

**Programme Accreditation
ASIIN Seal
& European Networks (EUR-
ACE®, Euro-Inf®, Eurobache-
lor®, Euromaster®)**



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Erasmus+ Programme
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The self assessment report (SAR) as part of the accreditation process

(Suggestions for writing and structuring the SAR)

The accreditation process is based on a so called self assessment report by the applying institution of higher education.

The preparation of the self assessment report offers the opportunity to use internal quality management systems and self examination processes in order to involve relevant stakeholder groups and to identify possible areas of improvement for the (further) development of a degree programme.

Ideally, the accreditation process will be utilized by the higher education institution as a quality development project and will not be seen as a formal inspection routine.

The self assessment report is created in two steps:

1. **Self assessment:** The higher education institution uses the self assessment report to analyze in an aggregated manner if and how the degree programme/s fulfil/s the accreditation criteria and which particularities have to be taken into account. Variations from the criteria can be explained.

There should be a special focus on evaluation and assessment rather than on mere description, including, for example strengths and weaknesses, challenges and envisaged solutions. The “guiding questions” below are designed to give some assistance in that respect.

The self assessment report is also a guide through the complementary attachments. Typically, a short and concise evaluation of each criterion together with a reference to the relevant attachment will be sufficient.

If the accreditation process includes a “cluster” of similar degree programmes, information that is relevant for all degree programmes should be summarized. At the same time, information that is important for specific degree programmes (e.g. intended learning outcomes, curriculum etc.) should be reported separately.

- 2. Evidence:** It is of great importance, that the self assessment is reasonably documented and supported by suitable pieces of evidence. Therefore it is necessary to compile an annex with all pieces of evidence. This annex includes all internal regulations, documents, quantitative and qualitative data and information, etc., that the higher education institution already has in use, for example where they have been generated by internal quality management processes and must not be produced just for the accreditation process. A sample list of possible pieces of evidence is included in this guideline but can and should be altered where applicable.

It is recommended to use this guideline and its structure as a reference model for the self assessment report. The structure corresponds with the accreditation criteria and differentiates between guiding questions for the analysis and suggestions for possibly useful pieces of evidence.

Please make sure that the formal of the report complies with international scientific practice. All pages of the report must be numbered. The evidence must also be numbered and clearly linked to a specific criterion and be listed in a table of content. Please make sure to provide all documents in pdf-compatible format.

Self assessment and evidence can both be provided electronically, depending on the degree of digitalization within the institution’s internal data and document management system, and can include links to specific web pages, data bases or similar.

Depending on the needs of the individual peer panels we may also ask for a printed version of the application documents in specific cases, whereas it is expected to use only electronic documents in the near future.

A Accreditation Procedure

General Data

Website of the Higher Education Institution	www.vut.ac.za
Faculty/Department offering the Degree Programme	Faculty of Engineering and Technology

Seals applied for

Name of the degree programme (in original language)	(Official) English translation of the name	Labels applied for ¹	Previous accreditation (issuing agency, validity)	Involved Technical Committees (TC)² (will be completed by ASIIN)
Master of Engineering in Energy Efficiency	Master of Engineering in Energy Efficiency		CHE (Doc G) DHET (Doc F) SAQA (Doc H)	

¹ [delete as necessary] ASIIN Seal for degree programmes; EUR-ACE® Label: European Label for Engineering Programmes; Euro-Inf®: Label European Label for Informatics; Eurobachelor®/Euromaster® Label: European Chemistry Label

² TC: Technical Committee for the following subject areas: TC 01 - Mechanical Engineering/Process Engineering; TC 02 - Electrical Engineering/Information Technology; TC 03 - Civil Engineering, Geodesy and Architecture; TC 04 - Informatics/Computer Science; TC 05 - Physical Technologies, Materials and Processes; TC 06 - Industrial Engineering; TC 07 - Business Informatics/Information Systems; TC 08 - Agriculture, Nutritional Sciences and Landscape Architecture; TC 09 - Chemistry; TC 10 - Life Sciences; TC 11 - Geosciences; TC 12 - Mathematics; TC 13 - Physics.

B Characteristics of the Degree Programme

a) Name	Final degree (original/English translation)	b) Areas of Specialization	c) Corresponding level of the EQF ³	d) Mode of Study	e) Double/Joint Degree	f) Duration	g) Credit points/unit	h) Intake rhythm & First time of offer
Master of Engineering in Energy Efficiency	MEng (EE)	Energy Efficiency	NQF 9 = EQF 7	Full time and part time		2 years full time, 4 years part time	180	2020/2021

³ EQF = The European Qualifications Framework for lifelong learning

C Self-assessment for the ASIIN-Seal⁴

1. The Degree Programme: Concept, content & implementation

Criterion 1.1 Objectives and learning outcomes of a degree programme (intended qualifications profile)

Rationale

- The 21st century presents unique energy challenges and the trend is to continue to offer conventional engineering programs. Yet there is an industrial demand for graduates who can tackle the challenges related to energy. A new educational offering dedicated to energy is essential, structured using modern approaches, technologies and standards in the energy efficiency niche arena in Southern Gauteng. This qualifications was designed according to HEQSF standards and criteria for approval by DHET, accreditation by CHE and for SAQA registration. This transition thus calls for the development of an interdisciplinary approach and the ability to combine theory practise and community engagement to for an innovative impact driven programme on opportunities that exist. This programme the structured Master of Engineering in Energy Efficiency 180 Credits on NQF level 9 focuses on energy efficiency which was presented and welcomed by industry partners ESKOM, Telkom, MTech, TFMC.
 - Students completing this qualification will have an advantage in the educational discipline as well as the STEM discipline as this qualification could also hold international accreditation.
 - VUT students meet the needs of the surrounding community – South Africa is in need of excellent STEM educators and we have the opportunity to provide these educators.
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Purpose of the qualification

The purpose of the structured Master of Engineering (Energy Efficiency) 180 Credits on NQF level 9 degree is to educate students qualifying from undergraduate programmes with specialised knowledge and skills in the field of Energy Efficiency to enable them to engage at a high level in personal intellectual growth, gainful economic activity and contributions beneficial to local society and the international society as the qualification will be aligned with European- and Namibian Universities via the EDULINK PEESA project. This program is unique in the field of energy efficiency for the social economic area and that it is a structured masters and promotes the social constructivist approach to teaching, learning, assessment and research which is embedded in VUT's approach to higher education studies. Students will learn to manage, analyse problems and determine different scenario outcomes and gain experience in energy efficiency. These advanced skills will prepare students for applying these skills in industry to better our community nationally and internationally. After the completion of this qualification the students can articulate vertically into a Doctorate in the same or relevant field.

Please see attached [Annexure A](#), [Doc E](#), [Doc I](#)

Exit level outcomes of the programme (ELO's)

The learner will be able to demonstrate:

- Specialist knowledge to enable engagement with and critique of current research or practices; and an advanced scholarship or research in a discipline of Energy Efficiency engineering.
- The ability to evaluate current processes of knowledge production and to choose an appropriate process of enquiry for Energy Efficiency engineering.
- The ability to design, select and apply appropriate and creative methods, techniques, processes or technologies to complex practical and theoretical problems related to Energy Efficiency engineering.
- The ability an understanding of the consequences of any solutions or insights generated within the specialised context of Energy Efficiency engineering.
- An ability to make autonomous ethical decisions which affect knowledge production.
- The ability to conduct a comprehensive review of leading and current research in an area of Energy Efficiency engineering to produce significant insights.

