



# ENSURING THE EXPERTISE TO GROW SOUTH AFRICA

**Programme Self-study Documentation Requirements  
for Accreditation**

**E-12-REQ-P**

**REVISION No. 4: 15 October 2020**

ENGINEERING COUNCIL OF SOUTH AFRICA  
Tel: 011 6079500 | Fax: 011 6229295  
Email: [engineer@ecsa.co.za](mailto:engineer@ecsa.co.za) | Website: [www.ecsa.co.za](http://www.ecsa.co.za)



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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 2 of 23

## TABLE OF CONTENTS

DEFINITIONS .....	3
ABBREVIATIONS .....	6
BACKGROUND .....	8
1. POLICY STATEMENT .....	8
2. PURPOSE OF THIS DOCUMENT .....	9
3. RELATED DOCUMENTS .....	9
4. ROLES AND RESPONSIBILITIES.....	9
5. RESPONSIBILITY .....	10
6. AVAILABILITY OF DOCUMENTATION .....	10
7. SELF-STUDY DOCUMENTATION REQUIREMENTS OF PROGRAMME.....	10
8. ACCREDITATION DOCUMENTATION .....	11
8.1 General.....	11
8.2 Submission by the Dean .....	12
9. ACCREDITATION DOCUMENTATION: SELF-STUDY SUBMISSION FOR EACH PROGRAMME .....	13
9.1 Programme identification and responsibility .....	14
9.2 Follow-up on previous Accreditation .....	14
9.3 Programme and course information .....	15
9.4 Assessment of graduate attributes and assessment system .....	16
9.5 Teaching and learning and assessment process .....	17
9.6 Sustainability factors for the programme .....	19
10. ADDITIONAL DOCUMENTATION REQUIRED FOR ACCREDITATION .....	20
REVISION HISTORY .....	22

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## DEFINITIONS

**Accredited programme:** A programme evaluated and recognised by ECSA as meeting stated criteria.

**Accreditation criteria:** Statements of requirements that must be satisfied by a programme to receive accreditation.

**Assessment:** The process of determining the capability or competence of an individual by evaluating performances against standards.

**Assessment criteria:** A set of measurable performance requirements, which indicate that a person meets a specified outcome at the required level.

**Continuous quality improvement:** A process based on the concept that improvement of a process is always possible subject to on-going assessment of the process and measures to maintain and improve quality.

**Course:** A building block of a programme with defined prerequisites, content and learning objectives with assessment, which if completed successfully provides credit towards a qualification.

**Credit:** A measure of the volume of learning attached to a course or module calculated according to the procedure defined in the relevant standard for the type of programme; a level may be associated with a number of credits.

**Dublin Accord:** An agreement for the mutual agreement of engineering programmes that provide the educational foundation for professional engineering technicians.

**Education Committee:** The committee established by Council to address all education matters.

**Educational objective:** A statement of the intended achievement that graduates of a programme must accomplish, often with emphasis on the early years after graduation.

**Engineering education programme:** An educational programme that aims to satisfy criteria prescribed by ECSA.

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 4 of 23

**Engineering sciences:** These sciences have roots in the mathematical and physical sciences and where applicable, in other natural sciences; they extend knowledge and develop models and methods in order to lead to engineering applications and to solve engineering problems.

**Evaluation:** Determination of the compliance of a result with prescribed criteria based on documentation, inspection and the application of judgement supported by reasoning.

**Exit Level course:** A course that is offered for the last time in the engineering programme and generally is used to assess graduates' attributes.

**External moderation:** A moderation process in which the moderators are not in the employ of the provider, they make no input into the programme and they have no prior contact with the students.

**Final Accreditation:** Accreditation of a programme that was given notification of termination of accreditation by the Education Committee after the previous interim accreditation.

**Graduate Attribute:** A statement of the learning outcomes that a student must demonstrate at the exit-level to qualify for an award of a qualification.

**International Engineering Alliance (IEA):** A global organisation, which comprises members from 41 jurisdictions within 29 countries, across 7 international agreements. These international agreements govern the recognition of engineering educational qualifications and professional competence.

