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REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID-AFRIKA

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PART 1 OF 2

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BOARD NOTICE

NOTICE 39 OF 2015

The Engineering Council of South Africa

CALL FOR COMMENT

PROPOSED RULE RELATING TO THE NEW REGISTRATION SYSTEM FOR THE ENGINEERING COUNCIL OF SOUTH AFRICA

In terms of Section 36(2) of the Engineering Profession Act, 2000 (Act No. 46 of 2000), the Engineering Council of South Africa hereby makes known that it intends to prescribe Rules, as set out in the Schedule, in terms of Section 36(1) of the Act.

The New Registration System, as set out herein and in the annexures hereto, is hereby published for public comment. Written comments on the proposed Rules are invited from interested persons.
Persons who wish to submit comments in connection with the New Registration System are invited to do so by no later than **16:00, 6 March 2015**. Comments received after that date may not be considered.
All comments must be submitted in writing to Ms. Neggie Ndlovu, Manager: Registrations or Ms. Feziwe Mnyamana, Office of the Executive: Statutory Functions

By Mail:
Ms. Neggie Ndlovu
The Engineering Council of South Africa
Private Bag X691
BRUMA
2026

By E-mail: comments@ecsa.co.za
Fax: (011) 622-9295

Telephonic Enquiries: Ms Neggie Ndlovu at (011) 607-9563
Ms. Feziwe Mnyamana at (011) 607 9518

NOTICE
KENNISGEWING

Engineering Council of South Africa

ENGINEERING PROFESSION ACT, 2000 (ACT 46 OF 2000)

A RULE IN TERMS OF SECTIONS 18(1); 19(1) AND 36

NEW REGISTRATION SYSTEM

The Engineering Council of South Africa, has in terms of sections 18(1), 19(1) and 36 of the Engineering Profession Act, 2000 (Act 46 of 2000) made the rules set out in the Schedule.

Definitions

In this Board Notice and in all documents attached as Annexures, any expression or word that has been defined in the Act has that meaning unless the context otherwise indicates. The following terms have been used herein, and for ease of reference the definitions thereof are listed hereunder

(1) "Accredit" means the process of evaluation and recognition by the council of education programmes offered by educational institutions relation to the engineering profession, and "accreditation" has a corresponding meaning;
(2) "Candidate" means a person who is registered in terms of section 19 (2) b) of the Act;
(3) "Committee" means a committee established in terms of section 17 of the Act;
(4) "Competency assessment" is a summative assessment of an individual's competency against the prescribed standard based on evidence from the individual's work, reports by qualified observers, and other tests that may include a professional review;
(5) "Competency standard" means a statement of competence required for a defined purpose;
(6) "Council" means the Engineering Council of South Africa established by section 2 of the Act;
(7) "Generic baseline competency" means the competency for a category of professional defined in terms of outcomes, including the expected level of performance, that can be demonstrated in a range of occupational contexts;
(8) "Information" means engineering documents and data produced or relied upon by the Registered Person in the performance of work that form a material part of the project records, including design calculations and drawings, whether electronic format or otherwise;
(9) "Policy on registration" means a document giving effect to the empowerment of council in the Act to register individuals in the stipulated categories, supported by operating procedures, competency standards, policies and processes for assessment of applicants, training guidelines, standard forms and information specific to particular work contexts;
(10) "Practice area" means a distinctive area of knowledge and expertise developed by an engineering practitioner by virtue of the path of education, training and experience followed;
(11) "Prescribe" means prescribed by a rule made by the council under section 36 of the Act, and "prescribed" has a corresponding meaning;
(12) "Prescribed standards" means the competency standards (outcomes) for the category and the discipline specific requirements (if any) that must be satisfied by an applicant for registration;
(13) "Procedure for registration" means a document setting out the process prescribed for applying for registration and forms to be completed and submitted, and the assessment process to be followed to decide on competence (or not);
(14) "Professional" means a person who is registered in terms of section 19 (2) a) of the Act;
(15) "Registered person" means a person who is registered under one of the categories referred to in section 18 of the Act;
(16) "The Act" means the Engineering Professions Act, 2000 (Act No. 46 of 2000); and
(17) "Work" means any engineering work normally carried out by "Registered Persons" in the practice of their profession.

TABLE OF CONTENTS

1. INTRODUCTION

The Engineering Council of South Africa ("ECSA") as a statutory council is governed by its enabling legislation: the Engineering Profession Act No 46 of 2000("The Act").

Section 18(1) of the Act defines categories of registration in which ECSA may register persons, namely: Professional Engineer; Professional Engineering Technologist; Professional Engineering Technician and Professional Certificated Engineer as well as related Candidate Categories, namely: Candidate Engineer; Candidate Engineering Technologist; Candidate Engineering Technician and Candidate Certificated Engineer.

Section 19(1) of the Act states that a person may apply to Council, in the prescribed form, for registration in any of the categories referred to in section 18(1). In giving effect to this legislative provision, ECSA has over the years developed policies, procedures and application forms for purposes of managing or administering its registration processes. Policies are geared at evaluating the standard to be demonstrated by the applicants for registration (assessment of the competence of applicants) in professional categories as well as to evaluate the educational requirement for registration.

In line with best practice as well as ECSA's commitment to international agreements and accords, ECSA regularly reviews and enhances its registration system for purposes of increasing efficiencies, integrity and security thereof. A New Registration System has been developed to give effect to this ideal. The Department of Pubic Works' Policy Document on the proposed amendments of the statutory framework of the Built Environment Professions (paragraph 3) states that *"the Built Environment Councils must safeguard the highest standards of quality to guarantee safety in the built environment"*. It is accordingly through regular reviews of its registration systems that ECSA lives up to the ideals articulated in the Policy Document.

In terms of the New Registration System, the applicant for registration may apply in either one of two ways, namely:

- Through a paper-based application process which entails a manual completion of an application form and submission(with all supporting documentation) thereof to ECSA; or
- Through a secure system of online application and this entails entering of the necessary data and uploading of supporting documents as required.

The content of both application processes is similar, with the only distinguishing feature being that the applicant may opt to apply manually, or through a web-based application form.

In giving effect to its registration legislative mandate, ECSA has a myriad of registration policies. ECSA's registration policies are geared at evaluating the standard to be demonstrated by applicants for registration (assessment of the competence of applicants) in professional categories, the educational requirement for registration. These policies are supported by operating procedures, competency standards, processes for assessment of applicants, training guidelines, application guidelines, standard forms and information specific to particular work contexts.

Any applicant, who through his or her performance demonstrates competence against the standards, including educational outcomes, will be registered provided that none of the conditions listed in section 19(3) of the Act apply in the particular case.

2. THE PAPER-BASED AND THE ONLINE REGISTRATION SYSTEMS

2.1 The Paper-based registration system

The basis of the application for registration is a registration form. Historically, ECSA's registration system has been paper-based. That form of registration is still applicable today, albeit in the form of the New Registration System. This means that all applicants for registration manually complete and submit an application form either by hand-delivery, post or courier service subject to payment of the requisite application fee.

The paper-based registration system shall, with time, be gradually phased out and the online system shall become the only form of registration. Communication in this regard shall be posted on ECSA's website and other means of communication well in advance of the said date.

There are two types of applications forms:

- Professional Engineer Application Form. This Form is attached hereto as **Annexure A.**
- Candidate Engineer Application Form. This Form is attached hereto as **Annexure B.**

NB: The Application form for registration as a Candidate is a single form covering all candidate registration categories at ECSA.

Upon receipt of the application form, and provided all the supporting documentation is submitted along with the relevant application form, thie information will be captured by the ECSA administrative personnel for onward processing and consideration by the relevant Committees appointed to evaluate or assess the applications.

2.2 The Online Registration System

In the quest to be aligned with international best practice and trends, as well as to increase efficiencies, turnaround times and security of the registration system, ECSA has introduced an online registration system.

The development of the online registration system is a phased one, and is to be rolled out in three phases:

- Phase 1: Professional and Candidate Professional Engineers.
- Phase 2: Professional and Candidate Professional Technicians, Technologists, Certificated Engineers and Specified Categories.
- Phase 3: Continuing Professional Education (CPD).

It is envisaged that the entire online registration system development and roll-out period will not exceed a period of three years.

3. POLICIES UNDERPINNING THE NEW REGISTRATION SYSTEM

ECSA's legislative mandate in respect of registration is implemented through a suite of policies.

These policies are underpinned by the following principles:

- To expound and articulate the legislative requirements for registration.
- To ensure consistent and uniform application of the registration application process workflow from

inception to the end.

- To ensure clear role-delineation by the different role players in the registration process, namely: the Applicant, the Assessors, the Committees, the Administration as well as Council (where applicable).
- To ensure integrity of the entire registration process workflow.

The following constitute ECSA's policy framework on registration:

- R-01-P (Policy on registration of persons in Professional Categories). This Policy is attached hereto as **Annexure C**.
- R-02-PE (Competency Standard for registration as a Professional Engineer). This Policy is attached hereto as **Annexure D**.
- R-02-PT (Competency Standard for registration as a Professional Engineering Technologist). This Policy is attached hereto as **Annexure E**.
- R-02-PN (Competency Standard for registration as a Professional Engineering Technician). This Policy is attached hereto as **Annexure F**.
- R-03-PE (Processing of Applications for Registration as Candidate Engineer and Professional Engineer). This Procedure is attached hereto as **Annexure G.**
- R-03-PT (Processing of Applications for Registration as Candidate Engineering Technologist and Professional Engineering Technologist). This Procedure is attached hereto as **Annexure H**.
- R-03-PN (Processing of Applications for Registration as Candidate Engineering Technician and Professional Engineering Technician). This Procedure is attached hereto as **Annexure I**
- E-17-P (Criteria and Processes for Recognition of Educational Qualifications for Professional Categories). This Policy is attached hereto as **Annexure J**.

It must be noted that, in pursuance of excellence and upholding of the highest standards of registration of professionals, ECSA does from time to time, review and refine the registration policies and application forms, without any material change to the standards and or requirements for registration as such. Accordingly, whilst the attached policies and forms form the basis of the New Registration System, there may be constant review and refinement of these without any material/significant change to or shift in the registration requirements or standards contained in the attached policies. It must be noted that, should future review of the policies and forms result or necessitate a material change to or a material shift in the requirements for registration, ECSA shall undergo a consultative process similar to this one. There shall be no material changes effected by ECSA to the New Registration System without prior public consultation similar to this one.

4. CONCLUSION

As enjoined by section 36 of the Act, ECSA hereby calls for comments to the changes being made to its registration system, referred to herein as the "new registration system".

This document is geared at soliciting comments and input from interested parties and stakeholders regarding the New Registration System. Interested parties and stakeholders are therefore hereby called upon to read this document as well as the attached annexures thereto, and comment thereon.

The consultation process is not limited to the publication of this document and its annexures. Parallel to soliciting and receiving comments and inputs on this document and its annexures, a series of nation-wide consultative road shows on the New Registration System are being arranged.

ENGINEERING COUNCIL OF SOUTH AFRICA

(05/05/2014) Form **AN1.1**

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2198

ECSA

Office Use
Ref.:

APPLICATION FORM

REGISTRATION AS A PROFESSIONAL ENGINEER

To be used only for paper based Applications for assessment against ECSA Competency Standards for Professional Engineers, document R-02-PE

1. General Information:

Surname:				**First Names:**			**PHOTOGRAPH** *(Passport-type)*
Date of Birth:				**Identity No:** *Or*			
***Gender**		***Race Group**	**Asian**	**Black**	**Passport No. And Country:**	**Country of normal residence:**	*(Please paste - do not staple)*
M	**F**		**Coloured**	**White**			

Home Address:	**Postal Address:**	**Name & Address of present Employer:**
Tel. No. (Home): **Tel. No. (Work):** *(include area codes)* **Cell No.:** **E-mail:**	**Title of Position held:**	**Tel. No. (Employer):** **Fax No.:** *(include area codes)* **E-mail:**

* Completion of this section is necessary in order to accurately reflect equity statistics in terms of Government Policy.