- The ability to demonstrate an ability to use resources to communicate and defend substantial ideas that are the products of research or development in to Energy Efficiency engineering.
- The ability to demonstrate an ability to make interventions within a system, based on an understanding of hierarchical relations within the Energy system

ELO1	Description	NQF level
Critical understanding & Application	Apply specialist knowledge to enable engagement with and critique of current research or practices; and an advanced scholarship or research in a discipline of Energy Efficiency engineering.	NQF 9
ELO2		
Problem-solving & Design	The ability to design, select and apply appropriate and creative methods, techniques, processes or technologies to complex practical and theoretical problems related to Energy Efficiency engineering.	NQF 9
ELO3		
Evaluation & Analysis (Independent & teamwork)	The ability to: Evaluate current processes of knowledge production and to choose an appropriate process of enquiry for energy efficiency engineering. Understand the consequences of solutions or insights generated within the specialised context of energy efficiency engineering. Utilise resources to communicate and defend substantial ideas that are the products of research or development in to energy efficiency engineering. Determine interventions within a system, based on an understanding of hierarchical relations within the energy system.	NQF 9

ELO4		
Professionalism (Ethics)	An ability to make autonomous ethical decisions which affect knowledge production.	NQF 9
ELO5		
Research	Engage in independent research and lifelong learning through specialised developed skills. To conduct a comprehensive review of leading and current research in an area of Energy Efficiency engineering to produce significant insights.	NQF 9

Student attributes after completion of the programme

1. Apply specialist knowledge to enable engagement with and critique of current research or practices; and an advanced scholarship or research in a discipline of Energy Efficiency engineering.
2. The ability to design, select and apply appropriate and creative methods, techniques, processes or technologies to complex practical and theoretical problems related to Energy Efficiency engineering.
3. The ability to:
 - Evaluate current processes of knowledge production and to choose an appropriate process of enquiry for energy efficiency engineering.
 - Understand the consequences of solutions or insights generated within the specialised context of energy efficiency engineering.
 - Utilise resources to communicate and defend substantial ideas that are the products of research or development in to energy efficiency engineering.
 - Determine interventions within a system, based on an understanding of hierarchical relations within the energy system
4. An ability to make autonomous ethical decisions which affect knowledge production.
5. Engage in independent research and lifelong learning through specialised developed skills. To conduct a comprehensive review of leading and current research in an area of Energy Efficiency engineering to produce significant insights.

Note: MEng(EF) outcomes are aligned with DHET NQF level 9: Level descriptors and to South African Quality Assurance standards ([Annexure J](#))

a. *Scope of knowledge*, in respect of which a learner is able to demonstrate: specialist knowledge to enable engagement with and critique of current research or practices; and an advanced scholarship or research in Energy Efficiency on master (180 Credits on NQF level 9)

b. *Knowledge literacy*, in respect of which a learner is able to demonstrate an ability to evaluate current processes of knowledge production and to choose an appropriate process of enquiry for the area of Energy Efficiency

c. *Method and procedure*, in respect of which a learner is able to demonstrate a command of and ability to design, select and apply appropriate and creative methods, techniques, processes or technologies to complex practical and theoretical problems

d. *Problem solving*, in respect of which a learner is able to demonstrate: an ability to use a wide range of specialised skills in identifying, conceptualising, designing and implementing methods of enquiry to address complex and challenging problems within Energy Efficiency and practices; and an understanding of the consequences of any solutions or insights generated within a specialized (Energy Efficiency)context

e. *Ethics and professional practice*, in respect of which a learner is able to demonstrate an ability to make autonomous ethical decisions which affect knowledge production, or complex organisational or professional issues, an ability to critically contribute to the development of ethical standards in an engineering context in this cas (Energy Efficiency)

f. *Accessing, processing and managing information*, in respect of which a learner is able to demonstrate an ability to design and implement a strategy for the processing and management of information, in order to conduct a comprehensive review of leading and current research in an area of Energy Efficiency to produce significant insights

g. *Producing and communicating information*, in respect of which a learner is able to demonstrate an ability to use the resources of academic and professional or occupational discourses to communicate and defend substantial ideas that are the products of research or development in an area of Energy Efficiency; and use a range of

advanced and specialised skills and discourses appropriate to Energy Efficiency disciplines or

practice, to communicate to a range of audiences with different levels of knowledge or expertise

h. Context and systems, in respect of which a learner is able to demonstrate an ability to make interventions at an appropriate level within a system, based on an understanding of hierarchical relations within the system, and the ability to address the intended and unintended consequences of interventions

i. Management of learning, in respect of which a learner is able to demonstrate an ability to develop his or her own learning strategies which sustain independent learning and academic or professional development, and can interact effectively within the learning or professional group as a means of enhancing learning

j. Accountability, in respect of which a learner is able to demonstrate an ability to operate independently and take full responsibility for his or her own work, and, where appropriate, to account for leading and initiating processes and implementing systems, ensuring good resource management and governance practices

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Guiding Questions

- **How has the intended competence profile of the degree programme been developed (regarding launch of the process, procedure, participants)?**

Members from industry and relevant stakeholder were invited to Vaal University of Technology to form an advisory committee regarding the proposed development of a Master of Engineering in Energy Efficiency 180 Credits on NQF level 9. The advisory committee (board) consisted of academics in engineering and technology, education and applied sciences, industry members and relevant stakeholder. As a committee they advised VUT in developing a rationale and a purpose for the qualification which included specific topics that needs to be integrated within the programme aligned to industry and South African development needs.

A curriculum committee was then formed in the department electronic at VUT to develop the programme. The curriculum team consist of academics across faculties and industry representative. The programme development process is situated within the department of electronics, lead by the programme coordinator with a curriculum

team members. The curriculum team members worked closely with the Programme Accreditation and Curriculum Department (PACD) at VUT to develop the programme according to DHET, CHE and SAQA rules and criteria. The approval of the programme went through different internal processes (Quality approval, faculty board and curriculum committee approval ([Annexure R](#)), and senate ratification ([Annexure S](#)). External processes include DHET approval, CHE accreditation and SAQA registration of programme on VUT's HEQSF aligned PQM.

Steps of approval, accreditation and ratification

- Advisory committee (stakeholders and industry) Internal discussions and inputs
 - Faculty board approval ([Internal](#))
 - Programme Quality approval ([IPQ-Internal](#))
 - Curriculum committee approval ([Internal](#))
 - Senate ratification ([Internal](#))
 - Department of Higher Education approval ([External](#))
 - Council on Higher Education accreditation ([External](#))
 - South Africa Qualifications Authority registration ([External](#))
 - Programme placed on VUT's HEQSF aligned PQM ([External](#))
- How does the higher education institution correlate the competence profile with the sample learning outcomes from the, in their opinion, (most) relevant Subject-Specific Criteria (SSC)?

The SSC within the MEng (Energy Efficiency) was developed with the Energy Training Foundation of South Africa as a guideline.

Please refer to Annexure A for Module specific information (CHE criterion 1 – accreditation)

As per illustration in criterion 1.1 above, these modules in the programme address all ELO's identified by the relevant stakeholders (academics, industry) and the programme design is aligned with the qualification objectives.

- Where do the responsible persons see possible differences to the relevant Subject-Specific Criteria (SSC)? How can they be explained?

No significant differences are detected as indicated by international comparability study (please see attached).

- Annexure I(a) – [benchmarking](#)
- Annexure I (b) – [benchmarking](#)
- For interdisciplinary degree programmes: How does the defined competence profile take into account the specifications of the interdisciplinary character?

Energy Efficiency is a multidisciplinary concept, hence the involvement of more than one department. Currently, it is the departments of Electronic and Power Engineering, but will most likely expand and involve other Engineering disciplines in future.