**Interim Accreditation:** Accreditation held at a time within the regular cycle stated by the Education Committee in the decision on the findings of the previous regular accreditation.

**Knowledge area:** A classification of curriculum content into defined types.

**Knowledge profile:** A description of a graduate's knowledge in terms of the type and balance of knowledge in defined areas.

**Level:** A measure of learning demands regarding types of problems, knowledge required, skills and responsibility, which are expressed in terms of level descriptors.

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**Moderation:** The process of ensuring that assessment of an individual meets the required standard and is consistent, objective and fair.

**Module:** Synonymous with *course*.

**Sub-discipline:** Synonymous with *engineering speciality*.

**Sydney Accord:** An agreement for the mutual recognition of engineering programmes that provide the educational foundation for professional engineering technologists.

**Washington Accord:** An agreement for the mutual recognition of engineering programmes that provide the educational foundation for professional engineers.

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## ABBREVIATIONS

<b>AC</b>	Accreditation Committee
<b>Adv Cert</b>	Advanced Certificate
<b>Adv Cert (EP)</b>	Advanced Certificate in Engineering Practice
<b>Adv Dip</b>	Advanced Diploma
<b>Adv Dip Eng</b>	Advanced Diploma in Engineering
<b>BEng</b>	Bachelor of Engineering
<b>BSc (Eng)</b>	Bachelor of Science in Engineering
<b>BEng Tech</b>	Bachelor of Engineering Technology
<b>BEng Tech (Hons)</b>	Bachelor of Engineering Technology Honours
<b>BTech</b>	Bachelor of Technology
<b>CHE</b>	Council on Higher Education
<b>DA</b>	Dublin Accord
<b>Dip</b>	Diploma
<b>Dip Eng</b>	Diploma in Engineering
<b>Dip Eng Tech</b>	Diploma in Engineering Technology
<b>EC</b>	Education Committee
<b>ECSA</b>	Engineering Council of South Africa
<b>GA</b>	Graduate Attribute
<b>HCert</b>	Higher Certificate
<b>HEQC</b>	Higher Education Quality Committee
<b>HEQSF</b>	Higher Education Qualifications Sub-Framework
<b>IEA</b>	International Engineering Alliance
<b>LMS</b>	Learning Management System
<b>MEng</b>	Master of Engineering
<b>ND</b>	National Diploma
<b>NQF</b>	National Qualifications Framework
<b>PGDip Eng Tech</b>	Post Graduate Diploma in Engineering Technology

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 7 of 23

<b>RSPC</b>	Research, Policy and Standards Committee
<b>SA</b>	Sydney Accord
<b>SADC</b>	Southern African Development Community
<b>SAFEO</b>	Southern African Federation of Engineering Organisations
<b>SAQA</b>	South African Qualifications Authority
<b>WA</b>	Washington Accord