2. Qualifications: (All qualifications at tertiary level)

Educational Institution	Qualification	Attendance from to	Date of final examination	*Office use*

NB: Kindly initial this page in the presence of a Commissioner of Oaths / Justice of Peace.

Applicant: .....

Commissioner Of Oaths/ Justice Of Peace: .....

/...

3. Previous / Current Registration or Application Details: (e.g. Candidate Engineer, Professional Engineering Technologist, etc.)

Type	Category	Number	Date
Previous Registration:			
Current Registration:			
Previous Application:			

4. Membership of Voluntary Associations recognised in terms of the Act (or other):
(If more space is needed, please supply information separately.)

Name of Association / Institute / Society	Membership grade and date accepted	Date of Application

5. Application Fee: **(See item 5 of the Information Sheet)**

My Application fee of R _____ (cheque) is enclosed herewith.

6. Referees:

(1)	(2)

7. Declaration:

I, _____ (full names)
hereby apply for **Registration as a Professional Engineer** and undertake to abide by all the provisions of the **Engineering Profession Act, 2000 (Act No. 46 of 2000)** and any **Rules** published thereunder, including the **Code of Professional Conduct**. I declare that Section 19(3)(a) of the Act does not preclude me from registration. I solemnly declare that, to the best of my knowledge, all the information contained herein is true.

Signature: _____

Sworn to/Affirmed before me at _____

on this the _____ day of _____(month & year).

Commissioner of Oaths/
Justice of Peace: ..... *(Commissioner's stamp)*

Office Use Only

Application fee: R _____

Received by: _____ Date: _____ *(Council's stamp)*

Engineering Council of South Africa **(05/05/2014)** **Sheet AN1.1**

Information Sheet for Applicants applying for Registration as a Professional Engineer

A. General:

Your application for registration as a Professional Engineer will be considered only if the following documents are submitted:

- Completed Application Form (AN1.1 & AN1.2).
- Certified copies of Qualifications.
- Certified copy of Identity Document/Passport.
- Completed Training/Experience Report (Forms AN2.1), one for each training/experience period, if applicable a completed Training/Experience Outline (Form AN2.2) which should in total not exceed 2 000 words, and a Summary of Training/Experience Reports (Form A2.3).
- Engineering Report (Forms AN3) which in total should not exceed 6000 words.
- Pre-registration CPD-type Activity Report (IPD) (Form AN4)
- Referee Reports, each duly completed on Form AN6.1 & AN6.2. If training under a Commitment and Undertaking (C&U), one referee report **must** be from the registered mentor for the C&U concerned.

Please note the following:

- The submitted information must be complete, on the prescribed forms and all questions must be answered.
- In completing all forms use type or print clearly in **black ink** to ensure clear copying.
- The supporting documents must be **typed** and must be **marked clearly** for purposes of identification.
- **Application fee** must accompany the Application. NB. See item 5 below.
- Do not bind the application documents together. A **stapled application** is preferred.
- Before submission of an application, ensure that the **Referees** are indeed willing to submit their Referee Reports.
- Your application for registration will be considered only when the referee reports have been received by the Council. If a referee report does not reach Council within a reasonable time, you will be notified accordingly. You will then be expected to get in touch with the referee on the matter.
- The registration process may take **6 (six) months** or longer to complete and each applicant will be informed of the Council's decision as soon as it becomes available.
- Information regarding the progress of any application will not be given telephonically.

Please note also that it is **your** responsibility to ensure that all reports reach Council's offices timeously.

B. The Application Form:

The following information is given to assist applicants to complete this form - the numbers refer to the equally numbered sections of the Application Form.

1. **General Information:** Ensure that all personal details are correct. A recent passport-type photograph of the applicant is required.

2. **Qualifications:**
   - This should specifically include your first engineering degree. Ensure that copies of all qualification documents are certified. Copies of a certified copy are not acceptable.
   - Applicants with non-accredited educational qualifications or foreign educational qualifications, except those recognised under the Washington Accord, and who are not registered as a candidate engineer, are required to apply for an Evaluation of Educational Qualification prior to applying for registration as a professional engineer.

3. **Previous/Current Registration or Application Details:**

If you have previously applied for registration in any category, or were previously registered but your registration was cancelled for any reason, please provide category and previous registration number in the relevant block. If you are currently registered in another category, also complete the appropriate block.

/...

4. Membership of recognised Voluntary Associations:

A list of associations recognised by Council for purposes of a reduction in annual fees is attached as **Addendum A**. Proof of current membership of such association will qualify you for a reduction in your annual fee should your application be successful.

Persons who have applied for membership of any of the above-mentioned associations, but who have not yet been accepted, must indicate this in the appropriate block. Membership of other institutes/societies (not recognised) may be stated, but this does not qualify the applicant for a reduction in the annual fee.

5. Application and Annual Fees:

Only cheques must accompany your application form, as **no cash or postal orders will be accepted**. If you do not have a cheque account, you may deposit cash at any Standard Bank into ECSA's account. ECSA's banking details are: Standard Bank, Eastgate Branch, Code 018505, Account number 221285938, Swift Code SBZAZAJJ. Alternatively you may make payment **(1)** via the internet, or **(2)** you may ask your bank for a bank cheque to be made out to ECSA, **(3)** contact your bank's telephone banking division to make payment into ECSA's account or **(4)** by credit card by phoning our Accounts Department. When making the deposit please ensure that your name, initials and reference number are entered in the field named "Depositor's name or reference number" and attach a copy of the proof of deposit to your application form. Refer to separate sheet regarding fees payable, visit ECSA's website at http://www.ecsa.co.za, click on **"Finance"** or contact the Council's offices at (011) 607-9500 to determine the current fee. *Kindly note that pro rata annual fees will be charged for the remainder of the financial year in which applicants are registered.*

6. Referees:

Each applicant must, with the permission of the persons concerned, supply the Council with the names and addresses of at least two referees, who have personal knowledge of the applicant's professional performance and engineering experience. Referees must be registered with ECSA either as a Professional Engineer, a Professional Engineering Technologist or a Professional Certificated Engineer, of which at least one must be a Professional Engineer. Under certain circumstances, the foreign equivalents to the above categories may be accepted.

Referees may be chosen in the following order of preference:

(a) Mentor
(b) Immediate supervisor
(c) Colleague at a higher or the same level, involved with your work
(d) Indirect supervisor
(e) Colleague not directly involved with your work
(f) Employer
(g) Client

If you trained under a C&U, one referee report **must** be from your Mentor, who is registered against the C&U. Use Form AN5 for formal correspondence with each referee, and enclose copies of the referee report (Form AN6.1 & AN6.2), a copy of R-02-PE, the guideline for referees (Sheet AN6), a copy of the Discipline-specific Training Guideline for Candidate Engineers (R-05-Disc-PE) and a copy of Form AN2.3. It is suggested that you provide each referee with an addressed envelope with prepaid postage for the referee to forward the report direct to the Council.

7. Declaration:

Section 19(3)(a) of the Engineering Profession Act, 2000 (Act No. 46 of 2000) reads:

"*Despite subsection (2), the Council may refuse to register an applicant -*

(i) if the applicant has been removed from an office of trust on account of improper conduct;
(ii) has been convicted of an offence in the Republic, other than an offence committed prior to 27 April 1994 associated with political objectives, and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iii) if the applicant has, subject to paragraph (b), been convicted of an offence in a foreign country and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iv) if the applicant is declared by the High Court to be of unsound mind or mentally disordered, or is detained under the Mental Health Act, 1973;
(v) for as long as the applicant is disqualified from registration as a result of any punishment imposed on him or her under this Act;
(vi) if the applicant is an unrehabilitated insolvent whose insolvency was caused by his or her negligence or incompetence in performing work falling within the scope of the category in respect of which he or she is applying for registration."

Note that your application must be sworn to or affirmed before a Commissioner of Oaths or a Justice of Peace. Your attention is drawn to the initialling required at the bottom of the first page of the Application Form.

Engineering Council of South Africa (05/05/2014) **Form AN2.1**
R-03-TER-PE

TRAINING/EXPERIENCE REPORT
PROFESSIONAL ENGINEERS

Page No: ____ of___

Surname and Initials: _____

Discipline of Engineering: _____
(e.g. Civil/Mech etc.)

Consult the enclosed Information Sheet (Sheet AN2) before completing this report.

Period No:	**Date from:** **to:**	**No of weeks:**	**Position held:**	**Degree of responsibility**

Employer's Name and address:	**Did you train under a Commitment and Undertaking (CU)?** **If yes, provide number of CU No:**	**Yes** **No** **No:** _____
Supervisor's Name and address: **ECSA Registration No:**	**Supervisor's Signature:** **Date:**	

Signature of Applicant: _____ **Date:** _____

Engineering Council of South Africa (05/05/2014) Form **AN2.2**
R-03-TEO-PE

TRAINING/EXPERIENCE OUTLINE
PROFESSIONAL ENGINEERS

Page No: ____ of___

Surname and Initials: _____

Discipline of Engineering: _____
(e.g. Civil/Mech etc.)

Consult the enclosed Information Sheet (Sheet AN2) before completing this report.

Period No:	**Date from:** **to:**	**No of weeks:**	**Position held:**	**Degree of responsibility**

Employer's Name and address:	**Did you train under a Commitment and Undertaking (CU)?**	**Yes** / **No**
	If yes, provide number of CU No:	**No:** _____
Supervisor's Name and address:	**Supervisor's Signature:**	
ECSA Registration No:	**Date:**	

Signature of Applicant: _____ **Date:** _____

Engineering Council of South Africa (05/05/2014) Form **AN2.3**
R-03-TES-PE

SUMMARY OF TRAINING/EXPERIENCE REPORTS : PROFESSIONAL ENGINEERS

Surname and Initials: _____

Discipline of Engineering: _____
(e.g. Civil / Mech etc.)

First complete a Form AN2.1 for each period.

Period No.	Dates From:	To:	No. of weeks	Employer	Post held	Subject and type of work
Total Weeks:						

Signature of Applicant: _____ **Date:** _____

Engineering Council of South Africa **(05/05/2014)** **Sheet AN2**

Information Sheet
for completion of the
Training / Experience Report

Your application for registration as a **Professional Engineer** must be accompanied by the Training/Experience Report (**Forms AN2.1)** in which your engineering experience from the date of obtaining the first engineering degree to the date of application is recorded in chronological order and typed or printed in black ink.

- Use a separate form for each training/experience period.
- Number the periods in chronological order, which may not overlap.
- Cover the period from graduation to date of application.

See also section 4.3 and Table 3 of R-03-PE.

A training/experience period ends when:

- your work environment has changed, e.g. when a major task or project has been completed;
- your type of work has changed;
- your responsibilities or level of function have changed (for instance, as in a promotion);
- you have changed employer;
- your training is interrupted (for instance by study or prolonged illness).

The training/experience periods and periods of interruption must also be noted in the Summary of Training/Experience Reports (**Form AN2.3**). Ensure that each **Form AN2.1** is signed (verified) by your relevant supervisor or employer and signed by yourself. If you cannot obtain the supervisor's signature, please annotate accordingly in the appropriate block and submit an affidavit to the effect that the information provided is true and correct, and the reasons why you could not contact the supervisor. If supporting documentation is appended, sign each document and indicate to which training/experience period it refers.