Criterion 1 – (CHE accreditation)

- Do the defined competence objectives for graduates of the degree programme find the approval of the students and the teaching staff?
Yes. ([Minutes of meetings](#), [FB approval](#), [advisory board approvals](#)) Annexure B, F, K, M, R, S and U - attached)
 - [Programme quality approval](#)
 - [Curriculum design](#)
 - [Faculty board](#)
 - [Curriculum approval](#)
 - [Senate ratification](#)
 - [DHET approval](#)
- Have the learning outcomes of the degree programme been verified within the last few years? If so, for what reasons were adjustments made?
N/A (New programme to be introduced in 2020/2021)
- How does the intended competence profile comply with specific areas of the profession?
Projection looks positive, will be confirmed with implementation.
- Are there any peculiarities within in qualitative or quantitative data/information of the higher education institution with regard to the acceptance of the competence profile on the labour market?
New programme, yet to be established.

Possible Evidence

- Documents/other sources where objectives and learning outcomes are written down and published, e.g. regulations, homepage, diploma supplement, student guides
- Learner guides
- Programme details (Prospectus, website) Master of Engineering in Energy Efficiency 180 Credits on NQF level 9 programme structure, admission requirements, programme credits, and NQF level can be found on different platform

- www.vut.ac.za
- Faculty prospectus
- Recruitment office
- International office
- [Campus map](#)

Please see attached [Annexure A](#)

- Internal records that document the participation of the different stakeholders, e.g. standards, process descriptions, results from questionnaires, records of proceedings
[Doc A](#), [Doc B](#), [Annexure B](#)
- Objectives-Module-Matrix (if subject-specific: based on the Subject-Specific Criteria (SSC) template)
- Module descriptions as they are available to students and the teaching staff
[Annexure A](#)

Criterion 1.2 Name of the degree programme

Master of Engineering in Energy Efficiency, **180 Credits on NQF level 9** - The degree programme name reflects the intended aims and learning outcomes as well as, fundamentally, the main course language. Naming according to the HEQSF standards and criteria (CHE, 2013:21) Attached [Doc F](#), [Annexure A](#)

Guiding Questions

- What are the reasons for the name of the degree programme?
Name of the qualification is aligned with industry (advisory board recommendations) and South African National Development plan 2030 needs
- Does the name of the degree programme correspond with the terminology used by the subject-specific community?
Yes, Master of engineering as described by the [HEQSF](#) energy efficiency is commonly used in renewable engineering and technology sectors
- Have any misunderstandings or wrong expectations by students or by employers occurred which might be due to the name? If so, how was the reaction?
No

Possible Evidence

- Documents where the language of the degree programme is regulated.
DHET approval, CHE accreditation, SAQA registration
- Documents about possible discussions within the higher education institution about the name of the degree programme (records of proceedings etc.)

Criterion 1.3 Curriculum

The structured Master of Engineering in Energy Efficiency 180 Credits on NQF level 9 degree is to educate students qualifying from undergraduate programmes with specialised knowledge and skills in the field of Energy Efficiency to enable them to engage at a high level in personal intellectual growth, gainful economic activity and contributions beneficial to local society and the international society as the qualification will be aligned with European- and Namibian Universities via the EDULINK PEESA project. This programme allows successful candidates to engage at a high level in personal intellectual growth, gainful economic activity and contributions beneficial to local society and the international society which aligns with the mission of VUT which is to produce employable graduates that can impact society. As the programme structure and content was developed in collaboration with international partners Hochschule Wismar, Fachhochschule Flensburg, Ernst Abbe Fachhochschule and Namibia University of Science and Technology and evaluated by the European Engineering programme standards body, modules and research completed by the learner will be of international standard and thus allows the graduate to be sought after in the employable market or to articulate to a relevant doctorate.

The curriculum allows the students to achieve the intended learning outcomes in order to obtain this degree as the curriculum was designed according to HEQSF standards and criteria for approval by DHET, accreditation by CHE and for SAQA registration. This transition thus calls for the development of an interdisciplinary approach and the ability to combine theory practise and community engagement to form an innovative impact driven programme on opportunities that exist. The Meng (EE) focuses on energy efficiency which was presented and welcomed by industry partners ESKOM, Telkom, MTech, TFMC.

The overall objectives and intended learning outcomes for the degree programme are systematically substantiated and updated in its individual modules. It is clear which knowledge, skills and competences students will acquire in each module. See [Annexure A](#) attached

- National and international benchmarking ([Annexure I](#)) has been carried out at a global level. This programme compares favourably with international universities. Inputs were received from the advisory committee/board ([Annexure B](#)) and other stakeholders in the discipline, therefor meeting the needs of industry.
- Students completing this qualification will have an advantage in the discipline of energy efficiency as its could also hold international accreditation.
- VUT students meet the needs of the surrounding community – the Vaal Triangle has many enterprises that employ graduates from VUT. The skills offered by this qualification are sought after in related and relevant disciplines.
- This program specific to the region is to provide skills to better the usage of energy and energy practises due to the fact that the Vaal Triangle area has been identified as industrial polluted environment.

Guiding Questions

- From the viewpoint of the responsible persons and participants of the degree programme, how does the curriculum/ how do the single modules contribute towards achieving the intended competence profile?
- Please see [Attached Doc C](#) and CHE 's [Criterion 3](#) and [Criterion 4](#)

Programme Coordinator				
Name	Position	Qualification(s) held	Gender	Years teaching experience
Prof HCvZ Pienaar	Director (Retired)	DTech	M	44
Prof WJ Bekker	Director	PhD	M	29
Roles and responsibilities of programme coordinator and academic leadership				
Description: Prof HCvZ Pienaar (Christo) started many years ago as a lecturer at the now known Vaal University of Technology (VUT) and has gained 44 years of academic experience in Electrical Engineering. He has obtained Full Professor status at VUT and is currently the director at the Centre for Alternative Energy at VUT. He has obtained numerous qualifications, a National Diploma for Technicians (VUT), National Technical Teachers Diploma (Wits), BTech: Engineering: Electrical (VUT), DTech: Engineering: Electrical (VUT) "Design and Development of a Class E Dielectric Blood Heater" but to mention a few. He was involved in the curriculum development and registration of the National Diploma, National Higher Diploma, MDipTech, BTech, MTech and DTech programmes at VUT during his career but also have a passion for Energy and Energy Efficiency for the past				

twenty years. His research focus is on fuel cells, PV, hydrogen, batteries and alternative energy systems. He has been a study leader for 25 Master's students (completed), Promoter/co-promoter for four doctoral students (completed) and currently study leader and promoter for 12 Master's and Doctoral students. He has also been an external examiner for 25 Master's and Doctoral students at Northwest University, WITS, University of Johannesburg and Tshwane University of Technology. Highlighting his career is the authorship and co-authorship of +- 100 peer reviewed conference papers and twenty articles in accredited journals.
Opportunities provided for professional growth and development in the interest of programme quality
Description: • The unit responsible for the programme makes provision for opportunities for academic staff to enhance their competences and to support their professional growth and development in the interest of programme quality. • Currently, staffs of the department are actively involved in Masters and Doctoral studies with in the University and at other universities within the country. Provision is also made for conferences and workshop attendance to improve the skills of our staff. • The unit (department/school/faculty) responsible for the programme makes adequate provision for the programme in the workload allocation model taking into account the number of academic staff attached to the programme and envisaged student enrolments.

- In the course of matching the intended competence profile with the curriculum has there been any need for adjustments within the last few years? What were the reasons? What was the reaction?
N/A, new program.