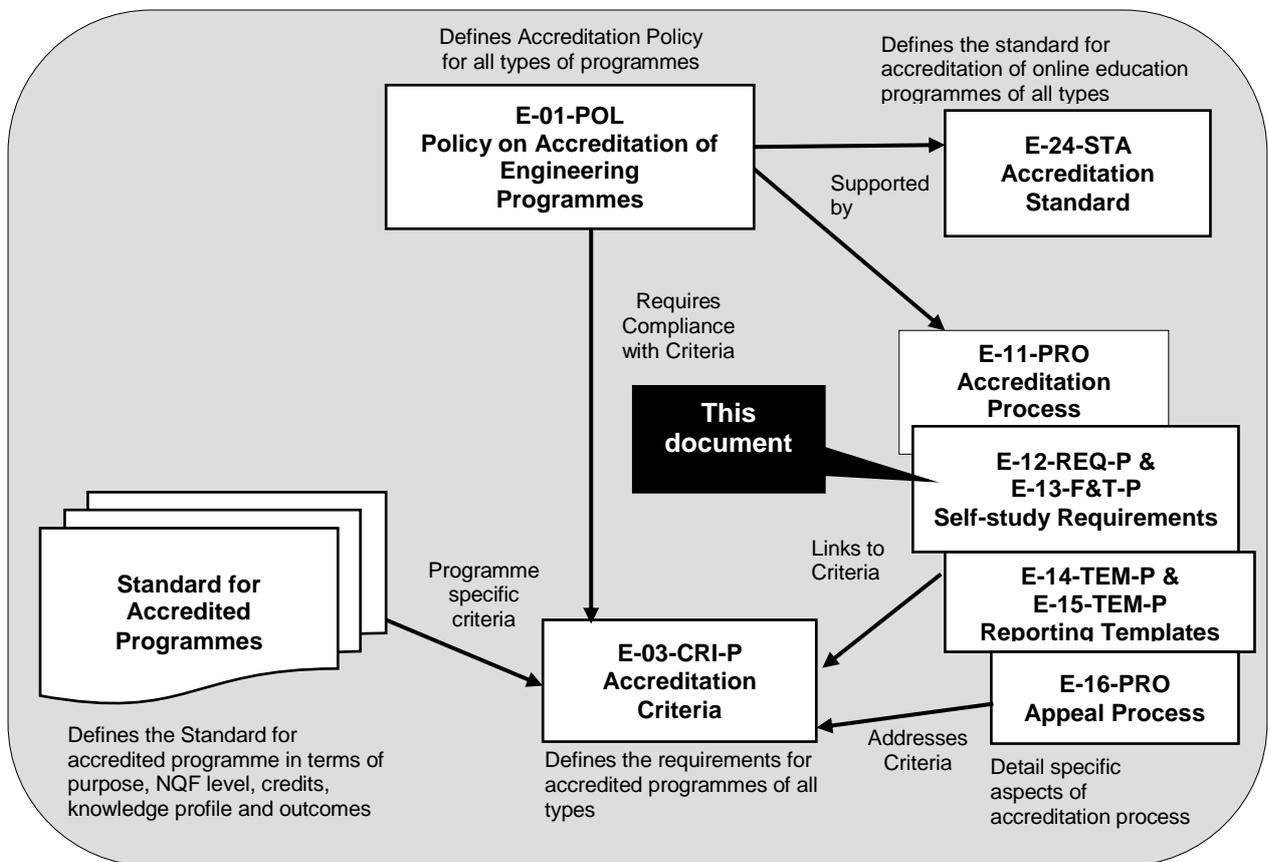
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## BACKGROUND

The illustration below defines the documents regarding the system of the Engineering Council of South Africa (ECSA) for the accreditation of programmes that meet the educational requirements of the professional categories. The illustration also locates the current document.



**Figure 1: Documents defining the ECSA Requirements for Accreditation**

## 1. POLICY STATEMENT

ECSA develops and operates a quality assurance system that leads to the accreditation of various engineering education programmes. The standards, criteria, policies and procedures that define the accreditation system are defined in this set of documents.

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 9 of 23

The accreditation system assures the public, students, employers, funders and other stakeholders that firstly, the programme fulfils its key purpose of providing the graduate with the educational foundation for engineering in a stated role at the professional level; and secondly, that the teaching, learning and assessment processes are effective.

## 2. PURPOSE OF THIS DOCUMENT

This document specifies the documentation regarding the responsibilities, timing, format and required content of a self-study programme that must be submitted by the provider prior to an accreditation. These requirements apply to programmes contemplated in the accreditation criteria defined in document **E-03-CRI-P**.

The notation for various persons and bodies defined in document **E-11-PRO** is used in this document.

## 3. RELATED DOCUMENTS

Refer to document **E-01-POL** for a list of related documents and the Background Figure 1 above defining the ECSA Accreditation System.

## 4. ROLES AND RESPONSIBILITIES

Persons and committees who play key roles and carry important responsibilities in the accreditation process are identified below.