In the Training/Experience Report you should write in the 1st person and for each period you are expected to show:

- **Organogram** showing supervisor(s), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions and registration (if any)
- Nature of training or experience
- Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation
- Documentation, reports, presentations prepared
- Management of materials, machines, manpower, methods or money, contracts
- Interaction with clients, stakeholders and other disciplines
- Health and safety considerations; hazards and environmental considerations; other legislation
- Completion of any courses relevant to your professional development

For the Degree of Responsibility block, use the scale A-E defined in section 4.3 of R-03-PE.

Describe the work you did. Do not just list tasks and projects but explain your role – to what degree you were exposed or actually responsible for the work done. Do not spend more than one paragraph describing the project you worked on.

Mature applicants: i.e those with at least 10 years of post graduate experience, need not hand in lengthy experience reports (Form AN2.1) in respect of the earlier years of their career. The applicant must report at least three years at degree of engineering responsibility E (Performing) in detail in the TER format that are signed by the supervisor. Such periods need not include the last period(s) in the applicant's TES if the degree of responsibility is not E. Such an applicant may submit Training and Experience Outlines (TEO) for the remaining periods or groups of related periods. See also section 4.3 and Table 3 of R-03-PE.
The Council's requirements for registration as set out in Competency Standard R-02-PE remain the basic requirements for registration.

The total Training/Experience Report should not exceed 2000 words.

Engineering Council of South Africa (05/05/2014) **Form AN3**
R-03-ER-PE

Page No: ____ of___

Engineering Council of South Africa **Engineering Report** as part of Application for Registration as Professional Engineer			
Applicant:			**Self-evaluation**
In terms of my general declaration, I confirm that this report was written by me for the purpose of this application	**Signature:**		
	Date:	**Word Count:**	
Holistic Self Evaluation			

Engineering Council of South Africa **(05/05/2014)** **Sheet AN3**

Information and Instructions for completing Engineering Report:

1. This is a report in which the applicant reflects on his or her engineering development and proficiency achieved as exemplified by work completed. Work completed is not necessarily in a single project.

2. Write the report in conventional prose form, using the first person singular when describing your actions or thinking.

3. Insert one heading or paragraph in each row. Do not insert boundary lines between rows.

4. Insert cross references to TERs in the text by number where appropriate. For example, "As described in TER 3, I designed a …".

5. Against relevant paragraphs, insert annotations that indicate that the material shown provides evidence of competent performance against the outcomes as defined in R-02-PE. Use the following Notation:
   1, 2, 3 … : The outcomes defined in R-02-PE demonstrated
   CEP : Engineering Problem referred to meets Complex Engineering Problem descriptor
   CEA : Engineering Activity referred to meets Complex Engineering Activity descriptor
   DoR x : Degree of Responsibility x = degree from A to E (See R-03-P, section 4.3)

   This is very important, and forms not complying to this, will not be assessed and will be returned to the applicant and can considerably delay your application.

4. Observe the length limits of 6 000 words maximum. Insert the word count (main column only) in the space provided. Diagrams, tables and other illustrations may be inserted in the main column but must not exceed a total more than two page heights. These are not included in the word count. The length limit (text and illustrations will be strictly enforced).

5. In the holistic self evaluation block, state in 200 words or less, why the information given above demonstrates that you are sufficiently competent to be registered as a Professional Engineer.

Engineering Council of South Africa (05/05/2014) **Form AN4**
R-03-IPD-PE

Pre-registration CPD-type Activity Report (IPD)				
Applicant's Name:				
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:

* Compulsory field

(05/05/2014) Form **AN5**

ENGINEERING COUNCIL OF SOUTH AFRICA
Private Bag X 691 ● BRUMA ● 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
E-mail: engineer@ecsa.co.za
Website: www.ecsa.co.za

ECSA

PROFESSIONAL ENGINEERS

....
Name of Referee **Date**

Address: .....

.....

.....

Dear Sir/Madam

I have applied to the Engineering Council of South Africa for **Registration as a Professional Engineer** and hereby request you to provide the Council with your evaluation of my experience and capabilities, on the basis of your personal knowledge thereof.

Please use the attached Forms AN6.1 & AN6.2 and consult the guideline for referees (Sheet AN6).

In making this request to you I acknowledge that the information which will be supplied by you to ECSA is of a confidential nature and that I have no right thereto.

Your co-operation and early despatch of the document **direct** to the Council would be appreciated, as it would expedite the processing of my application.

Thank you in advance for your co-operation.

Yours faithfully

....
Signature of Applicant **Name of Applicant** (Please print)

Address: .....

.....

..... **Postal Code:** .....

Telephone No: ..... **Cell No:** .....

Engineering Council of South Africa **(05/05/2014)** **Form AN6.1**
R-03-RRPE

REFEREE REPORT : PROFESSIONAL ENGINEERS

Please complete this form using type or print in black ink, after consulting the attached guideline (Sheet AN6).

The Engineering Council of South Africa agrees that it owes a duty of confidence to all referees in terms of the Promotion of Access to Information Act, 2000

1. **Name of Applicant:** **Address:**

2. **General Information:**

(a) My **personal** knowledge of the applicant's engineering training extends from _____

to _____ (month and year to the best of my memory).

(b) My association with the applicant was that of: (Please tick √ appropriate block)

Mentor *	Colleague	Supervisor	Employer	Other *(Describe)*

* If the association with the applicant was that of a mentor, provide the C&U No: _____

(c) Are you related to the applicant by birth or marriage? Yes _____ No _____

If yes, please state relationship _____

3. **Evaluation of the Applicant's Competence or state of Development:**

Outcomes	Rating	Reason
Group A: Engineering Problem Solving		
1: Define, investigate and analyse complex engineering problems		
2: Design or develop solutions to complex engineering problems		
3: Comprehend and apply advanced knowledge: principles, specialist knowledge, jurisdictional and local knowledge		
Group B: Management of Engineering Activities		
4: Manage part or all of one or more complex engineering activities		
5: Communicate clearly with others in the course of his or her engineering activities		

/...

(05/05/2014) Form **AN6.2**
R-03-RRPE

Group C: Impacts of Engineering Activity		
6: Recognise and address the reasonably foreseeable social, cultural and environmental effects of complex engineering activities		
7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her complex engineering activities		
8: Conduct engineering activities ethically		
Group D: Exercise judgement, take responsibility		
9: Exercise sound judgement in the course of complex engineering activities		
10: Be responsible for making decisions on part or all of complex engineering activities		
Group E: CPD		
11: Undertake professional development activities sufficient to maintain and extend his or her competence		

4. **Optional: Further comments** or additional information on the Applicant's ability to assume responsibility as a Professional Engineer, his/her competence, development and limitations:

_____

_____

5.

Viewed Holistically:		
The applicant has demonstrated competence to be registered as a **Professional Engineer**		

6. **Declaration by Referee:** I hereby confirm that I am conversant with the Council's requirements for registration as set out in Competency Standard R-02-PE, as well as the instructions on this referee report, and that I am prepared to substantiate my view expressed herein at an interview, should the Council require me to do so. I also confirm that I submit this information to ECSA on the understanding that it will be treated as confidential.

Name of Referee: _____ **Title of Position held:** _____

Qualifications: _____

ECSA Registration: _____ **Registration No:** _____

Employer: _____ **Tel/Cell. No:** _____

Signature of Referee: _____ **Date:** _____

Please post to:

⇨ **The Chief Executive Officer ● Engineering Council of South Africa**
Private Bag X691 ● BRUMA ● 2026

The Engineering Council of South Africa **(05/05/2014)** **Sheet AN6**

REFEREE GUIDELINE

for the completion of the Referee Report

Professional Engineers

1. AIM

The referee report is a necessary and supplementary document to the applicant's application for registration as a professional engineer with ECSA. The aim is to convey to the Council, on a confidential basis, the personal knowledge which the referee or the employer has of the applicant and in the process to make a reasoned evaluation of the applicant's competence.

2. GENERAL

A professional responsibility rests on the professional engineer to provide guidance to the applicant during his/her professional development. This task also includes the correct and accurate completion of the report. The Council attaches great value to the information that is supplied by the referee. There is no reason why internal mentors cannot act as referees or give assistance to referees or employers in respect of these aspects during the applicant's period of training.

The applicant has been advised that referees may be chosen in the following order of preference:

(a) Mentor
(b) Immediate supervisor
(c) Colleague at a higher or the same level, involved with the applicant's work
(d) Indirect supervisor
(e) Colleague not directly involved with the applicant's work
(f) Employer
(g) Client

If the applicant trained under a C&U, the registered mentor for the C&U concerned, **must** provide one of the referee reports. The Referee Report should be returned directly to ECSA by the referee. Referees are requested to have their assessments typed or to complete the report in legible block letters using black ink to ensure clear copying, since written assessments are frequently not very legible and to the detriment of the applicant.

3. MOTIVATION OF RECOMMENDATION FOR REGISTRATION

It is necessary that the referee or employer be able clearly and strongly to motivate his/her opinion in respect of the applicant's readiness for registration. The referee must, when supplying reasons, consider the minimum registration requirements, in other words the referee, himself/herself must be familiar with the content of the Council's Competency Standard R-02-PE.

4. EVALUATION

The level of competency required for registration as a professional Engineer is defined in the Competency Standards, document R-02-PE. Competency is defined in terms of eleven outcomes and two level definitions, namely *complex engineering problems* and *complex engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineer for at least one year.

As a referee, you are asked to rate the applicant against the outcomes as well as make a holistic evaluation. Please use the following scale:

CDC: The applicant consistently demonstrates competence
CDI: The applicant has demonstrated competence but not consistently
CNDD: The applicant has not demonstrated competence but is developing
CND: The applicant has not demonstrated competence
X: I am unable to comment

Please enter your comments in the third column, giving your reasons for assigning the particular rating. Where a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating.

5. CONFIDENTIALITY

ECSA undertakes to protect the confidentiality of all the information received from the referee.

Addendum A
(27 March 2012)

Voluntary Associations

recognised in terms of section 25(3) of the Engineering Profession Act, 2000 (Act No. 46 of 2000)

These Voluntary Associations applied for recognition in terms of section 36(1) of the Engineering Profession Act, 2000 (Act 46 of 2000) and were recognised by the Council in terms of Section 25(3) of the above Act.

One of the benefits of recognition is that registered members of a Recognised Voluntary Association (Categories A and B only) enjoy partial exemption from payment of their ECSA annual fees. Expiry date for these voluntary associations below is five (5) years from the date of recognition. These Acronyms appear in alphabetically order for ease of reference.