Possible Evidence

- Curricular overview/study plan that informs about the student workload for each module in every semester (possibly with location of publication like homepage www.vut.ac.za , student guides , study and examination regulations [Criterion 5](#) and [Criterion 6](#))
Detail under construction and development.

Contact	Distance	Other	Types of Learning activities	% Learning time
x			Face to Face (Contact)	14 %
x			Summative Assessment	6 %
x			Module Assignments	8 %
x			Module Portfolio compilation	2 %
x			Research (Mini Thesis)	35 %
x			Self-study	35 %
				Total 100%

- Module descriptions as they are available to students and the teaching staff
Please see attached [Annexure A](#) and [Criterion 1, www.vut.ac.za](#)
- Possibly relevant results from questionnaires/evaluations
N/A new programme

Criterion 1.4 Admission requirements

The Faculty of Engineering and Technology seeks to widen access to this programme through a number of avenues. Students can be admitted to the Master of Engineering (Energy Efficiency, 180 Credits on NQF level 9) with the minimum admission requirement of a completed relevant 120 credit NQF level 8, which was obtained at a Higher Education Institution. This allows horizontal articulation within the qualification (e.g. from an MSc into the Master of Engineering), and vertical articulation (e.g. from a relevant NQF level 8 to a Master of Engineering Degree – NQF level 9). Intetotal credits of the programme, as well as the rationale, purpose and the structure of the programme design.

The internal approval processes are governed by advisory boards, faculty board approvals, [curriculum committee approvals](#) and [Senate ratification](#). Externally the programme is then approved by the Department of Higher Education, accredited by the Council on Higher Education and registered by the South African Qualifications Authority. If the programme has gone through all the internal and external ([quality](#)) processes, only then can the programme be placed on Vaal University of Technology's Programme and Qualifications Mix ([PQM](#)) before it can be offered by the institution

Relevance of the NQF 8 qualification also provides opportunity for recognition of prior learning ([RPL](#)).

Completion of a Master's Degree meets the minimum entry requirement for admission to a cognate Doctoral Degree, usually in the area of specialisation in the Master's Degree. A qualification may not be awarded for early exit from a Master's Degree.

In terms of admission, the requirements and procedures are binding, transparent and the same for all applicants.

The admission requirements are structured in a way that supports the students in achieving the learning outcomes.

There are clear rules as to how individual admission requirements that have not been fulfilled can be compensated. A lack of previous knowledge must, however, never be compensated at the expense of degree quality. Attached [Criterion 2](#)

Horizontal articulation	<i>MEng in Electrical Engineering at NQF 9 or in a relevant field</i>
Vertical articulation	<i>PhD in Electrical Engineering at NQF 10 or any other relevant field.</i>

Diagonal Articulation	<i>PhD in Electrical Engineering at NQF 10 or PhD in Education</i>
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Guiding Questions

How do the responsible persons recognize that the (formal and subject-specific) admission requirements promote the achievement of the intended competence profiles?

Please see attached [Doc C](#)

- If applicable: What was the reaction if the admission requirements did not fulfil this objective from the point of view of those responsible?
N/A
- Study and examination regulations or specific admission regulations:
 - [Admission policy](#)
 - [Assessment, RPL, CAT policies](#)
 - [HR recruitment policy](#)
 - [Research policy and Ethics](#)
 - [Teaching-module-and-peer-evaluation-policy](#)
 - [VUT-teaching-and-learning-policy](#)
 - [Scholars policy](#)
- Information about the admission requirements for the degree programme on websites, in student guides etc.
 - www.vut.ac.za, Prospectus, Faculty Notice boards, Students recruitment, Learner Guides (under construction)
 - [Admission policy](#)
- Information about the profiles of the applicants and the admitted students
 - Administration and student records

2. The Degree Programme: Structures, Methods & Implementation

Criterion 2.1 Structure and modules

All degree programmes must be divided into modules. Each module is a sum of teaching and learning whose contents are concerted. ([Annexure A](#)) ([Doc F](#))

With its choice of modules, the structure ensures that the learning outcomes can be reached and allows students to define an individual focus and course of study (student mobility, work experience etc.).

The curriculum is structured in a way to allow students to complete the degree without exceeding the regular course duration.

The modules have been adapted to the requirements of the degree programme. They ensure that each module objectives helps to reach both the qualification level and the overall intended learning outcomes.

All working practice intervals or internships are well-integrated into the curriculum, and the higher education institution vouches for their quality in terms of relevance, content and structure.

There are rules for recognising achievements and competences acquired outside the higher education institution. They render the transition between higher education institutions easier and ensure that the learning outcomes are reached at the level aimed for.

Guiding Questions

- How is it ensured that the modules are consistent within themselves, are matched against each other and, where applicable, build upon each other? How do those responsible for the degree programme react if single modules do not fit (anymore) into the general concept of the degree programme?
The program design was developed for modules to be offered within a integrated approach where the offering is informed by the modules as sections to holistic programmes. An integrated assessment approach will be done across all modules.

Name of qualification:	Master of Engineering (Energy Efficiency) 180 credits on NQF level 9
Abbreviation:	MEng EE

Programme Design:

The Masters of Engineering in Energy Efficiency is a structured masters, meaning that the programme consists of a set of modules taken through the first years of the programme, followed by a mini-desertation for the second year of study. The modules in the programme are not interdependent, therefore no prerequisites are needed to move to the second year. However, the assessment of modules are interdisciplinary and content of one module could also be assessed in another module where the necessary skill acquired in a specific module might be needed to do a project in another module.

MODULE STRUCTURE FOR: Master of Engineering (Energy Efficiency)

Module name	CESM	SAQA Credits	NQF Level	Core/ Fundamental/Elective	Sem 1/ Sem 2/ Year
1. Energy Accounting and Economics	080901	20	9	Core	Sem1/Sem2
2. Process Energy Management	082201	25	9	Core	Sem1/Sem2
3. Electrical Systems	080901	20	9	Core	Sem1/Sem2
4. Renewable Energy	080901	25	9	Core	Sem1/Sem2
5. Research Project	080901	90	9	Core	Sem1/Sem2
Total		180			

Please see attached [Annexure A](#) and [Criterion 1 section 1.4](#)

Module alignment with ELO's

- How do those responsible for the degree programme recognize that the modules of a degree programme *viewed all together* support the intended academic level?

	ELO 1 (NQF 9)	ELO 2 (NQF 9)	ELO 3 (NQF 9)	ELO 4 (NQF 9)	ELO 5 (NQF 9)
Modules	Critical understanding & Application	Problem-solving & Design	Evaluation & Analysis (Independent & teamwork)	Professionalism (Ethics)	Research
Energy Accounting and Economics	X	X	X	X	

Process Energy Management	X	X	X	X	
Electrical Systems	X	X	X	X	
Renewable Energy	X	X	X	X	
Research Project		X			X

Please see attached Annexure J (NQF level 9 level descriptors)

- In what way do the offered election options within the degree programme promote the achievement of the intended competence profile?
N/A (New programme)
- To what extent are the students able to implement individual windows of mobility? What problems are there? How was the reaction towards them?
N/A
- Were there any problems with regard to the intended graduation time during the last few years? If yes, what problems? How were they dealt with?
N/A
- Do the possibly necessary working practice intervals of the degree programme fulfil the expectations with regard to the intended learning outcomes? Were there any problems with the organization or the quality of the working practice intervals of the students? If yes, what was done?
N/A
- Which principle does the institution of higher education follow with respect to credits acquired externally by the students?