<b>A</b>	Accreditation
<b>APL</b>	Accreditation Panel Leader
<b>ATL</b>	Accreditation Team Leader
<b>EC</b>	Education Committee
<b>CEO</b>	Chief Executive Officer
<b>CH</b>	Chairperson
<b>CR</b>	Consistency Reviewer
<b>Dean</b>	Dean of the Faculty in which the programme(s) is/are run
<b>EM</b>	Education Manager/Regulatory Function Division
<b>Head</b>	Person responsible for the programme within the provider

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 10 of 23

<b>Rap</b>	Rapporteur
<b>TM</b>	Team Member
<b>TR</b>	Trainer

## 5. RESPONSIBILITY

In arranging an accreditation, ECSA deals with a single point of contact in the provider, the Dean of the Faculty of Engineering or an officer with full delegation of authority by the Dean. The Dean is therefore responsible for ensuring that the necessary documentation is submitted to the ECSA prior to the Accreditation. The Dean is required to identify the persons responsible for preparing the documentation regarding the individual self-study programme and coordinating the detailed arrangements for each programme. ECSA's single point of contact is the Education Manager. Closer to the accreditation, other points of contact are as defined in document **E-11-PRO**.

## 6. AVAILABILITY OF DOCUMENTATION

Documentation must reach ECSA's office not later than 6 weeks before the accreditation. ECSA reserves the right to cancel an accreditation if the documentation is not received in time.

Attention is drawn to the requirement stated in section 10 below that documentation must be readily available during the accreditation. Failure to produce all documentation or undue delay may jeopardise a favourable team recommendation.

The Head of the Department is expected to ensure that academic staff have access to the documentation since the team may raise matters regarding the documentation during interviews.

## 7. SELF-STUDY DOCUMENTATION REQUIREMENTS OF PROGRAMME

The following documentation of a self-study programme provides the accreditation team with the information needed to make the evaluation. The documentation consists of four parts:

- (a) Initial information provided by the Dean at the start of planning, as specified in section 7.1 of this document.

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 11 of 23

- (b) Submission by the Dean, as specified in section 8 of this document.
- (c) A self-contained self-study submission for each programme to be evaluated, as specified in section 8 of this document.
- (d) Appendix 1 as specified in section 8.

An electronic submission of the documents identified in items above is required. This is preferably provided on a link or uploaded to an ECSA server by arrangement.

Items b, c and d must be submitted to the ECSA at least 6 weeks prior to the accreditation. (The accreditation policy requires documentation as a prerequisite for an accreditation to take place and provides for cancellation of the accreditation should documentation not be submitted in time.)

### 7.1 Initial information to be submitted

When an accreditation is initiated, the Dean must submit the following information to ECSA for team selection and to determine the teams required, particularly for closely related programmes:

- List of programmes that will be offered or are planned for the period of accreditation
- For each programme:
  - The department responsible for the programme
  - The person responsible for the programme
  - The curriculum showing the courses/modules, whether these are compulsory or elective, the credits allocated and the year/semester in which the programme is to be offered (the format for this information is defined in Programme Structure and Course/Module details Table in document **E-13-F&T-P**)
  - Major curriculum changes in progress or planned
  - Degree of commonality of assessment methodology with other programmes.

## 8. ACCREDITATION DOCUMENTATION

### 8.1 General

An electronic submission of the documents identified in the items above is required. This is preferably provided on a link or uploaded to an ECSA server by arrangement.

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 12 of 23

## 8.2 Submission by the Dean

Prior to each accreditation, the Dean of the faculty is requested to prepare and submit a self-study statement to the ECSA that encompasses the following:

- (a) Strategic objectives of the provider and the faculty that is home to the engineering programmes, together with an assessment of the extent to which the programmes are consistent with institutional objectives. These should be drawn from the faculty's business plan or other approved university documentation. Credits must be calculated according to the procedure specified in document **E-01-POL**.
- (b) The faculty's educational objectives and commitment to outcome-based programme objectives and student assessment.
- (c) The provider and faculty policy and practice for quality assurance, continuous quality improvement of the programme and assessment of students.
- (d) Faculty finances, capital and operating costs both current and for the previous 4 years for staff, operational expenses, equipment, computing and networking, library, travel and research funding. The process for obtaining and allocating funding must be described under the various headings.
- (e) Common facilities to support programmes.
- (f) Description of academic development programmes for students who do not meet normal entry requirements.
- (g) Selection and admission of students in relation to the institution's equity and diversity plans.
- (h) Staff equity and diversity plans in relation to the institution's plans and the level of achievement by department/school.
- (i) Perceived strengths and weaknesses of the faculty, departments and programmes; and any other matters considered relevant.
- (j) High level summary of how exceptional circumstances/ situation, have been dealt with in the Institution to ensure that the programmes have continued to meet the standards i.e. Fees must fall, Covid-19 pandemic, etc.

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 13 of 23

## 9. ACCREDITATION DOCUMENTATION: SELF-STUDY SUBMISSION FOR EACH PROGRAMME

Prior to each accreditation, the Head of Department is required to prepare and submit a self-study statement to the ECSA that encompasses the elements defined in sections 9.1 to 9.6 below.

These per-programme documentation requirements are written primarily for a Regular Accreditation, an Interim Accreditation or a Final Accreditation. In the case of an Interim Report, the accreditation committee must specify the scope of the required documentation. In the case of a submission for Provisional Evaluation, the documentation must address all issues, detailing the entire curriculum and plans or commitments for stages not implemented. In the case of a submission for Initial Evaluation or Desktop Evaluation, items identified in Table 1 must be addressed. In the case of Initial Evaluation, items identified in Table 1 must be addressed at the planning level at the very least. Regular Accreditation requires all the documentation listed.

**Table 1: Self-study documentation requirements**

Type of Evaluation	Self-Study: Sections of <b>E-12-P</b> to be completed							
	9.1	9.2	9.3	App	9.4	9.5	9.6	10
Initial	*		*	*	*	*	*	-
Desktop	*	+	*	*	*	*	*	10.1,2,3,8
Key: *: Required, +: required for re-submission								

Major items of documentation not listed in section 8.2 that are common to all programmes may be included in the Dean's documentation and cross-referenced from the programme documents.

The Head of Department or Programme Coordinator designated by the Head of Department is responsible for the correctness and completeness of all documentation and this responsibility may not be delegated to other staff members.

Persons responsible for preparing the self-study and related documentation must ensure that the documentation presents the evidence that allows the team to evaluate the

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 14 of 23

programme against the criteria in document **E-03-CRI-P** using the framework presented in document **E-14-TEM-P**.

The headings in section 6 may be used as section headings in the self-study submission.

### 9.1 Programme identification and responsibility

- (a) Name of provider
  - (b) Name of department
  - (c) Full name and abbreviation of the qualification as defined in the provider's rules
  - (d) The person responsible for the programme
  - (e) Identify all pathways by which students may obtain the qualification, for example, study different sites, modes of learning (contact/distance), access programmes, articulation, and franchise a transfer arrangements. (If necessary, describe the pathways to the degree by means of a diagram.)
- Under the following headings, summarise any major changes that have occurred since the last accreditation, giving dates of implementation and cohorts of affected students:
    - Educational objectives, curriculum structure and content
    - Academic Regulation Changes
    - Assessment of exit-level outcomes or graduate attributes
    - Teaching, learning, assessment and quality assurance
    - Staff, students and other resources.
  - Describe plans for changes to the programme, outcomes, assessment and resources that will come into effect during the next accreditation cycle. For every change, *identify the cohort of students* that will graduate under each identified variant curriculum and the range of years over which graduates are expected.

### 9.2 Follow-up on previous Accreditation

Depending on the previous accreditation decision, provide statements regarding the following:

In the case of an Interim Report, Interim Accreditation or Final Accreditation:

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- A statement indicating how the deficiencies identified at the previous accreditation have been remedied.
- A statement of major changes to the programme, which are unrelated to the additional deficiencies that must be remedied.
- If concerns were expressed in the previous accreditation decision letter, the provider's response to these concerns must be detailed.