	Category A			
No	**Acronym**	**Name**	**Reference Number**	**Date Recognised**
1	**AeSSA**	Aeronautical Society of South Africa	VA A0022	11 August 2011
2	**AMMSA**	Association of Mine Managers of South Africa	VA A0031	24 January 2007
3	**AMRE**	Association of Mine Resident Engineers	VA A0032	30 November 2007
4	**CEASA**	Clinical Engineering Association of South Africa	VA A0040	26 August 2010
5	**COET**	The Chamber of Engineering Technology	VA A0001	19 October 2010
6	**CSSA**	Concrete Society of Southern Africa	VA A0019	11 August 2011
7	**ICMEESA**	Institution of Certificated Mechanical and Electrical Engineering	VA A0002	24 November 2010
8	**IEEE**	Institute of Electrical and Electronic Engineers South African Section	VA A0036	12 June 2008
9	**IMESA**	Institution of Municipal Engineering of Southern Africa	VA A0003	14 April 2011
10	**IPET**	Institute of Professional Engineering Technologists	VA A0004	19 October 2010
11	**LIASA**	Lift Inspectors Association of South Africa	VA A0026	15 March 2012
12	**NSBE**	National Society of Black Engineers	VA A0037	12 June 2008
13	**SAAMA**	South African Asset Management Association	VA A0025	14 May 2009
14	**SACEA**	South African Colliery Engineers' Association	VA A0005	11 August 2011
15	**SACMA**	South African Colliery Managers Association	VA A0029	24 January 2007
16	**SAIAE**	South African Institute of Agricultural Engineers	VA A0020	11 August 2011
17	**SAICE**	South African Institution of Civil Engineering	VA A0006	24 November 2010
18	**SAIChE**	South African Institution of Chemical Engineers	VA A0007	11 August 2011
19	**SAIEE**	South African Institute of Electrical Engineers	VA A0008	14 April 2011
20	**SAIIE**	Southern African Institute of Industrial Engineers	VA A0009	11 August 2011
21	**SAIMechE**	The South African Institution of Mechanical Engineering	VA A0021	14 April 2011
22	**SAIMENA**	South African Institute of Marine Engineers and Naval Architects	VA A0010	11 August 2011
23	**SAIMM**	South African Institute of Mining and Metallurgy	VA A0011	14 April 2011
24	**SAIRAC**	South African Institute of Refrigeration and Air-Conditioning	VA A0028	24 January 2007
25	**SAT**	Society for Asphalt Technology	VA A0043	26 August 2010
26	**STE**	Society of Telkom Engineers	VA A0035	12 June 2008

	Category B			
	Acronym	**Name**	**Reference Number**	**Date Recognised**
27	**SAFHE**	South African Federation of Hospital Engineers	VA B0023	11 April 2011
28	**SAID**	South African Institute of Draughting	VA B0033	30 November 2007
29	**SAIMC**	South African Institute of Measurement and Control	VA B0024	11 August 2011
30	**WISA**	Water Institute of Southern Africa	VA B0038	12 June 2008

	Category C			
	Acronym	**Name**	**Reference Number**	**Date Recognised**
31	**AMEU**	Association of Municipal Electricity Undertakings	VA C0027	11 August 2011
32	**BEPEC**	Built Environment Professions Export Council	VA C0044	24 November 2010
33	**CESA**	Consulting Engineers South Africa (*p.n.a. SAACE*)	VA C0013	14 April 2011
34	**IESSA**	Illumination Engineering Society of South Africa	VA C0012	11 August 2011
35	**INCOSE**	International Council of Systems Engineering (SA Chapter)	VA C0030	24 January 2007
36	**IQSA**	Institute of Quarrying Southern Africa	VA C0014	11 August 2011
37	**ITC**	Institute for Timber Construction	VA C0015	11 August 2011
38	**SAFA**	South African Flameproof Association	VA C0016	26 August 2010
39	**SAFCEC**	South African Federation of Civil Engineering Contractors	VA C0017	11 August 2011
40	**SAFPA**	South African Fluid Power Association	VA C0039	26 November 2008
41	**SAISC**	South African Institute of Steel Construction	VA C0018	11 August 2011
42	**SAIW**	South African Institute of Welding	VA C0034	30 November 2007
43	**SARF**	South African Road Federation	VA C0042	26 August 2010
44	**SASTT**	Southern African Society for Trenchless Technology	VA C0041	26 August 2010

Please note: Proof of membership must be submitted.

Engineering Council of South Africa **1/4/2014**

Application and Annual Fees
1 April 2014 to 31 March 2015
(Vat included)

Application Fees (VAT included)

1. Candidate Categories : See Note 4

Within one calendar year from the date of obtaining a qualification recognised for purposes of registration	**Later** than **one** calendar year after the date of obtaining a qualification recognised for purposes of registration
465.00	**1165.00**

2. Foreign Qualification Assessment : See Note 4

All applicants with foreign educational qualifications are required to have their qualifications assessed before applying for registration	**1165.00**

3. Professional & Registered Categories : See Note 4

For Applicants with uninterrupted registration as a **Candidate**	For Applicants not registered in any of the Candidate categories or with interrupted registration as a candidate
2330.00	**4660.00**

4. International Register :

Applicable only to persons already registered with ECSA who are applying for registration on the ECSA portions of the International Registers. This is a once-off fee. No annual fees are payable.	**2330.00**

Annual Fees (VAT included)

Candidates		Professional and Registered Categories	
Partial Exemption	**No Exemption**	**Partial Exemption**	**No Exemption**
771.00	**1161.00**	**1792.00**	**2932.00**

Notes:

(1) Annual fees are payable by all persons registered for as long as they are registered with ECSA. In the first year a pro rata annual fee from the date of registration to the end of March will be raised. Thereafter, annual fees are raised every year for the period April to March.

(2) The accepted methods of payment are either by cheque from a RSA bank, credit card (Visa or MasterCard only), EFT or deposit made at any Standard Bank branch into ECSA's bank account. **No cash will be accepted at ECSA's Offices**. **Banking details: Standard Bank Eastgate Branch, Branch Code 018505, Account No. 221285938**. Swift code SBZAZAJJ. **Please do not send cheques by post**. ECSA will take no responsibility for cheques lost in the post or intercepted and fraudulently banked in another party's bank account. All persons making payment by EFT or direct deposit must ensure that the registration/application number is quoted in the "beneficiary reference number" field. If wishing to supply the name as well, please ensure that the number is quoted first to prevent part of the number being cut off at the end. If payments are made in advance of an application number having been issued to you, quoting your ID or Passport number will suffice.

(3) If an application for registration is withdrawn before it is considered by a committee, 50% of the application fee will be forfeited to cover administrative expenses. If the application has been considered by a committee and rejected, the full application fee is forfeited.

(4) No applications for foreign qualification assessment or for registration will be accepted until payment for the full application fee has been received.

(5) Persons registered in the Candidate category for more than six (6) years pay the same annual fees as persons registered in the Professional category.

(6) Appeals: When a person wishes to appeal a decision of ECSA, a fee equalling twice the amount of the application fee will be payable.

(7) Partial or full exemptions:

a. Persons applying for registration with ECSA after having had their Foreign Qualification successfully evaluated will receive a 50% of their Foreign Qualification fee as a discount against their registration application fee.

b. Registered persons who are members of Voluntary Associations (VAs) may qualify for a partial fees exemption from ECSA. Persons may view the list of acknowledged VAs on ECSA's website, or enquire with ECSA's call centre. All persons who are members of VAs in Categories A or B of the list will qualify for partial exemption of annual fees on condition that (1) membership to the VA occurs by 30 May of that year and (2) persons are in good standing with their Vas. Kindly forward proof of membership to accounts.

c. Registered persons between the age of 55 and 70 who are retired and who do not receive income from work connected to the engineering profession amounting to more than 30 hours per month or 300 hours per annum qualify for a discounted annual fee. They may enquire from Accounts@ecsa.co.za how to apply for the exemption should they have retired before 31 May.

d. Registered persons who are overseas on a permanent basis (SADC countries excluded) may qualify for a discounted annual fee. They may enquire from Accounts@ecsa.co.za how to apply for the exemption.

e. Persons over 70 are exempted fully from annual fees.

f. Full-time post graduate students are fully exempt from annual fees. They need to apply every year in April for continued exemption by supplying proof from their tertiary institution that they are still full time students.

g. An Early bird discount is granted to Registered persons if their annual fees for April to March is paid on or before 30 June. The discount is R50 for candidates and R100 for Professionals, VAT inclusive.

h. The onus is upon the Registered person to apply with ECSA's Accounts department for any exemption if not automatically granted. Backdated exemptions for previous years will not be granted. Persons who only qualify for exemption after 31 May, i.e. reaching the age of 70, going on retirement or becoming a member of a recognised VA, will only qualify for the exemption in the following year.

(8) Registered persons who are unemployed may enquire from Accounts@ecsa.co.za for extension of the payment of their annual fees. Exemption will be considered upon request if the Registered person is still unemployed at the end of March every year.

(9) Registered persons should be aware of the fact that their registrations will not be cancelled if they have not been able to obtain their CPD points within the required time. Should they on the other hand not pay their annual fees in time, and they have not made any arrangements with Accounts for an extension, their registrations will most definitely be cancelled. CPD queries must be taken up with CPD@ecsa.co.za.

(10) Once the registration of Registered persons is cancelled due to non-payment, and reinstatement is requested within twelve months from cancellation, an admin fee of R450, in addition to the annual fees in arrears, is payable. After one year of being cancelled persons will need to re-apply for registration. The normal application fees would then be raised in addition to the annual fees still owing. The re-application process is fortunately much simpler than the original process.

(11) Persons who will be residing outside the RSA borders for a year or longer should advise Accounts of their overseas postal address in order for VAT to be removed from their invoice. Invoices will still be emailed to that person.

(12) Annual fees cannot be frozen whilst working abroad. The Registered person has two choices: continue paying annual fees whilst abroad; or request cancellation of registration. If the Registered person is planning to return to the RSA after a few years it would probably be cheaper and convenient not to cancel his or her registration. Should a person cancel his or her registration, an application for re-registration and the application fee awaits that person when wishing to re-register. In addition to that, if the person wishes to retain his or her old registration number, all annual fees from date of cancellation up to the current year are payable. If the person opts for a new registration number, he or she would only be required to pay the application fee, plus any possible fees owing for the year of cancellation and the current year's annual fee.

(13) Registered persons, if their employer is willing to pay ECSA's annual fee for their employees, should advise Accounts of their employer's official name and address plus VAT number for inclusion on the invoice.

(14) Annual fees invoices can be sent to the employer directly for payment. If that is the arrangement, the Registered person will not receive an invoice. He or she would receive a statement of account, as evidence of the charge raised against the employer. Should the Registered person not agree with the charge, he or she should advise their employer not to pay the invoice. The Registered person must take up the wrong charge with Accounts and request a correction. Once the problem is resolved, Accounts will issue a revised invoice. Registered persons should not present the statement of account to the employer for payment. Employers do not pay on statement. They should already have the invoice.

(15) The fee for persons between the ages of 55 and 70 who have been granted the retired dispensation will be R191.00 (VAT inclusive).

ENGINEERING COUNCIL OF SOUTH AFRICA

Private Bag X 691
BRUMA 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
Email: zimasa@ecsa.co.za
Website: www.ecsa.co.za

Waterview Corner, 1st Floor,
2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

DISABILITY REGISTER

Disability is defined as: "Persons with disabilities including those who have long-term physical, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others".

Registration Number: _____

Name & Surname: _____

Do you have any disability (Please tick):

Yes	No

If yes, state nature of Disability:

_____

_____

NB: Completion of this form is necessary in order to accurately reflect disability statistics in terms of Government Policy.

ENGINEERING COUNCIL OF SOUTH AFRICA

(17/07/2014) **Form B1.1**

Private Bag X 691
BRUMA 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
Email: engineer@ecsa.co.za
Website: www.ecsa.co.za

Waterview Corner, 1st Floor,
2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

ECSA

Office Use
Ref.:

APPLICATION FORM

REGISTRATION AS A PROFESSIONAL ENGINEERING TECHNOLOGIST

NB: Please consult the Information Sheets (Sheets B1.1 & B1.2) before completing this Application.

1. General Information:

Surname:				**First Names:**			**PHOTOGRAPH** *(Passport-type. Please paste - do not staple)* *Alternatively, insert electronically in JPEG or similar format*
Date of Birth:				**Identity No:** *or*			
***Gender**		***Race Group**	**Asian:**	**Black:**	**Passport No. and Country:**	**Country of normal residence:**	
M:	**F:**		**Coloured:**	**White:**			

Home Address:	**Postal Address:**	**Name & Address of present Employer:**
Tel. No. (Home): **Tel. No. (Work):** *(include area codes)* **Cell No.:** **E-mail:**	**Title of Position held:**	**Tel. No. (Employer):** **Fax No.:** (include area codes) **E-mail:**

*Completion of this section is necessary to accurately reflect equity statistics in terms of Government Policy. Please cross applicable blocks.