Possible Evidence

- Objectives-Module-Matrix (*refer to criterion 1.1*)
- Specialist knowledge to enable engagement with and critique of current research or practices; and an advanced scholarship or research in a discipline of Energy Efficiency engineering.
- The ability to evaluate current processes of knowledge production and to choose an appropriate process of enquiry for Energy Efficiency engineering.
- The ability to design, select and apply appropriate and creative methods, techniques, processes or technologies to complex practical and theoretical problems related to Energy Efficiency engineering.

- The ability an understanding of the consequences of any solutions or insights generated within the specialised context of Energy Efficiency engineering.
- An ability to make autonomous ethical decisions which affect knowledge production.
- The ability to conduct a comprehensive review of leading and current research in an area of Energy Efficiency engineering to produce significant insights.
- The ability to demonstrate an ability to use resources to communicate and defend substantial ideas that are the products of research or development in to Energy Efficiency engineering.
- The ability to demonstrate an ability to make interventions within a system, based on an understanding of hierarchical relations within the Energy system
- Module descriptions as are available to students and the teaching staff
Faculty prospectus, www.vut.ac.za, faculty orientation and information sessions

See Annexure A Module descriptions and learning objectives

MODULE:	Energy Accounting and Economics
Module description:	The module will include topics of Energy usage, Energy economics, Energy auditing, Energy rates and electrical systems management.
MODULE:	Process energy management
Module description:	The module will include topics of Pump systems, Air systems, Boiler fuels, Boiler management, ventilation and air conditioning, Steam systems and waste heat recovery techniques.
MODULE:	Electrical systems
Module description:	The module will include topics of rate structures, energy maintenance systems, automatic controls and web based automation of energy electrical systems.
MODULE:	Renewable energy

Module description:	The module will include topics of wind generation, water energy systems, solar energy systems, thermal energy systems and hydrogen/fuel cell systems. Focus will also be given to distributed generation and economics and technologies surrounding these.
MODULE:	Research Project
Module description:	The module will focus on research in the energy efficiency field with focus relating to topics in modules 1 to 4 and the impact on communities within Southern-Africa.

- Documents where the courses of studies and their organization are regulated
N/A
- Student progression statistics
N/A
- Documents that inform about the effective regulations about (outgoing) mobility, working practice intervals and the recognition of externally acquired credits
N/A
- Possibly statistical data about student (outgoing) mobility and working practice intervals
N/A
- Relevant results from internal questionnaires and evaluations
N/A

Criterion 2.2 Work load and credits (Attached Criterion 2, Criterion 3, Criterion 4 and 5)

The estimated time budgets are realistic enough to enable students to complete the degree without exceeding the regular course duration. Structure-related peaks in the work load have been avoided.

A credit point system oriented on the amount of work required from students has been devised⁵. The work load comprises both attendance-based learning and self-study. This includes all compulsory elements of the degree.

General formula used to calculate workload and credits

Workload and credits per module= 1 credit =10 notional hours

⁵ Within the European Higher Education Area, the ECTS Users' Guide is the expected basis for calculating credits.

28 (weeks teaching per annum x 2 (1hour face to face lecture and or consultation per week)

- 2 x 3 Hour (summative assessment) = 6
- 6 x 1 Hour (formative assessments-group presentations, class assignments etc) = 6
- = $28 \times 2 + 6 + 6 = 70$ hours (face to face, consultation, assessments etc) Therefore if a module has 20 credits it means 200 notional hours are needed to meet the learning objectives, outcomes and assessment to complete the module successfully. The example used of a 20 credit module, the student will have (200 notional hours - 70 contact hours) = 130 hour to complete the module (selfstudy, projects, class preparation etc)

Feedback from students (via surveys):

Formal and Informal via one-on-one discussions, group discussions, consultations as well as project discussions and report feedback.

Guiding Questions

- **On what basis (of calculation) are credit points allocated to single modules?**
 1. On the content that needs to be taught
 2. Time needed for students to complete tasks
 3. Time needed for assessments
 4. Time needed for students to master the intended learning outcomes of the modules
 5. Time needed for students to reach the learning objectives
- **How do those responsible for the degree programme and other stakeholders - including the students - rate the student workload? What problems do occur? What is done to solve them?**
Via student surveys, however, the program is offered for the first time in 2020.
- **Are all mandatory parts of the degree programme (including working practice intervals) awarded with credits? If not, why?**
YES

Possible Evidence

- **Module descriptions as are available to students and the teaching staff** ([Annexure A](#), [Criterion 1](#), [Criterion 2](#))
- **Documents where the courses of studies and their organization are regulated**
Department of Higher Education, Council on Higher Education and the South African Quality Authority.
- **Student progression statistics.**

Twenty one (21) students enrolled.

- **Documents that regulate the awarding of credit points for the whole higher education institution/ the degree programme**
([HEQSF](#))
- **A conversion formula/ table if no ECTS-credits are awarded originally**
([RPL and CAT Policy](#))
- **Relevant results from internal surveys and evaluations – possibly statistical data about the student workload**
First time offering.

Criterion 2.3 Teaching methodology

The teaching methods and instruments used support the students in achieving the learning outcomes.

The degree programme is designed to be well-balanced between attendance-based learning and self-study.

Familiarising the students with independent academic research and writing plays a vital role in the programme.

Guiding Questions

- How do the teaching staff and those responsible for the degree programme recognize that didactical instruments and methods promote the achievement of the intended learning outcomes of the degree programme?
[Annexure A \(Section 1.4\)](#), [Criterion 2](#), [Criterion 5](#), [Criterion 6](#) and [Criterion 7](#)
- Are all members of the teaching staff able to apply the didactical instruments and methods most ideal in their opinion? If not, why? (Doc C) and [HOD report](#)
- What elements support the independent scientific work of the students?

[Annexure A \(Section 1.4\)](#)

Outcomes of qualification	Mode of delivery	Teaching methods	Materials developed to achieve ELOs
ELO 1 Critical understanding & Application	Contact	Lectures, Case studies, Continues Assessments	Presentations, learner guides, study notes, prescribed

			books, internet articles, professional publications
ELO 2 Problem-solving & Design	Contact	Lectures, Case studies, Continues Assessments	Presentations, learner guides, study notes, prescribed books, internet articles, professional publications
ELO 3 Evaluation & Analysis (Independent & teamwork)	Contact	Lectures, Case studies, Continues Assessments	Presentations, learner guides, study notes, prescribed books, internet articles, professional publications
ELO 4 Professionalism (Ethics))	Contact	Lectures, Case studies, Continues Assessments	Presentations, learner guides, study notes, prescribed books, internet articles, professional publications
ELO 5 Research	Contact	Lectures, Case studies, Continues Assessments	Presentations, learner guides, study notes, prescribed books, internet articles, professional publications

Please see Annexure A

Possible Evidence

- Documents out of the daily use of the higher education institution that make apparent the existing didactical concept
- Module descriptions as are available to students and the teaching staff (Annexure A)
- Relevant results from internal surveys and evaluations
First time offering.

Criterion 2.4 Support and assistance

There are resources available to provide individual assistance, advice and support for all students. (Criterion 2, Criterion 5)

The allocated advice and guidance (both technical and general) on offer assist the students in achieving the learning outcomes and in completing the course within the scheduled time.