### 9.3 Programme and course information

This includes the following:

- (a) A statement of the educational objectives (purpose) of the programme and the graduate attributes of the programme (to state the objectives and graduate attributes for its students and constituency, the provider's format should be used.
- (b) A description of the structure of the programme in terms of the courses/modules, including whether these are compulsory or elective, the credits allocated and the allocation to semesters or year of study. (Programme Structure and Course/Module Details Table in document **E-13-F&T-P** must be used. The Table also provides for the contact and other activities associated with each course, that is, lectures, tutorials, laboratory assignments and other activities.)
- (c) Analysis of the programme content by knowledge area in the format defined in the Table of Programme Structure and Course/Module Details in document **E-13-F&T-P** and supported by Multipliers used in Table 1A.
- (d) Identification and description of the design of the core of the programme comprising mathematics, basic sciences and fundamental engineering sciences (This must be more than a mere list of courses. Rather, the logic underlying the construction of the core and the arguments for its coherence must be presented.)
- (e) Identification of the specialist study components of the programme. (The objectives and logic underlying the specialist components must be presented.)

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 16 of 23

- (f) The progression rules governing the requirements for constructing curricula and the award of the qualification, including explicitly stated articulation options into, out of and beyond the programme.
- (g) A summary of the criteria for awarding credit, allowing re-assessment, allowing repeat courses, progression of students from one year to the next, graduation and exclusion from the programme. (Details of the assessment system must be summarised in Table of the Course/Module Assessment Details in document **E-13-F&T-P**.)
- (h) Appendix 1 to the programme submission, provides a specification for each course/module of the curriculum, including service courses, consisting of at least the following:
- course outcomes
  - graduate attributes
  - means by which the students are assessed against the graduate attributes
  - detailed course content
  - a list of prescribed books and other supporting material.

This information should preferably be in the form presented to each student.

A Table of Contents referring to the individual course documents in the sequence used when entering courses in Programme Structure and Course/Module details Table must be included. Programme Structure and Course/Module details Table (Column 1 and 2) may form the basis of the Table of Contents.

#### **9.4 Assessment of graduate attributes and assessment system**

In this section, the academic entity responsible for the programme is required to *provide evidence* that the evaluation team can use to answer questions 2.1 and 2.2.

Does the assessment within the programme:

- (a) ensure that all graduates satisfy each graduate attribute defined in the relevant standard?

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<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 17 of 23

(b) use a documented set of assessment criteria and processes that together demonstrate that the graduate attributes have been satisfied at the level indicated by the range statement?

To provide evidence, the following must be fulfilled:

- (c) Each graduate attribute specified in the relevant standard must be explicitly addressed in terms of the means of assessment, the criteria for satisfaction of each graduate attribute and the required level at exit level. Evidence must be presented using Evidence of Assessment of Graduate Attributes Table in document **E-13-F&T-P**, indicating under each graduate attribute:
- the courses or modules in which assessment of the graduate attribute takes place
  - the assessment criteria and the method of assessment
  - the level of performance required of the student
  - the consequences for the student of not satisfying the graduate attribute.
- (d) A description of the internal policies and procedures to validate the assessment of graduate attributes through internal processes and external moderation must be presented.
- (e) A concise analysis of the strengths and weaknesses of the system of assessing graduate attributes must be documented.

Note that assessment material for each course as specified in this section must be available

### **9.5 Teaching and learning and assessment process**

Provide evidence of the effectiveness of the teaching and learning process within the programme, addressing at least the following aspects:

- (a) Taking the student entry level into account, how does the programme develop:
- fundamental and core disciplinary knowledge?
  - specialist knowledge?
  - the student towards satisfying the graduate attributes?

The format specified in Course or Module Outcome Development and Assessment Roles Table in document **E-13-F&T-P** is recommended together with a suitable commentary.