2. Qualifications: (All qualifications at tertiary level) (List of subjects to be provided on Form B1.3 AR)

Educational Institution	Qualification	Attendance from	Attendance to	Date of final examination	*Office use*

NB: Kindly initial this page in the presence of a Commissioner of Oaths / Justice of Peace.

Applicant: .....

Commissioner Of Oaths/ Justice Of Peace: .....

3. Previous / Current Registration or Application Details: (eg. Candidate Engineering Technologist, Registered Lift Inspector, etc.)

Type	Category	Number	Date
Previous Registration:			
Current Registration:			
Previous Application:			

4. Membership of Voluntary Associations recognised in terms of Act No 46 of 2000 (or other):
(If more space is needed, please supply information separately.)

Name of Association / Institute / Society	Membership grade and date accepted	Number of years	Office held

5. Application Fee: **(See item 5 of the Information Sheet)**

My Application fee of **R** (cheque) is transferred electronically.

6. Referees:

(1)	(2)	(3)
E-mail: **Tel No:**	**E-mail:** **Tel No:**	**E-mail:** **Tel No:**

7. Declaration:

I, (full names)
hereby apply for **Registration as a Professional Engineering Technologist** and undertake to abide by all the provisions of the **Engineering Profession Act, 2000 (Act No. 46 of 2000)** and any **Rules** published thereunder, including the **Code of Professional Conduct**. I declare that Section 19(3)(a) of the Act does not preclude me from registration. I solemnly declare that, to the best of my knowledge, all the information contained herein is true.

Signature: _____

Sworn to/Affirmed before me at _____

on this the _____ day of _____(month & year).

Commissioner of Oaths/
Justice of Peace: ..... *(Commissioner's stamp)*

Office Use Only

Application fee: R _____

Received by: _____ Date: _____

(Council's stamp)

Engineering Council of South Africa (17/07/2014) **Form B1.3 AR**

Academic Record

Detailed information on

TERTIARY ENGINEERING QUALIFICATIONS

As part of the Application for Registration as a Professional Engineering Technologist

Name of Applicant:

Name of Qualification:

All subjects passed	Year Obtained	Marks obtained *(if available)*
Extra subjects passed for incomplete qualifications		
	Total Credits	

Signature of Applicant **Date**

Engineering Council of South Africa (17/07/2014) **Sheet B1.1**

Information Sheet for Applicants Applying for Registration as a Professional Engineering Technologist

This document briefly sets out the information required by the Registration Committee to evaluate applications.

A. General:

- **All applicants should read, understand and provide all the information/documentation required in Sheets B1.1, B1.2, B2.1, B2.2, B4 and B5 of this application form. If the prescribed requirements are not met in the correct format, it is unlikely that applicants will be registered.**
- The onus is on the Applicant to provide all the evidence for consideration of the Council. The evidence must demonstrate/show competency in accordance with the requirements of Policy on Registration of Persons in Professional Categories document R-01-P, and Criteria and Processes for Recognition of Educational Qualifications for Professional Categories document E-17-P.
- Your application will only be considered by the Council if the following documents are submitted:
  - ⇒ **Completed Application Form (B1.1 & B1.2).**
  - ⇒ **Certified copies of qualifications.**
  - ⇒ **Completed detailed information on Qualifications (Form B1.3 AR).**
  - ⇒ **Completed Training and Experience Report (Forms B2.1 TER) and Training and Experience Outline (Form B2-1 TEO) if applicable, for each experience period and a Training and Experience Summary (Form B2.2 TES).**
  - ⇒ **Completed recent Engineering Report (Form B2.3 ER).**
  - ⇒ **Completed Educational Development Report (Form B18 EDR), if applicable.**
  - ⇒ **Referee Reports, one from a supervisor, each duly completed. (Form B4 REF).**
  - ⇒ **Completed Initial Professional Development Report (Form B5 IPD).**
- All supporting documentation must be clearly identified. If you are unable to complete any of the sections, please explain the reasons in a covering letter.
- In completing all paper forms use type or print clearly in **black ink** and **minimum font size 10** to ensure clear copying. Forms may not be substituted but may be photocopied or recreated in electronic format.
- It is imperative to present records of only the most significant work and achievements. The Registration Committee considers that an application of fifty (50) A4 pages or less, is sufficient to assess an applicant and that longer presentations may not be to the applicant's advantage.
- Your application for registration will only be considered when all referee reports (Form B4 REF) have been received by the Council. If the referee reports do not reach the Council within a reasonable time, you will be notified accordingly. You will then be expected to contact the referees.
- If you are in doubt regarding any aspects please contact the Council's offices.
- The registration process may take **6 (six) months** or longer to complete and each applicant will be informed of the Council's decision as soon as it becomes available.
- Information regarding the progress of any application will not be given telephonically.

Please note that it is your responsibility to ensure that all reports reach Council's offices timeously.

For registration as a Professional Engineering Technologist applicants must have the benchmark academic qualification and three years of approved experience as a technologist, of which at least a minimum of one year must be in a position of taking full engineering responsibility. If the applicant does not have the benchmark academic qualification (BTech), their application will be considered by the **alternate route**. The difference must be made up by extended periods of both engineering experience and responsibility. The exact periods will depend upon the level of the qualifications held by the applicant. It must be clearly understood that the work which the candidates are doing or have done, as well as the submission of the completed **Educational Development Report (Form B18 EDR)** and the **Initial Professional Development Report (Form B5 IPD)**, are important factors in determining registrability.

B. The Application Form:

The following information is given to assist applicants to complete this form – the numbers refer to the equally numbered sections of the Application Form.

1. **General Information:** Ensure that all personal details are correct. A recent passport type photograph of the applicant is required.

2. **Qualifications:**

- Original certified copies of your qualification certificate(s) must be submitted. (They must be certified by a Commissioner of Oaths or Justice of Peace. A Police Officer or Post Master will usually be able to help you.)

- If your documents are not in English, please supply certified translations.
- The benchmark academic qualification required by Council for registration is a BTech degree awarded by a South African University of Technology or Comprehensive University.

3. Previous / Current Registration or Application Details:

If you have previously applied for registration in any category or were previously registered but your registration was cancelled for any reason, please provide category and previous registration number in relevant block. If you are currently registered in another category, also complete the appropriate block.

4. **Membership of recognised Voluntary Associations:**

A list of associations is attached as **Addendum A.** Proof of current membership of such association will qualify you for a reduction in your annual fee should your application be successful.

Persons who have applied for membership of any of the above-mentioned associations, but who have not yet been accepted, must indicate this in the appropriate block. Membership of other institutes/societies (not recognised) may be stated, but this does not qualify the applicant for a reduction in the annual fee.

5. Application and Annual Fees:

Only cheques must accompany your application form, as **no cash or postal orders will be accepted**. If you do not have a cheque account, you may deposit cash at any Standard Bank into ECSA's account. Please contact our Accounts Department at (011) 607-9530/1/2/3 or Reception at (011) 607-9500 to obtain our banking details. Alternatively you may make payment **(1)** via the internet, or **(2)** you may ask your bank for a bank cheque to be made out to ECSA, **(3)** contact your bank's telephone banking division to make payment into ECSA's account or **(4)** by credit card by phoning our Accounts Department. When making the deposit please ensure that your name and initials are entered in the field named "Depositor's name or reference number" and attach a copy of the proof of deposit to your application form. Refer to separate sheet regarding fees payable, visit ECSA's website at http://www.ecsa.co.za, click on **"Finance"** or contact the Council's offices at (011) 607-9500 to determine the current fee.

6. Referees:

Each applicant must, with the permission of the persons concerned, supply the Council with the names and addresses of three referees, who have personal knowledge of the applicant's work. Referees must be registered with ECSA as a Professional Engineering Technologist or a Professional Engineer, and in exceptional circumstances a Professional Certificated Engineer or a Professional Engineering Technician, **of which one must be a direct supervisor**. In case of the supervisor not being registered with ECSA a forth registered referee must be provided.

Use Form B3 for formal correspondence with each referee, and enclose copies of the referee report (Form B4 REF) and the guideline for referees (Sheet B4). It is suggested that you provide each referee with an addressed envelope with prepaid postage for the referee to forward the report direct to the Council.

7. Declaration: Section 19(3)(a) of the Engineering Profession Act, 2000 (Act No. 46 of 2000) reads:

"*Despite subsection (2), the Council may refuse to register an applicant -*

(i) if the applicant has been removed from an office of trust on account of improper conduct;
(ii) has been convicted of an offence in the Republic, other than an offence committed prior to 27 April 1994 associated with political objectives, and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iii) if the applicant has, subject to paragraph (b), been convicted of an offence in a foreign country and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iv) if the applicant is declared by the High Court to be of unsound mind or mentally disordered, or is detained under the Mental Health Act, 1973;
(v) for as long as the applicant is disqualified from registration as a result of any punishment imposed on him or her under this Act;
(vi) if the applicant is an unrehabilitated insolvent whose insolvency was caused by his or her negligence or incompetence in performing work falling within the scope of the category in respect of which he or she is applying for registration."

Note that your application must be sworn to or affirmed before a Commissioner of Oaths or a Justice of Peace. Your attention is drawn to the initialling required at the bottom of the first page of the Application Form.

Page No. of

This form must be used for applicants who have completed and are submitting a report for each phase of training and work experience from the time of meeting the education requirements to application for registration. Consult the Information Sheet (Sheet B2) before completing this report.

Engineering Council of South Africa

Training and Experience Report **Form B2.1 TER** (17/07/2014)

As part of the Application for Registration as Professional Engineering Technologist

Applicant's Name				**Applicant's Signature**	**Date:**
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position held:**	
Employer's Name and Address for this period: (This is the employer and site at which the work took place, e.g. the site the applicant has been seconded to).				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** / **No**
				If yes, provide number of CU:	**No:**
Supervisor's Name and Address:				**Supervisor's Signature:**	
ECSA Registration No. (If not registered, qualify):				**Date:**	

Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)	
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc)	

Organogram showing supervisor (person signing this report), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions, qualification and registration (if any)*. Please do not colour in blocks.

Report: (Write in proper paragraphs in the first person singular in less than 430 words)	**Refer to Engineering Report Outcome**
Nature of training or experience (stated in 20-30 words)*	Outcomes: Criteria:
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 120-150 words)*	Outcomes: Criteria:
Management of materials, machines, manpower, methods or money, contracts (stated in 40-50 words)	Outcomes: Criteria:
Interaction with clients, stakeholders and other disciplines (stated in 40-50 words)	Outcomes: Criteria:
Health and safety considerations; hazards and environmental considerations; other legislation (stated in 40-50 words)*	Outcomes: Criteria:

Describe role and responsibility (in 80-100 words)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

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This form must be used for an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at a degree of engineering responsibility E (Performing) in detail TER format .F or the remaining periods or groups of related periods the report can be in this TEO format. Consult the Information Sheet (Sheet B2) before completing this report.

Engineering Council of South Africa

Training and Experience Outline **Form B2.1 TEO** (17/07/2014)

As part of the Application for Registration as Professional Engineering Technologist

Applicant's Name		**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position(s) held:**
Employer's and Supervisor Name and Address:		**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
ECSA Registration No. (If not registered, qualify):		**If yes, provide number of CU:**	**No:**	

Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)	
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc	

Organogram identifying yourself, your supervisor and persons supervised*. Please do not colour in blocks.