Guiding Questions

- Which of the existing advice and support on offer for students are deemed by those involved in the degree programme – including students – to be the most effective with respect to the academic success?
 - Research workshops
 - Conference/workshop attendances
 - Guest lectures
- What advice and support on offer for students are missed by the stakeholders including the students? Why are they not put into practice? Criterion 5

Possible Evidence

- Documents out of the daily use of the higher education institution that make apparent the existing advice and support concept
- Relevant results from internal surveys and evaluations (also peculiarities with respect to the effect of possibly existing measures to avoid unequal treatment in the higher education institution)
First time offering

3. Exams: System, Concept & Organisation

Criterion 3 Exams: System, concept and organisation

Exams⁶ are devised to individually measure to which extent students have reached the learning outcomes defined. Exams are structured to cover all of the intended learning outcomes (knowledge, skills and competences). Exams are module-related and offer students continuous feedback on their progress in developing competences.

The degree programme comprises a thesis/dissertation or final project which ensures that students work on a set task independently and at the level aimed for.

For each module, a form of assessment (including suitable alternatives, if any) has been defined. There are mechanisms in place which ensure that all students learn the details of what is required in order to pass the module (pre-examination elements, assignments etc.) no later than at the start of the module. Rules have been defined for re-sits, disability compensation measures, illness and other mitigating circumstances etc.

The number and distribution of the exams ensure that both the exam load and preparation times are adequate. All exams are organised in a way which avoids delays to student progression caused by deadlines, exam correction times, re-sits etc.

All exams are marked using transparent criteria. There are mechanisms in place which ensure that exams marked by different examiners are comparable. The higher education institution vouches for the quality in terms of relevance, content and structure of all student assignments completed outside the institution.

- Assessment of modules in the Master of Engineering (Energy Efficiency), 180 Credits on NQF level 9 will be in accordance with the [assessment policy](#) of the institution. The learning guides for the modules contain the module outcomes and assessment criteria which must be satisfied in order to pass. ([Criterion 5](#))
- The lecturer will make use of summative, formal and informal assessment strategies to develop the students' competence in this programme. More emphasis is placed on application of knowledge at this level. Informal assessments typically include discussions, quizzes, feedback sessions, and peer assessments, among others. Formal assessments include portfolio of evidence, presentations, and assignments. Summative assessments will typically include a final portfolio of evidence and a mini dissertation. All assessments are at the appropriate NQF level (in this case, NQF level 9).

⁶ Exams are all methods of ascertaining to which extent the learning outcomes have been reached as well as any pre-examination elements, assignments etc., as set forth by the higher education institution in question.

- The research project is assessed differently. Students will be marked on their research proposal (oral and written) and on the final report (oral and written). An external moderator is needed for the final research reports.
- External moderators will be used to verify the standard of the summative assessments. These moderators will have the necessary qualifications, as outlined in the institution's assessment policy, and are appointed on a contract basis.

Refer to [Annexure A](#) and [Criterion 6](#) and [Criterion 9](#)

Students will independently identify research problems based on the content of the modules in the programme. These problems will be investigated by conducting a literature review and consulting previous studies conducted on similar problems. Students are then required to address the problem by collecting, interpreting and reporting data, simulation, design, analysis, verification and validation of a possible solution thus culminating in a research report.

The purpose of the research module in Energy Efficiency, (90 credits on NQF level 9) is to gain specialised experience in specific problem solving through conducting research. Students will have to design the research study, collect, analyse and verify data, submit a dissertation of limited scope as well as disseminate research findings to an audience.

Guiding Questions

- Which of the used forms of examination are considered by the teaching staff and the people responsible for the degree programme to be particularly suited to verify the achieved learning outcomes?
- Which consequences for the feasibility of the degree programme do the existing regulations on possible re-sits, disability compensation for handicapped students, absence because of illness etc., have?

[Doc A](#) and [B](#)

- Were there any cases where the specific exam management (e.g. date of exam, correction time) had negative effects on the study progress? If yes, what conclusions were drawn? N/A
- How are the assessment criteria made transparent for the students and teaching staff?
- [Annexure A](#) (Section 1.4)

- What experiences have been made with student assignments completed outside the institution with respect to quality assurance and level of compliance with the quality expectations?
External moderators

Possible Evidence

- Module descriptions as are available to students and the teaching staff, also for the final paper
Available online ([https://vut.blackboard.com/webapps/blackboard/execute/modulepage/view?course_id= 34575_1&cmp_tab_id= 86458_1&edit-Mode=true&mode=cpview](https://vut.blackboard.com/webapps/blackboard/execute/modulepage/view?course_id=34575_1&cmp_tab_id=86458_1&edit-Mode=true&mode=cpview))
- Regulations for exams
- Relevant results from internal surveys and evaluations with respect to exam management and the learning outcome orientation of the exams
- Examples of exam schedules (including the date of the exams)
- Statistical data about the progress of studies, e.g. average grade, failure rate, amount of re-sits

On-site-visit: we ask for the presentation of a meaningful selection of exams/transcripts/projects and other work of students from modules and from final papers/ final projects.

4. Resources

Criterion 4.1 Staff

The composition, scientific orientation and qualification of the teaching staff team are suitable for sustaining the degree.

There are sufficient staff resources available for:

- providing assistance and advice to students (Doc C, Criterion 3, 4, 5 6 and 9)
- administrative tasks

The research and development activities carried out by the teaching staff are in line with and support the level of academic qualification aimed at.

Guiding Questions

- In which way do those responsible for the degree programme recognize that the number and the academic qualification of the teaching staff are sufficient for teaching and supervision? [Doc C](#) and [Criterion 3](#) and [4](#)
- How satisfied are those involved in the degree programme with the amount of resources available for teaching, supervision and administration?
Annexure F and T, sufficient qualified staff and research resources.
- How do those responsible for the degree programme react on occurring problems and bottlenecks?
N/A, first time offering
- What constitutes the quality of possibly employed visiting lecturers and how is this measured?
Guest lecturers will be experts from industry, as well as academics from all aspects related to energy efficiency.
- In what way do the research and development activities carried out by the teaching staff support the development of the degree programme?
Research project as part of degree program facilitated and supervised by staff involved.

Possible Evidence

- Description of the teaching staff (e.g. CVs)
See Attached CV's ([Staff abbreviated CV's](#), [Annexure F](#), [Doc C](#))
- Document out the daily use of the higher education institution that demonstrates the sufficient amount of teaching resources
- Student numbers
- First enrolments for 2020/2021 will be a minimum of one and a maximum of 20.

(Short) Description of research activities related to the degree programme

The Research Project module consists of research methodology and methods, writing of the proposal and writing of the mini dissertation and evaluated by an internal examiner and moderated by an external moderator which are approved by the Faculty of Engineering and Technology's Faculty board and by VUT Senate. The research proposals are then submitted to the Departmental Research and Innovation committee (DRIC), together with proof of language editing as well as a Turnitin reports which validates non plagiarism.

Responsibilities of the supervisor

- Provides guidance for the student's research project in terms of the topic, the design and scope of the project, the relevant literature and information sources, research methods and techniques and methods of data analysis.
- Ensures that the study as put forward in the research proposal is within his/her field of expertise.
- Ensures that s/he is accessible to the student
- Meets regularly with the student and is up to date on the latest work in his/her area of expertise.
- Expects written work as jointly agreed, and will return that work with constructive criticism within a timeframe (a suggestion of two to four weeks) jointly agreed at the outset of the research.
- Provides advice that can help the student improve his/her writing. This may include referrals for language training and academic writing. The supervisor will provide guidance on technical aspects of writing such as referencing as well as on discipline specific requirements.
- Has a duty to refuse to allow the submission of sub-standard work for examination, regardless of the circumstances. If the student chooses to submit without consent of the supervisor, then this should be clearly recorded and the appropriate procedures followed.
- Discusses the ownership of research conducted by the student in accordance with the university guidelines and rules on intellectual property.
- Ensures that the research is conducted in accordance with the university's policy on plagiarism.