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<b>Document No.:</b> E-12-REQ-P	<b>Revision No.:</b> 4	<b>Effective Date:</b> 15/10/2020	
<b>Subject: Programme Self-study Documentation Requirements for Accreditation</b>			
<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 18 of 23

- (b) What is the teaching and learning methodology, how is it geared towards the student entry routes and levels and which learning opportunities does it provide?
- (c) Which are the provided academic development programmes? Present a description of each. (If the academic development of students in the programme is covered fully in the Dean's submission, simply cross reference it here and highlight any programme-specific conditions).
- (d) How does the programme develop independent learning?
- (e) How is the programme coordinated?
- (f) What is the role of formative assessment in the programme? How does the assessment process provide timely feedback to students?
- (g) How and at which stages is the progress of students monitored?
- (h) What are the details of the method of moderation of assessment according to university practice? Include the role of moderators, second examiners and external examiners.
- (i) Who are the external examiners, second examiners, moderators, etc. and what are their affiliations and qualifications? Which duties are assigned to each? Provide a list. Internal Examiner and External Moderator details Table in document **E-13-F&T-P** provides a format for this information.
- (j) What are the processes the department/school uses to assess and continuously improve the quality of the teaching, learning and assessment of the programme? Provide specimen paper trails for quality assurance and the improvement aspects of the programme.
- (k) What are the internal academic and administrative checks and balances in the assessment and promotion system? Provide a brief description.
- (l) Other issues including diversity, inclusivity, accessibility, etc. should also be addressed.
- (m) What are the academic and administrative procedures for programme review and development, including service courses? Provide a brief description.
- (n) What is the throughput of the programme and how does it vary by gender and race?
- (o) What measures are taken to monitor and improve/maintain throughput? Data must be presented as in Cohort Analysis Table in document **E-13-F&T-P**.
- (p) What are the strengths and weaknesses of the teaching, learning and assessment process and the quality assurance and improvement process? Provide a concise analysis.

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<b>Subject: Programme Self-study Documentation Requirements for Accreditation</b>			
<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 19 of 23

## 9.6 Sustainability factors for the programme

### Students

- (a) What are the entry routes to the programme (including academic development programmes) and what are the entry requirements for each route? Any admission rating formulas must be explained. What is the distribution of students entering by the various routes? What is the distribution of students by admission rating for recent school-leavers? Analysis of Student Intake Table in document **E-13-F&T-P**.
- (b) Describe the capacity of the school/department to conduct the programme for the enrolled number of students as reflected in Cohort Analysis Table in document **E-13-F&T-P**, taking into account other commitments the unit may have.

### Staff

- (a) Provide a list of the staff who are teaching in the programme with their academic and professional qualifications and experience, specialities and publication numbers. Staff who are giving support courses to the degree programme should also be listed. Academic Staff Teaching in the Programme, including Service Department staff Table in document **E-13-F&T-P** shows the preferred format. The registration status with ECSA and/or other bodies of each member of the engineering staff must be shown (CVs of the academic staff must be available).
- (b) Provide Key Staff Indicators as defined in document **E-13-F&T-P**.
- (c) Provide a description of strategies for staff recruitment, development and retention.
- (d) Describe the research profile of the staff and opportunities for the research development of staff.
- (e) List the support staff, showing their overall responsibilities and contributions to the programme.

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<b>Subject: Programme Self-study Documentation Requirements for Accreditation</b>			
<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 20 of 23

## Resources

- (a) List the budget allocations to the programme's host department over a 5-year period under the headings: *equipment, computing, operational, library books and journals*. Headings may vary depending on provider budget categories.
- (b) List the laboratories that support the programme with a short description of the facilities and function of each and the support provided for the programme.
- (c) List the available computing and networking facilities to (1) students in the programme; and (2) staff of the department, indicating the capacity and the time of availability for students in the programme.
- (d) List of infrastructure to support Hybrid Teaching and Learning, eg:
  - Learning Management System software and Infrastructure availability
  - Computer venue
  - Network, connectivity, etc.