Outline Report: (Use bulleted form, using 10-13 bullets)	**Refer to Engineering Report Outcome**
Nature of training or experience in the period(s) stated in bullet format*	Outcomes: Criteria:
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in bullet format)*	Outcomes: Criteria:
Management responsibilities (stated in bullet format)	Outcomes: Criteria:
Interaction with clients, stakeholders and other disciplines (stated in bullet format)	Outcomes: Criteria:
Legal and impact analysis (stated in bullet format) *	Outcomes: Criteria:

Describe role and responsibility (stated in bullet format)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Engineering Council of South Africa **Form B2.3 ER** (17/07/2014)

Engineering Report

Use this form to submit a report in about 100 words per criterion under Outcomes 1 to 11 below on recent engineering work to which you have made a significant contribution. The report may cover conceptualisation, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing or planning at a broadly-defined level. Please cross-refer the item reported upon to the relevant evidence in the Training and Experience Report (B2.1 TER) or Training and Experience Outline (B2.1 TEO). Provide sample relevant calculations and drawings as an addendum.

Use Appendix A of the Discipline Specific Training Guide R-05-PT to assist in the interpretation of the criteria

Name of Applicant:

Consult the Information Sheet (Sheet B2) before completing this report.

Area of Employment: (<15 words)	
Dates Undertaken:	
Engineering brief and objective: (<30 words)	
Environment: (Industry; Laboratory; Theory; Simulation) (<15 words)	
Short Summary: (State engineering problems; solutions in < 30 words)	
Budgets®<10 words)	

Broadly-defined engineering problems *have the following characteristics:*

a) require coherent and detailed engineering knowledge underpinning the applicable technology area;
and one or more of:
b) are ill-posed, under- or over specified, requiring identification and interpretation into the technology area;
c) encompass systems within complex engineering systems;
d) belong to families of problems which are solved in well-accepted but innovative ways;
and one or more of:
e) can be solved by structured analysis techniques;
f) may be partially outside standards and codes; must provide justification to operate outside;
g) require information from practice area and sources interfacing with practice area that is complex and incomplete;
h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties;
and one or both of:
i) requires judgement in decision making in practice area, considering interfaces to other areas;
j) have significant consequences which are important in practice area, but may extend more widely

Broadly-defined engineering activities (BDEA) have several of the following characteristics:

a) *Scope* of practice area is linked to technologies used and changes by adoption of new technology into current practice;
b) Practice area is located within a wider, complex *context,* requires teamwork, has interfaces with other parties and disciplines;
c) Involve the use of a variety *resources,* including people, money, equipment, materials, technologies;
d) Require resolution of occasional problems arising from *interactions* between wide-ranging or conflicting technical, engineering or other issues;
e) Are *constrained* by available technology, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;
f) Have significant *risks* and *consequences* in the practice area and in related areas.

Outcomes and Criteria		Cross-reference to B2.1 TER or B2.1 TEO
Outcome 1: Define, investigate and analyse broadly-defined engineering problems.		
1.1 State how you performed or contributed in defining engineering problems leading to an agreed definition of the problems to be solved.		Period No:
1.2 State how you performed or contributed in investigating engineering problems including collecting, organising and evaluating information.		Period No:
1.3 Describe how you performed or contributed in analysing engineering problems, using conceptualisation, justified assumptions, limitations and evaluation of results.		Period No:
Outcome 2: Design or develop a solution to broadly-defined engineering problems.		
2.1 Describe how you designed or developed solutions to broadly-defined engineering problems.		Period No:
2.2 Indicate how you systematically synthesised solutions and alternative solutions or approaches to the problem by analysing designs against requirements, including costs and impacts on outside parameters. (requirements).		Period No:
2.3 State your part in the drawing up of detailed specification requirements and design documentation for implementation to the satisfaction of the client.		Period No:
Outcome 3: Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures and processes, systems or methodologies and those specific to the jurisdiction in which you practice.		
3.1 State what engineering principles, practices, technologies, including the application of BTech theory you apply in your practice area.		Period No:
3.2 Indicate your working knowledge of areas of practice that interact with your practice area to underpin team work.		Period No:
3.3 Describe your applied related knowledge of finance, statutory, safety and management.		Period No:

Outcome 4: Manage part or all of one or more broadly-defined engineering activities.		
4.1 State how you managed yourself, people, work priorities, processes and resources in broadly-defined engineering work.		Period No:
4.2 State your role in planning, organising, leading and controlling broadly-defined engineering activities.		Period No:
4.3 State your knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships.		Period No:
Outcome 5: Communicate clearly with others in the course of your engineering activities		
5.1 Demonstrate your ability to write clear, concise, effective technical, legal and editorially correct reports.		Period No:
5.2 Indicate your ability to issue clear instructions to stakeholders using appropriate language and communication skills.		Period No:
5.3 State any oral presentation you have made using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose.		Period No:
Outcome 6: Recognise and address the reasonably foreseeable social, cultural and environmental effects of broadly-defined engineering activities.		
6.1 Describe your ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural and environmental considerations.		Period No:
6.2 State what measures you have taken to mitigate the negative effects of engineering activities.		Period No:
Outcome 7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her broadly-defined engineering activities.		
7.1 State where you have identified applicable legal and regulatory requirements including health and safety requirements for the engineering activity.		Period No:
7.2 State in what circumstances you have assisted in, or demonstrated awareness of the selection of save and sustainable materials, components and systems and have identified risk and applied risk management strategies.		

Outcome 8: Conduct engineering activities ethically.		
8.1 Confirm that you are conversant and operate in compliance with ECSA's Rules of Conduct for registered persons.		Period No:
8.2 State how you identified ethical problems, the affected parties and select the best solution to resolve the problem.		Period No:
Outcome 9: Exercise sound judgement in the course of broadly-defined engineering activities.		
9.1 Within the application of your technologies and their interrelationship to other disciplines and technologies, state what judgement you exercised in arriving at a conclusion.		Period No:
9.2 State what factors you took into consideration bearing in mind, risk, consequences in technology application and affected parties.		Period No:
Outcome 10: Be responsible for making decisions on part or all of broadly-defined engineering activities.		
10.1 In discharging your responsibilities for significant parts of one or more activities, please state what engineering, social, environment and sustainable development you took into consideration.		Period No:
10.2 State what advice you sought from a responsible authority on matters outside your area of competence.		Period No:
10.3 State what academic knowledge of at least BTech level combined with past experience you used in formulating your decisions.		Period No:
Outcome 11: Undertake professional development activities sufficient to maintain and extend his or her competence.		
11.1 State what strategy you have independently adopted to enhance your own professional development.		Period No:
11.2 State your philosophy in regard to your professional development.		Period No:
Evidence of your competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form B5.		

Signature of Applicant: _____ **Date:**

Signature of Mentor / Supervisor: _____

Name of Mentor / Supervisor (printed): **Tel. No.:**

Engineering Council of South-Africa

Training and Experience Summary **Form B2.2-TES** (17/07/2014)

Surname and Initials:

First complete a Training and Experience Report Form B2.1 TER, or a Training and Experience Outline Form B2.1 TEO for each period.

No	From	To	Weeks	Work Details		Responsibility A-E
1				Employed by:	Post held:	
				Type of Work:		
2				Employed by:	Post held:	
				Type of Work:		
3				Employed by:	Post held:	
				Type of Work:		
4				Employed by:	Post held:	
				Type of Work:		
5				Employed by:	Post held:	
				Type of Work:		
6				Employed by:	Post held:	
				Type of Work:		
7				Employed by:	Post held:	
				Type of Work:		
8				Employed by:	Post held:	
				Type of Work:		
9				Employed by:	Post held:	
				Type of Work:		
n				Employed by:	Post held:	
				Type of Work:		

When an applicant is not engaged in training and experience towards registration, the period must be reflected as follows:

x				Employed by: ***Not active***	Post held:	
				Type of Work: ***Insert reason here***		
Total years, months:						

Signature of Applicant: _____ **Date:** _____

Engineering Council of South Africa (17/07/2014) **Sheet B2.1**

Information Sheet

for completion of the

Training and Experience Report or Outline / Engineering Report / Education Development Report

1.1 The Purpose of the Training and Experience Report (Form B2.1 TER) or Outline (Form B2.1 TEO) is to provide a factual record of the main periods in the applicant's development from graduation to applying for registration and to identify the periods where the applicant took responsibility at the required level, providing evidence of meeting the outcomes required at the same time. Reference must be made to the Engineering Report (Form B2.3 ER) and the specific outcome met (Refer to 2.1 below).

1.2 In general, an applicant must complete and submit a Training and Experience Report (TER) for each phase of training and work experience from the time of meeting the education (BTech degree in Engineering) requirements to application for registration. TER(s) with total duration covering at least one year working at the degree of engineering responsibility E (Performing) must be submitted. Such periods need not be contiguous and need not include the last period reported.

- Use a separate form for each experience period and approximately 430 words per TER (or 13 bullets per TEO).
- Number the periods in chronological order, which may not overlap.
- Cover the period from first graduation to date of application.
- Provide full details of work done during each period indicating your personal role and level of responsibility. This work will typically be of a higher level than an engineering technician, or a specified category, like lifting machinery inspector, medical equipment maintainer, etc. Designate the appropriate experience applicable to meeting the required outcome and criterion detailed in the Engineering Report (Form B2.3 ER) in the column provided.

An experience period ends when:

- your work environment has changed, eg. when a major task or project has been completed;
- your type of work has changed;
- your responsibilities or level of function have changed (for instance, as in a promotion);
- you have changed employer;
- your experience is interrupted (for instance by study or prolonged illness).

1.3 It is essential that the information supplied relates to engineering. Other activities which pertain indirectly to engineering may be considered but measurement of quantities, attendance at meetings and unrelated functions are not relevant. Management activities, where mentioned, must contain predominantly engineering content.

1.4 The Training and Experience Report (Form B2.1 TER) must be set out in a way that clearly shows engineering knowledge applied (ultimately at BTech level) and responsibility carried by the applicant. It is incumbent on applicants to select and describe projects and tasks, which show their level of engineering knowledge and experience and clearly illustrates the applicant's own role and strategies devised to make these projects successful.

1.5 All engineering experience, **not only experience obtained after obtaining your highest qualification**, must be submitted. For alternate route applicants, the experience reports must cover at least the last 10 years (if applicable).

1.6 The description of your work should highlight special skills and expertise that you used in engineering practice. Mention particular engineering procedures and methods, which you followed and how you applied specialised knowledge and expertise to solve problems in the course of your work.

1.7 The use of obscure jargon and acronyms (without index) which relates to highly specialised fields is not acceptable and may confuse the issue and result in requests for clarification with consequent delays in processing applications.

1.8 Describe any unique engineering development that you invented/developed and patents that you may hold. Also mention any engineering awards, commendations and prizes received and the dates these were received.

1.9 Please include an organogram for each experience period showing two levels above and two levels below you (if present) to indicate your degree of responsibility and the names, qualifications, job titles and registration categories of the persons indicated.

1.10 Representative sample copies of calculations, drawings or other relevant documents pertaining strictly to engineering work done by you, could be included only if essential to demonstrate your competence. Representative sample copies are adequate (not full documents). The documents must certify that you personally performed the work. Note that these documents should be A4 size and of a quality that would make clear copies, and that **your complete application, including these documents, should not be more than 50 pages.**

1.11 Success in attaining registration is considered to be evidence of the quality of the training programme. Since the workplace learning programme is not subject to formal quality assurance, registration as a candidate and employment in a candidacy programme is advisable. In this instance the Commitment and Undertaking of your employer, defining the process to build up competence to the required level, must be indicated and the CU number provided.