Responsibilities of the student

- Ensures that the mini dissertation (Research Module) provided is original work, albeit achieved with the benefit of advice and guidance from the supervisor.
- Works independently under the guidance of the supervisor. This includes reading widely to ensure that the literature pertinent to his/her chosen topic has been identified and consulted. The student is obliged to make appointments to see the supervisor and will arrange meeting times well in advance.
- Submits written work for discussion with the supervisor well in advance of a scheduled meeting. The kind and frequency of written work should be agreed with the supervisor at the outset of the research.
- Submits written work that is relatively free of basic spelling mistakes, incorrect punctuation and grammatical errors.
- Heeds the advice given by the supervisor and engages in discussion around suggestions made. Ultimately, the student has to take responsibility for the quality and presentation of the work.
- Should strive, within reasonable bounds, to maintain focus on his/her research area and to work in the agreed time schedule

- Agrees to honour agreements about ownership of the research and in accordance with the university's guidelines and rules in relation to co-authorship, copyright and intellectual property.
- Ensures that the work contains no instances of plagiarism, that all citations are properly referenced and that the list of references is accurate, complete and consistent.
- Does not place the supervisor under pressure to submit work for examination until the supervisor is satisfied that it has reached an acceptable level of quality.

The appointment of supervisors will be determined by the research niche area in the field of energy efficiency, such that only staff members who are experts in that research area will be appointed as supervisors. Appointed supervisors can be internal or external. They can be appointed on a contract basis, in line with the policies of the institution.

Criterion 4.2 Staff development

There are offers and support mechanisms available for teaching staff who wish to further develop their professional and teaching skills.

Guiding Questions

Who is responsible for the academic and didactic development of the teaching staff?

Staff members are encouraged to improve their current qualifications and attend research methodology, supervision and statistical analysis workshops. A Faculty Stimulation Fund and research budget is available to fund members for workshops as well

A recent programme introduced was "Know your Researcher". Established researchers delivered talks to staff and students to introduce their area of expertise. In June 2016 a number of professors delivered their inaugural lectures.

The Research Directorate at VUT has undertaken to present/arrange regular workshops to encourage more staff to participate in research. This includes regular visits from NRF representatives and visiting researchers. Other significant capacity building programmes offered include:

The Global Legacy Trust: a program that provides writing guidance for Masters, Doctoral staff and students in the beginning stages of their proposal writing. It is made up of three modules, each taking place over five full days. The first module consists of an overview and introduction on proposal topics and the ethics around research. The second module deals with qualitative and quantitative methods participants will choose to use regarding their

research topics and projects as a whole. The third module involves the collation of all written information and presentation of the work.

Staff Training workshops via the Centre for Staff Development (CSD).

External discipline specific workshops and courses ex. Certified Energy Manager (CEM) and Certified Energy Practitioner (CEP)

How do the responsible persons recognize that professional development measures are wanted or necessary?

Possible Evidence

- Description of didactical training opportunities (possibly link to the webpage) and of measures that support the teaching staff in its use
- Statistical data about further development opportunities, e.g. research semesters, visiting professorships, seminars, conferences, workshops

Criterion 4.3 Funds and equipment

The available funds and equipment form a sound and solid basis for the degree programme including:

- guaranteed funds
- sufficient and high-quality infrastructure
- solid, binding rules for all internal and external cooperations.

Budget: Centre for Alternative Energy Annual Research budget (capital and operational)

Income

Telkom	R 400 000
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Eskom	R 100 000
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VUT stimulation fund Research Directorate	R 40 000
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VUT Post graduate bursaries	R 100 000
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Department Electronic Engineering

VUT stimulation fund Research Directorate	R 60 000
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Department Power Engineering

VUT stimulation fund Research Directorate R 60 000

Department Process Control & Computer systems

VUT stimulation fund Research Directorate R 60 000

Attached [Criterion 4](#) and [Criterion 9](#)

Guiding Questions

- How satisfied are the participants of the degree programme with its equipment and facilities?
First offering, no serious problems as yet.
- How do the people responsible for the degree programme react to bottlenecks in equipment and facilities?
First offering
- Do the higher education institutions internal and external cooperations work successfully from the point of view of those responsible?
First offering

Possible Evidence

- Cooperation agreements, regulations for internal and external cooperations
- Documents out the daily use of the higher education institution that describe the equipment and facilities, e.g. laboratory handbooks, inventory lists, financial plans

Annexure F

On-site-visit: Visit of facilities relevant for the degree programme

5. Transparency and Documentation

Criterion 5.1 Module descriptions

The module descriptions are accessible to all students and teaching staff and contain the following:

- module identification code ([SAQA](#))
- person(s) responsible for each module ([Doc C](#) and [Criterion 3](#) and [4](#))
- teaching method(s) and work load ([Criterion 5](#))
- credit points ([Annexure A](#))
- intended learning outcomes ([Annexure A](#))

- module content([Annexure A](#))
- planned use/applicability
- admission and examination requirements ([Doc F](#), [Admission Policy](#) and [Criterion 1.3](#))
- form(s) of assessment and details explaining how the module mark is calculated ([Criterion 6](#))
- recommended literature ([Annexure T](#))
- date of last amendment made 2019

Guiding Questions

n/a

Possible Evidence

- Module description as they are available to students and the teaching staff

[Annexure A](#), [Doc C](#), www.vut.ac.za and faculty prospectus

*Currently enrolled and proceeding to complete qualification

The recruitment and employment of staff follows relevant legislation and appropriate administrative procedures, including redress and equity considerations ([HR Policy](#))

Criterion 5.2 Diploma and Diploma Supplement

Shortly after graduation, a diploma or degree certificate is issued together with a Diploma Supplement printed in English.

These documents provide information on the student's qualifications profile and individual performance as well as the classification of the degree programme with regard to its applicable education system.

The individual modules and the grading procedure on which the final mark is based are explained in a way which is clear for third parties. In addition to the final mark, statistical data as set forth in the ECTS User's Guide is included to allow readers to categorise the individual result/degree.

Guiding Questions

- Have any problems occurred with awarding the graduation certificates and Diploma Supplements to the students? If yes, what was the reaction?
N/A first time offering of programme 2020/2021

Possible Evidence

- Sample graduation certificate for each degree programme
- Sample Diploma Supplement for each degree programme
- Sample transcript of records for each degree programme

Criterion 5.3 Relevant rules

The rights and duties of both the higher education institution and students are clearly defined and binding (guidelines, statutes etc.). All relevant course-related information is available in the language of the degree programme and accessible for anyone involved.

www.SAQA.co.za; www.DHET.co.za, www.CHE.co.za, www.vut.ac.za

Guiding Questions

- How is it ensured that domestic and foreign students know their rights and duties?
 - Admission policy
 - CAT, RPL, Assessment Policy
 - Prospectus (Admission requirements, programme details)
 - International office support and helpdesk
 - www.vut.ac.za
- Who is responsible for taking decisions about which documents?
 - Admissions: Faculty, HOD, Registrar
 - Fees: Finance
 - International students: Registrar, International office
 - Research: Research Directorate

Possible Evidence

- Presentation of all relevant regulations with respect to study progress, access, graduation, exams, quality assurance etc., together with information about the level of the binding character
- Link to the place, where the documents are published, e.g. web pages
www.vut.ac.za

6. Quality Management: Quality Assessment and Development

Criterion 6 Quality management: quality assessment and development

The programme is subject to regular internal quality assessment procedures aiming at continuous improvement. All responsibilities and mechanisms defined for the purposes of continued development are binding.