## Impact of the programme

Describe measures to assess the impact of the programme and how the results are used to improve the programme.

## 10. ADDITIONAL DOCUMENTATION REQUIRED FOR ACCREDITATION

Materials relating to service courses must be available before and during the accreditation, with student scripts selected from the programme concerned. Items 1 to 4 in the list below should be presented in a properly indexed file system on a server, for reading only, that is accessible to the team.

The following must be available:

1. Assessment materials for each course, including test papers, assignments and project statements, examination question papers with specimen solutions (memoranda) for the last three years.

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<b>Subject: Programme Self-study Documentation Requirements for Accreditation</b>			
<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 21 of 23

2. Marked examination, project and assignment scripts of all courses/modules for the most recent year. (The number of scripts to be presented is the smaller of the number in the class or the number 15).
3. A selection of the best, the average and just passed/failed student scripts in each course.
4. Examples of final-year design and/or laboratory/investigational projects for the most recent year that are representative of the range of sub-disciplines in the programme of good, average and just passed/failed students. (The number of reports to be presented is the smaller of the number in the class or the number 15).
5. Course material supplied to current students or expected to be obtained by students: tutorial sheets, instruction sheets for laboratory experiments, prescribed texts, notes, etc.
6. Information on the times that students may access the laboratory, computing facilities and other resources.
7. Access to individual student academic records on request.
8. CVs of the department's academic staff. (These may be full CVs or two-page summaries. CVs of service course staff are not required; their details are summarised in Academic Staff Teaching in the Programme, including Service Department Staff Table in document **E-13-F&T-P**).
9. Documentation on the internal quality assurance process, including sample paper trails for selected courses and all exit-level courses.
10. Documentation on the moderation process (internal and external), including the moderators' high-level reports for the most recent examination.

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<b>Subject: Programme Self-study Documentation Requirements for Accreditation</b>			
<b>Compiler:</b> MB Mtshali	<b>Approving Officer:</b> EL Nxumalo	<b>Next Review Date:</b> 15/10/2024	Page 22 of 23

## REVISION HISTORY

Revision number	Revision date	Revision details	Approved by
Rev. 0: Concept A	26 Aug 2006	Developed from PE-73-r2	Working Group
Rev. 0: C-B	30 Nov 2006	Renumbered, adapted to E-03-P criteria	Working Group
Rev. 0: C-C	19 Jan 2007	Requirements aligned with evaluation form	Working Group
Draft A	19 May 2007	Editorial	Working Group
Rev. 1	7 Feb 2008		Council
Rev. 2: Draft A	23 Apr 2014	Changes as indicated in marginal notes	EPAC Working Group
Rev. 2: Draft B	3 June 2012	Changes resulting from Consultations with Deans, ESGB, EPAC incorporated	EPAC recommendation for approval
Rev. 2	31 July 2014		Approved by Council
Rev. 3: Draft A	13 Feb 2018	Errors corrected, adding graduate attributes	Working group
Rev. 3	22 May 2018	Approval	PDSGC
Rev. 4: Draft A	04 Sept 2020	Alignment of document and adaption to on-line accreditation	Working Group
Rev. 4: Draft B	01 Oct 2020	Review by Education Business Unit	Education BU
Rev. 4	02 Oct 2020	Review by the Executive	EL Nxumalo
Rev. 4	15 Oct 2020	Approval	RPSC

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Subject: Programme Self-study Documentation Requirements for Accreditation			
Compiler: MB Mtshali	Approving Officer: EL Nxumalo	Next Review Date: 15/10/2024	Page 23 of 23

The Programme for:

**Self-study Documentation Requirements for Accreditation**

Revision 4 dated 15 October 2020 and consisting of 24 pages has been reviewed for adequacy by the Business Unit Manager and is approved by the Executive: Research Policy and Standards (RPS).

  
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Business Unit Manager

13/11/2020  
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Date

  
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Executive: RPS

16/11/2020  
.....

Date

This definitive version of this policy is available on our website.

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