1.12 The requirement in 1.2 may be relaxed in the case of an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at a degree of engineering responsibility E (Performing) in detail in the TER format that are signed by the supervisor. Such periods need not be contiguous and need not include the last period reported. Such an applicant may submit Training and Experience Outlines (Form B2-1 TEO) for the remaining periods or groups of related periods, where a supervisor's or employer's signature is not required.

1.13. The training and experience periods and periods of interruption must also be noted in the Training and Experience Summary (Form B2.2 TES). Ensure that each Form B2.1 TER is signed (verified) by your relevant employer or supervisor and that both TERs and TEOs are signed by yourself. If you cannot obtain the supervisor's signature, or if you are the owner of your own business, please annotate accordingly in the appropriate block and submit an affidavit to the effect that the information provided is true and correct and give reasons why the supervisor signature cannot be obtained. Note that the Commissioner of Oaths stamp and signature is required on each experience report that is not signed by the supervisor.

2.1. Use Form B2.3 ER to submit a recent **engineering report, using at least BTech level knowledge at a degree of responsibility E,** of 2800 to 3000 words in total (100 words per criterion) on major engineering work completed by yourself.

Under each outcome criterion required the following evidence must be provided:

- The reports must be written for the purpose of your application. While the report may be on major engineering work or a series of projects they are reports in which you reflect on your **engineering activities** that demonstrate the required level of competence and the **engineering responsibility** delegated to you.

- The engineering report must be of a nature that is representative of the engineering work done illustrating your own role and strategies devised to make the tasks successful. You should indicate your level of delegated specific engineering responsibility, independent judgement and decision-making. Factors such as performance, economic evaluation, environmental and safety considerations, complexity of the task, interdisciplinary team working, financial implications and duration of the work have to be included against the applicable criterion. In addition the report should include the extent of your contribution to the engineering process such as conceptualisation, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing and planning.
- In the column provided, cross-refer each of your outcome criterion report to the applicable Training and Experience Report (TER) or Training and Experience Outline (TEO) in support of your claim to competence.
- Use Appendix A of the Discipline Specific Training Guide R-05-PT to assist in the interpretation of the outcome criteria
- Your supervisor must sign the report.

3.1 The minimum academic qualification required for registration as a professional engineering technologist is an ECSA accredited BTech Degree in Engineering or equivalent obtained from a South African University of Technology or Comprehensive University. Applicants not in possession of this qualification must submit a completed **Educational Development Report** using **Form B18 EDR**.
Your attention is drawn to the signatures required on the last page of the Education Development Report.

(17/07/2014) **Form B3**

ENGINEERING COUNCIL OF SOUTH AFRICA
SUID-AFRIKAANSE RAAD VIR INGENIEURSWESE
Private Bag X 691 ● BRUMA ● 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
E-mail: engineer@ecsa.co.za
Website: www.ecsa.co.za

ECSA

PROFESSIONAL ENGINEERING TECHNOLOGISTS

Name of Referee **Date**

Address:

Dear Sir / Madam

I have applied to the Engineering Council of South Africa for **Registration as a Professional Engineering Technologist** and hereby request you to provide the Council with your evaluation of my experience and capabilities, on the basis of your personal knowledge thereof.

Please use the attached Form B4 REF and consult the guideline for referees (Sheet B4).

In making this request to you I acknowledge that the information which will be supplied by you to ECSA is of a confidential nature and that I have no right thereto.

Your co-operation and early despatch of the document direct to the Council would be appreciated, as it would expedite the processing of my application.

Thank you in advance for your co-operation.

Yours faithfully

.....
Signature of Applicant **Name of Applicant** (Please print)

Address:

Postal Code:

Telephone No: **Cell No:**

Engineering Council of South Africa **Referee Report on an Application for Registration as Professional Engineering Technologist**	**Form B4-REF** (17/07/2014)

Applicant's Name					
Referee Name:		**ECSA Registration Category (e.g. PrTechEng):**		**Registration Number:**	
Referee Employer:		**Referee Cell Phone No:**			
		Referee E-mail address:			
My personal knowledge of the applicant's achievements extends:		**From:**		**To:**	
My personal relationship with the applicant is: (Mark one block)		**Unrelated**	**By birth**	**By marriage**	
My professional relationship with the applicant is, for the period shown: (Mark one block)		**Mentor**	**Supervisor**	**Employer**	**Colleague**	**Client**

Evaluation of the Applicant's Competence or state of Development
The level of competency required for registration as a Professional Engineering Technologist is defined in the Competency Standards, document R-02-PT. Competency is defined in terms of eleven outcomes and two level definitions, namely *broadly-defined engineering problems* and *broadly-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineering Technologist (E) for at least one year.

As a referee, you are requested to rate the applicant against the outcomes as well as make a holistic evaluation.
Please use the following scale:

CDC: The applicant consistently demonstrates competence
CDI: The applicant demonstrated competence but not consistently
CNDD: The applicant has not demonstrated competence but is developing
CND: The applicant has not demonstrated competence
X: I am unable to comment

Please enter your comments in the third column, giving your reasons for assigning the particular rating. When a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating

Outcomes	Rating	Reason
Group A: Engineering Problem Solving		
1. Define, investigate and analyse broadly-defined engineering problems		
2. Design or develop solutions to broadly defined engineering problems		
3. Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices		
Group B: Management of Engineering Activities		
4. Manage part or all of one or more broadly-defined engineering activities		
5. Communicate clearly with others in the course of his or her engineering activities		
Group C: Impacts of Engineering Activity		
6. Recognise and address the reasonable foreseeable social, cultural and environmental effects of broadly defined engineering activities		
7. Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her broadly-defined engineering activities		
8. Conduct engineering activities ethically		
Group D: Exercise judgement, take responsibility		
9. Exercise sound judgement in the course of broadly-defined engineering activities		
10. Be responsible for making decisions on part or all of broadly-defined engineering activities		
Group E: IPD		
11. Undertake professional development activities sufficient to maintain and extend his or her competence		

Optional: Further comments or additional information on the Applicant:

Viewed Holistically:		
The applicant has demonstrated competence to be registered as a **Professional Engineering Technologist**		

Declaration by Referee: I declare that the information provided is correct to the best of my knowledge. I hereby confirm that I am conversant with the Council's requirements for registration as set out in the Competency Standards, document R-02-PT as well as the instructions on this referee report, and that I am prepared to substantiate my view expressed herein at an interview, should the Council require me to do so. I also confirm that I submit this information to ECSA on the understanding that it will be treated as confidential. I understand that the information will not be disclosed by ECSA unless required by law.

Name of Referee: **Title of Position held:**

Signature of Referee: _____ **Date:**

Please post to:

⇨ **The Chief Executive Officer ● Engineering Council of South Africa**
Private Bag X691 ● BRUMA ● 2026

Engineering Council of South Africa (17/07/2014) **Sheet B4**

REFEREE GUIDELINE
for the Completion of the Referee Report
Professional Engineering Technologists

NOTE, from Sheet B1.2, paragraph 6: "Each applicant must, with the permission of the persons concerned, supply the Council with the names and addresses of three referees, who have personal knowledge of the applicant's work. Referees must be registered with ECSA as a Professional Engineering Technologist or a Professional Engineer, and in exceptional circumstances a Professional Certificated Engineer or a Professional Engineering Technician, of which one must be a direct supervisor. In case of the supervisor not being registered with ECSA a forth registered referee must be provided."

1. COMPETENCY OF A PROFESSIONAL ENGINEERING TECHNOLOGIST

Professional Engineering Technologists are persons who, by virtue of a combination of education, training and experience have attained a level of competence, which enables them to apply engineering principles and techniques to the solution of engineering challenges of varying complexity in industry. Their training and experience can be relatively broadly based but they may also have specialised in a narrow field. Their work may include research, development, design, commissioning, maintenance and any other activity which requires their level of competence. Their stature is such that they may be in a position of responsibility in industry or consulting engineering practice.

Their decision making must be at an intellectual level requiring mature judgement, the ability to conceive, identify and optimise technical solutions beyond the mere comparison with accepted standards and norms. Implicit in the above is acceptance of full engineering responsibility for such decisions.

2. IMPLICATION OF REGISTRATION

The individual subscribes to and will adhere to the professional Code of Conduct of the Act. As such he/she is required to accept legal responsibility for the soundness of the work executed and thereby affording protection to the public.

3. COMPLETING THE REFEREE REPORT

3.1 Aim

The referee report is a necessary and supplementary document to the applicant's application for registration as a Professional Engineering Technologist with ECSA. The aim is to convey to the Council, on a confidential basis, the personal knowledge that the referee or the employer has of the applicant and in the process to make a reasoned evaluation of the applicant's capabilities.

3.2 Motivation

It is necessary that the referee or employer be able to clearly and strongly motivate his/her opinion in respect of the applicant's readiness for registration. The referee must, when supplying reasons, consider the minimum legal registration requirements.

When signing the referee report, referees declare that they are acquainted with Council's Competency Standards, document R-02-PT and ECSA's Rules of Conduct for Registered Persons (please refer to ECSA's website, www.ecsa.co.za), and that they are prepared to be interviewed by the Council to substantiate their viewpoint, should Council require them to do so.

3.3 Evaluation

The referee must carefully evaluate the applicant's capabilities. This report is **not a character study**. An evaluation of the candidate's ethical and professional competence is required.

Referees should have a personal knowledge of an applicant and his/her work and they should be able to give a professional opinion on his/her engineering ability, level of engineering responsibility and professional conduct during the period of time of their knowledge of the applicant's activities.

The referee must carefully evaluate the applicant's capabilities and correctly and accurately complete the report as Council attaches great value to the information, which is supplied by the referee.

4. GENERAL

The Referee Report should be returned directly to ECSA by the referee. Referees are requested to have their assessments typed.

5. CONFIDENTIALITY

ECSA undertakes to protect the confidentiality of all the information received from the referee.

Engineering Council of South Africa **Form B5-IPD** (17/07/2014)

INITIAL PROFESSIONAL DEVELOPMENT REPORT (IPD)

As part of the Application for Registration as a Professional Engineering Technologist

Name:

Discipline:

Itemise courses, workshops, conferences, symposia or congresses attended.
List these under the separate headings of engineering, management and computer courses.

Name or subject of item	*Course Provider*	*Dates attended*	SAQA NQF level if available	Duration in hours	Credits	For use of Assessor
Engineering Courses						
Management Courses						
Computer Courses						

Signature of Applicant **Date**

Engineering Council of South Africa (17/07/2014) **Sheet B5**

Information Sheet
for completion of the
Initial Professional Development Report (Form B5)

This form **must** be completed by all persons applying for registration as a Professional Engineering Technologist.

1. The Initial Professional Development (IPD) Report is a factual record that serves as evidence of proficiency development from academic base through CPD-type activities of Category 1 and other formal learning activities prior to registration, including in-house training. Reported activities do not require Continuing Professional Development (CPD) validation.

2. Initial Professional Development (IPD) is defined as the ongoing studies and development of engineering knowledge required to keep abreast of new technologies. The Registration Committee aims to gauge to what extent applicants kept abreast with engineering and technical developments in their fields of expertise subsequent to obtaining their qualifications.

3. List engineering courses, seminars, conferences, symposia, workshops etc. that were attended. Please provide dates [year] attended and duration of the course in days or hours. Please indicate whether you were required to sit a written examination at the conclusion of other engineering courses. Also provide detail of papers delivered at engineering seminars, conferences, symposia, workshops, overseas study tours, etc.

4. It is not required that copies of certificates relating to relatively minor seminars or courses form part of the application.