Students and other stakeholders take part in the quality assurance process. The outcomes and all measures derived are made known to anyone involved. All methods employed and data analysed are suitable for the purpose and used to continue improving the degree programme, especially with a view to identifying and resolving weaknesses. To this end, the information they provide includes:

- whether the intended learning outcomes required to obtain the degree have been achieved;
- the academic feasibility of the degree programme;
- student mobility (abroad, where applicable);
- how the qualifications profile is accepted on the labour market;
- the effect of measures in use to avoid unequal treatment at the higher education institution (if any).

Guiding Questions

- What measures for the improvement of the quality of the degree programmes have been taken within the last few years?
New programme
 - Higher Education Qualification Sub-framework (HEQSF) (CHE, 2013)
 - Credit Accumulation and Transfer, Recognition of Prior-learning, Assessment, Admissions policies
 - CHE rules and regulations
 - SAQA rules and regulations
- Which elements of the internal quality assessment have been especially useful for the continuous improvement of the degree programmes?

Document A, B, D and I Annexure B, F, H, J, R, S, U,X,Y

- To what extent is the aspect of “learning outcome orientation” taken into consideration in the conception and the practical use of the instruments of quality assurance of a degree programme?

Document I and Doc E

- How do the students evaluate the internal quality assessment and development of their degree programmes with respect to Dr Hans Brits
 - their participation?
 - the consequences on their studies?
- How do the teaching staff and executive level evaluate the internal quality assessment and development of their degree programmes with respect to
 - their participation?
 - the support at solving problems and the improvement of teaching?

The teaching and learning philosophy of the Vaal University of Technology (VUT) takes a point of departure from the Higher Education Council (HEC) legislation aligned with the criteria and requirement of the Higher Education Qualifications Forum (HEQsF) as well as the vision, mission and values of VUT. VUT acknowledges Outcomes-based Education (OBE) as the educational approach of choice. Outcomes-based education is a learner-centred, result-oriented educational approach based on the assumption that students are capable of realizing their potential if what students have to learn is clearly defined and monitored based on the demonstration of skills and competencies. The teaching and learning model, aligned with the PQM is developed in order to produce employable graduates who can make an impact in society by, among other things, creating a scholarly environment that is conducive for knowledge creation, learning and innovation. The core of lecturing within the VUT focuses on applied learning that involves the application of concepts through engaging with communities. Assessment at VUT actively involves higher order-cognitive learning skills (as defined by Bloom’s taxonomy), social constructivism and pro-bono consultancy work with local organizations (Vaal Triangle Hub) facing market related issues. This creative engagement serves to unlock multiple positive outcomes: Students become keener enquirers; they work harder to solve practical problems and walk away with knowledge that stays with them long after class has ended. They learn not only from the lecturers, but also from each other and from their present learning environment. They are encouraged to engage in independent primary and secondary research which also helps them to develop additional skills necessary to succeed in their careers.

Vibrant, supportive and most importantly fun spaces for student learning are offered. Active engagement, open and honest communication, critical and supportive feedback on performance and extensive use of technology in supporting this environment (through the use of MyVUT (Sakai & Blackboard), and communication avenues that stretch beyond the classroom (including Facebook and email) are also emphasised. Constructive and prompt feedback through peer evaluations and self-assessment are strongly encouraged so that the students are able to provide feedback on each other's performance. Moreover, all the students receive comprehensive feedback from the lecturers; on their assessment tasks, projects and presentations. This makes a real difference to the students' perceptions of their learning experience.

VUT upholds the notion that all lecturers are 'facilitators' with the students being 'active contributors'. The purpose of instruction is not only in obtaining an elusive Pass Mark, but also in gaining an education and an ability to apply the concepts in the real world instead (applied competencies).

Orientation of new students: This takes place in semester 1, at the beginning of the new academic year, or if requested in the beginning of the 2nd semester for newly registered students. This orientation is aimed at helping new students to familiarize themselves with and to adjust to the new environment. During this orientation various issues that affect new students are discussed and information and advice is disseminated.

Psychometric testing and career guidance: This testing looks at the three areas, i.e. aptitude or potential, interest and personality, as these three components forms the basis on which career decisions are made. The career guidance process thus aims to assist high school learners, students, and staff and community members with regard to choosing or changing careers.

Academic and individual counselling: Students and staff members are seen individually to deal with study related problems and personal issues which may be causing undue stress and other psychological indicators, and which may impact negatively on academic and work performance, e.g. relationship problems, financial problems, depression and anxiety, bereavement, trauma, substance abuse or dependence, etc.

Group counselling: This type of counselling is sometimes utilized in cases where people with common or similar problems, as the group context allows for group members to share and gain from each other's experiences, e.g. in the case of trauma debriefing.

Academic and life skills: Workshops are offered to students aiming to assist them in adjusting to university life, dealing with stress, managing their time better, coping with peer pressure, assisting with job hunting, study skills, and the like.

Awareness campaigns: The department also embarks on awareness campaigns from time to time, in order to make students aware of mental health issues and services, e.g. depression and anxiety, alcohol and substance abuse, violence against women, positive self-esteem and self-confidence, etc.

Profiling: The department has started profiling students for two faculties in 2009, and is hoping to profile all first year students in future, thereby assisting the university to understand the profile of its students and to respond appropriately by offering the necessary skills and support.

National benchmarking testing (NBT): The purpose of the NBT testing is to assess entry-level academic and qualitative literacy and mathematics proficiency of first year students. The academic and quantitative literacy test (AQL) targets student's capacity to engage successfully with the demand of academic study in the medium of instruction and the capacity to engage successfully with the demand of academic study in the medium of instruction and the ability to manage situations or solve problems in a real context that is relevant to higher education study, using basic quantitative information that may be presented verbally, graphically, in tabular or symbolic form. The mathematics test targets student's ability related to mathematical concepts formally regarded as part of the secondary school curriculum, and test in the national senior certificate (NSC) any other relevant qualification on NQF level 4.

Institutional support mechanism: a learning management system *eVutela* (Blackboard).

Learning communities: The Learning Development unit is responsible for enhancing students study and learning practices through establishing Learning Communities, one-to-one and group workshops and subject specific sessions on request from lecturers.

Tutor development provide an additional learning opportunity for students and students should consult with their lecturers regarding the time and venue for tutorials.

Maths Centre: Maths centre is offering undergraduate and postgraduate students further development of their mathematical competencies and Statistics students' mathematical literacy support.

Writing Lab: The writing lab provides free academic writing support to all registered VUT students. The Vaal University of Technology (VUT) Writing Lab

The VUT Writing Lab promotes the University's mission of producing a scholarly environment that is conducive to learning and innovation. It also aims to promote independent academic writing skills among students.

The writing lab is where students of all disciplines and writing abilities can discuss their writing with a trained writing consultant. Methods which promote dialogue and inquiry, and approaches such as one-to-one and small group consultation will be used. It will help students become more independent and confident in their own writing. The purpose of the lab is to help students become better writers the lab instructors help students to become better proof-readers and editors of their own work.

The writing lab supports students in:

- Writing:
 - Proposals, Technical Reports, Thesis/Dissertation
- Referencing
- General writing skills

Possible Evidence

- Internal regulations about quality management (quality assurance regulation etc.)
- Sample information material about the quality management and its results which the higher education institution regularly uses for its internal and external communication (e.g. link to specific web pages, reports, flyer)
- Quantitative and qualitative statistical data from evaluations, study progression statistics, number of graduates, and their distribution etc.