opinions in relation to their interests
  - Aptitude: Which measures how people differ in their ability to perform or carry out different tasks
  - Personality: Which measures how people differ in their style or manner of doing things and in the way they interact with their environment and other people
3. Feedback session (40-60 minutes), where we will be giving feedback about the assessment and discussing the outcomes with you. Parents are welcome to sit in during this session

Procedure to follow on assessing our services:

- Phone (016) 950-9244 or visit us at P021
- An initial interview will be arranged, after which a payment (R600.00) must be made at AW-Building into cost code 4220/5460. The receipt must be forwarded to us.
- A booking for psychometric testing will be confirmed as soon as the proof of payment is received
- The payment includes the feedback session that will be scheduled after the psychometric testing to discuss the results.

Career Assessments and Career Guidance Services are offered to Grade 9-12 Learners as well as those who have graduated and are looking to develop in their career.

Office Hours:  
Monday – Friday  
08:30-16:30

For Further information, please feel to contact us and calling our office

**Where to find us:** P-Block (P021-ground floor)  
**Contact number:** (016) 950 9244



VUT- Student Counselling and Support



@ScsVut

[www.vut.ac.za](http://www.vut.ac.za)

## What is a loan?

- A loan is the money you borrow to cover tertiary studies.- This loan has to be repaid.

## Who qualifies for a NSFAS loan?

You can qualify for a NSFAS loan if you are:

- A South African citizen;
- Registered at a South African university or University of Technology;
- An undergraduate, studying for a first tertiary educational qualification; or
- Studying for a second tertiary qualification, if this is necessary to practice in your chosen profession; (e.g. LLB or HDE)
- Able to demonstrate potential for academic success;
- Financially needy;
- You will, however, be expected to make your own family contribution towards the total costs of your studies. (EFC)

## How much money do you get?

- There is a minimum award and a maximum award, which is determined annually by NSFAS. Please enquire at the Financial Aid Office for the current limits.

## Where do you apply for a loan?

At the Financial Aid Office of the Vaal University of Technology.

## NOTE:

Interest on NSFAS awards is determined annually by NSFAS.

## Closing dates:

Senior students (year and first semester courses) 04 October.

First year students (year and semester courses) 31 October.

Late first year applicants: 24 January.

Late applicants will **only** be considered for awards if funds are available.

## Contact numbers:

(016) 950 9484, 9972, 9486, 9485, 9571

Brochures for NSFAS 'Students guide to funding' are available at the Financial Aid Bureau office.

Apply for a loan at the Finance Office,  
Window 14&15, VUT

Please contact your customer service consultant,  
Nonkululeko Jali.

Tel: 016 950 9948 | Email: [nonkululekoj@fundi.co.za](mailto:nonkululekoj@fundi.co.za)

For more information, visit [www.fundi.co.za](http://www.fundi.co.za)



At Fundi, we cover study fees, registration fees, outstanding balances, text books, accommodation, uniforms and stationery, laptops, tablets and other study tools.

With the agreement we have with various institutions around South Africa, we pay direct into the institutions.

And the applicant pays us back with low interest rate and at an affordable monthly repayment.

For someone to qualify for a Fundi Loan, the person must be permanently employed.

# FACULTY OF ENGINEERING & TECHNOLOGY

CHEMICAL AND METALLURGICAL ENGINEERING:

TEL: +27 16 950 9243; e-mail: rethav@vut.ac.za

CIVIL ENGINEERING:

TEL: +27 16 950 9241; e-mail: rosaliat@vut.ac.za

ELECTRICAL ENGINEERING:

TEL: +27 16 950 9295; e-mail: refilwem1@vut.ac.za

INDUSTRIAL ENGINEERING & OPERATIONS MANAGEMENT AND  
MECHANICAL ENGINEERING:

TEL: +27 16 950 9287; e-mail: lieketsengn@vut.ac.za

Vaal University of Technology, Private Bag X021 VANDERBIJLPARK 1900,  
Tel: (016) 950-9301; e-mail: lindavh@vut.ac.za, website: www.vut.ac.za

This brochure was published after the publication of the annual prospectus and should therefore be regarded as the most recent document with the latest information. Whilst every effort has been made to present the relevant information in this brochure, programme offerings may be subject to change in order to keep abreast with new developments in the higher education landscape. The institution therefore reserves the right to unilaterally change or amend any of the content/structures contained herein.

## Major expenses for the year:

Registration fee, Accommodation, Class / Course Fees, Books, Pocket Money, Transport.

For costs see VUT website [www.vut.ac.za](http://www.vut.ac.za) (look under: Study at VUT, Tuition Fees & Study Loans).

## Application for Admission & Accommodation:

Prospective students are advised to apply early in the year preceding registration for admission to the course, and / or for hostel accommodation.

Arrangements can be made to visit the campus in this regard.

Closing date for admission 30 September.

Closing date for accommodation applications 31 October.

## International Students:

31 October

## How to apply:

See front page of application form or VUT website ([www.vut.ac.za](http://www.vut.ac.za)) click on "study at VUT" and then "admissions and how to apply" and then "how to apply".

## Enquiries:

General Tel: (016) 950 9924/5 or Call Centre 0861 861 888

Admission Enquiries: (016) 950 9356

## Application Status: Self-check

Go to VUT website - [www.vut.ac.za](http://www.vut.ac.za)

Click on "admissions new students"

Click on "check your application status"

Click on blue block "check your application status"

Enter student or identification number

Click "submit"

The Department of Co-operative Education assists in experiential learning administration and placements.

Contact details: Tel: (016) 950 9496

Fax: (016) 950 9759

E-mail: [wil@vut.ac.za](mailto:wil@vut.ac.za)

The institution makes every attempt to accommodate students with disabilities.

Whilst every effort has been made to present you with the relevant information in this brochure, program offerings may be subject to change in order to keep abreast with new developments in the higher education landscape. The institution therefore reserves the right to unilaterally change or amend any of the content / structures contained herein.



**VAAI UNIVERSITY**  
OF TECHNOLOGY

*Inspiring thought. Shaping talent.*