Engineering Council of South Africa **Form B18-EDR** (17/07/2014)

EDUCATIONAL DEVELOPMENT REPORT

A	**INSTRUCTIONS** **1. Applicants not in possession of an ECSA accredited B Tech (Eng) should complete this work based (experience) learning report. WRITE A REPORT IN ABOUT 100 WORDS ON EACH CRITERION LISTED.** **2. Reports must include reference to *broadly-defined* practical examples in the work place demonstrating how the competencies were satisfied, and is not restricted to a single task or project. (Additional supporting evidence may be attached, if necessary – limited to two A4 pages).** **3. This information can be provided from education or experience, or a combination of both.** **4. The applicant must sign the completed report and also obtain a signature from his/her supervisor.** **5. The applicant may be invited to an interview to expand and/or confirm this report.**
	Broadly-defined engineering problems *have the following characteristics:* g) require coherent and detailed engineering knowledge underpinning the applicable technology area; *and one or more of:* b) are ill-posed, under- or over specified, requiring identification and interpretation into the technology area; c) encompass systems within complex engineering systems; d) belong to families of problems which are solved in well-accepted but innovative ways; *and one or more of:* e) can be solved by structured analysis techniques; f) may be partially outside standards and codes; must provide justification to operate outside; g) require information from practice area and sources interfacing with practice area that is complex and incomplete; h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties.
B.	*APPLICANT'S PERSONAL DETAILS*

Name:		**Technical Qualifications:**	

C. *EDUCATIONAL DEVELOPMENT REPORT (OUTCOMES BASED, DURING WORK EXPERIENCE)*

Exit Level Outcome 1. The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected sub-discipline together with the underpinning fundamentals of mathematics and natural science.

Item	Criteria	Development Report
1.1	State what mix of mathematical, natural science and engineering knowledge you applied in the solution of the *broadly-defined engineering problem.* State which theories and principles were used.	
1.2	Describe how you analysed and modelled the engineering materials, components, systems or processes used and provide the motivation for the specific selection.	
1.3	Describe the procedures applied for dealing with uncertainty and risk applicable to your own theoretical limitations and the use of specialists to do the work.	

Exit Level Outcome 2. The applicant displays proficiency in engineering specialist fields of a selected engineering sub-discipline at the exit level.		
Item	**Criteria**	**Development Report**
2.1	Describe how you analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem.	
2.2	Describe how you generated possible solutions to the problem and how they were modelled, analysed and prioritised.	
2.3	State how you selected, formulated and presented the preferred solution.	

Exit Level Outcome 3. The applicant displays proficiency in the use of engineering tools and IT support appropriate to the sub-discipline.		
Item	**Criteria**	**Development Report**
3.1	Describe how you assess the method, skill or tool (including computer applications) for applicability to solving problems.	
3.2	Describe how you applied the method, skill or tool correctly to achieve the required result, and how this tested against the required results.	

Exit Level Outcome 4.The applicant demonstrates design proficiency through substantial project work. The design problem meets the requirements of a *broadly-defined engineering problem* and the design approach is properly structured.		
Item	**Criteria**	**Development Report**
4.1	Describe how you formulated the design problem and how the design process was managed.	
4.2	Describe how user needs, legislation, standards and resources were acquired and evaluated.	
4.3	Describe how you performed the design task, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints.	
4.4	Describe how the selected design was evaluated in terms of impact and benefits and how this information was communicated in an engineering report.	

Exit Level Outcome 5. The applicant displays proficiency in experimental or investigative and information handling methodology		
Item	**Criteria**	**Development Report**
5.1	Describe the plan you devised to perform the investigation stating what information was used.	

Item	Criteria	Development Report
5.2	Describe the methodology you used to perform the analysis stating how the equipment and/or software was selected and used.	
5.3	From the data available, describe how information was derived, critically analysed and interpreted to reach conclusions.	
5.4	Describe how the purpose, process and outcomes of the investigation are recorded in an engineering report.	

Exit Level Outcome 6. The applicant communicates in writing at the exit level of a BTech programme
No entry required. Assessment will be done against evidence submitted in item 5 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 7. The applicant explains and analyses impacts of engineering technologies of the sub-discipline.
No entry required. Assessment will be done against evidence submitted in item 6 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 8. The applicant explains ethical principles and analyses ethical issues.
No entry required. Assessment will be done against evidence submitted in item 8 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 9. Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a team and to manage projects.
No entry required. Assessment will be done against evidence submitted in item 4 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 10. Engage in independent and life-long learning through well-developed learning skills.
No entry required. Assessment will be done against evidence submitted in the Initial Professional Development Report (Form R-03-ER-PT).

Signature of Applicant: _____Date:

Signature of Mentor / Supervisor: _____

Name of Mentor / Supervisor (printed): Tel. No.:

(17/07/2014)

Before the Application Form is submitted to the Engineering Council please make sure that the following points have been checked and included:

1. Application fee of R _____.

2. First page of Application Form is initialled by the applicant and Commissioner of Oaths.

3. Second page of Application Form is signed by applicant, signed and stamped by the Commissioner of Oaths.

4. The names of a minimum of three referees have been given.
[The referee reports (Forms B4 REF) must be sent under separate cover and the people chosen must be registered as either a Professional Engineer or a Professional Engineering Technologist. One report must be from a supervisor. If your supervisor is not registered with ECSA, four referee reports are required. Referee reports from your supervisors are preferable, and they should have played some mentoring or supervisory role in your career development.]

5. A photograph has been attached to Application Form B1.1.

6. Training and Experience Reports or Training and Experience Outlines covering **ALL** the experience gained completed on the forms provided (Forms B2.1 TER, TEO and B2.2 TES). For alternate route candidates, for at least the last ten years. (Photocopies of the blank forms may be made.)

7. Signatures of applicant on each Training and Experience Report or Outline.

8. Signatures of supervisor or employer on each Training and Experience Report.

9. If the applicant has his own business or signatures are unobtainable, the training and experience report must be accompanied by a Sworn Affidavit providing reasons for not obtaining the signature and stating that the information is true and correct, i.e. the Commissioner of Oaths must stamp and sign each experience report form.

10. Organograms for the respective positions held by applicant signed by applicant and employer - Period and position (post held) must be indicated.

11. One Engineering Report Form B2.3 ER (paragraph 2.1 of Sheet B2.2) indicating the applicant's own contribution/role and responsibility in his/her work, signed by a supervisor.

12. Certified copies of certificates, diplomas, degrees, etc.

13. Completed Form B1.3 AR, one for each qualification, where applicable.

14. Proof of membership of Voluntary Associations must be provided, where applicable.

15. Details of your Initial Professional Development (IPD) (using Form B5 IPD).

16. If you are not in possession of the BTech degree awarded by an ECSA accredited university of technology, the completed and signed Educational Development Report (Form B18 EDR).

17. **Ensure that your Application does not exceed 50 pages in total.**

Addendum A
(27 March 2012)

Voluntary Associations
recognised in terms of section 25(3) of the Engineering Profession Act, 2000 (Act No. 46 of 2000)

These Voluntary Associations applied for recognition in terms of section 36(1) of the Engineering Profession Act, 2000 (Act 46 of 2000) and were recognised by the Council in terms of Section 25(3) of the above Act.

One of the benefits of recognition is that registered members of a Recognised Voluntary Association (Categories A and B only) enjoy partial exemption from payment of their ECSA annual fees. Expiry date for these voluntary associations below is five (5) years from the date of recognition. These Acronyms appear in alphabetically order for ease of reference.

	Category A			
No	**Acronym**	**Name**	**Reference Number**	**Date Recognised**
1	**AeSSA**	Aeronautical Society of South Africa	VA A0022	11 August 2011
2	**AMMSA**	Association of Mine Managers of South Africa	VA A0031	24 January 2007
3	**AMRE**	Association of Mine Resident Engineers	VA A0032	30 November 2007
4	**CEASA**	Clinical Engineering Association of South Africa	VA A0040	26 August 2010
5	**COET**	The Chamber of Engineering Technology	VA A0001	19 October 2010
6	**CSSA**	Concrete Society of Southern Africa	VA A0019	11 August 2011
7	**ICMEESA**	Institution of Certificated Mechanical and Electrical Engineering	VA A0002	24 November 2010
8	**IEEE**	Institute of Electrical and Electronic Engineers South African Section	VA A0036	12 June 2008
9	**IMESA**	Institution of Municipal Engineering of Southern Africa	VA A0003	14 April 2011
10	**IPET**	Institute of Professional Engineering Technologists	VA A0004	19 October 2010
11	**LIASA**	Lift Inspectors Association of South Africa	VA A0026	15 March 2012
12	**NSBE**	National Society of Black Engineers	VA A0037	12 June 2008
13	**SAAMA**	South African Asset Management Association	VA A0025	14 May 2009
14	**SACEA**	South African Colliery Engineers' Association	VA A0005	11 August 2011
15	**SACMA**	South African Colliery Managers Association	VA A0029	24 January 2007
16	**SAIAE**	South African Institute of Agricultural Engineers	VA A0020	11 August 2011
17	**SAICE**	South African Institution of Civil Engineering	VA A0006	24 November 2010
18	**SAIChE**	South African Institution of Chemical Engineers	VA A0007	11 August 2011
19	**SAIEE**	South African Institute of Electrical Engineers	VA A0008	14 April 2011
20	**SAIIE**	Southern African Institute of Industrial Engineers	VA A0009	11 August 2011
21	**SAIMechE**	The South African Institution of Mechanical Engineering	VA A0021	14 April 2011
22	**SAIMENA**	South African Institute of Marine Engineers and Naval Architects	VA A0010	11 August 2011
23	**SAIMM**	South African Institute of Mining and Metallurgy	VA A0011	14 April 2011
24	**SAIRAC**	South African Institute of Refrigeration and Air-Conditioning	VA A0028	24 January 2007
25	**SAT**	Society for Asphalt Technology	VA A0043	26 August 2010
26	**STE**	Society of Telkom Engineers	VA A0035	12 June 2008

	Category B			
	Acronym	Name	Reference Number	Date Recognised
27	SAFHE	South African Federation of Hospital Engineers	VA B0023	11 April 2011
28	SAID	South African Institute of Draughting	VA B0033	30 November 2007
29	SAIMC	South African Institute of Measurement and Control	VA B0024	11 August 2011
30	WISA	Water Institute of Southern Africa	VA B0038	12 June 2008

	Category C			
	Acronym	Name	Reference Number	Date Recognised
31	AMEU	Association of Municipal Electricity Undertakings	VA C0027	11 August 2011
32	BEPEC	Built Environment Professions Export Council	VA C0044	24 November 2010
33	CESA	Consulting Engineers South Africa (*p.n.a. SAACE*)	VA C0013	14 April 2011
34	IESSA	Illumination Engineering Society of South Africa	VA C0012	11 August 2011
35	INCOSE	International Council of Systems Engineering (SA Chapter)	VA C0030	24 January 2007
36	IQSA	Institute of Quarrying Southern Africa	VA C0014	11 August 2011
37	ITC	Institute for Timber Construction	VA C0015	11 August 2011
38	SAFA	South African Flameproof Association	VA C0016	26 August 2010
39	SAFCEC	South African Federation of Civil Engineering Contractors	VA C0017	11 August 2011
40	SAFPA	South African Fluid Power Association	VA C0039	26 November 2008
41	SAISC	South African Institute of Steel Construction	VA C0018	11 August 2011
42	SAIW	South African Institute of Welding	VA C0034	30 November 2007
43	SARF	South African Road Federation	VA C0042	26 August 2010
44	SASTT	Southern African Society for Trenchless Technology	VA C0041	26 August 2010

Please note: Proof of membership must be submitted.

ENGINEERING COUNCIL OF SOUTH AFRICA

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Website: www.ecsa.co.za

Waterview Corner, 1st Floor,
2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

DISABILITY REGISTER

Disability is defined as: "Persons with disabilities including those who have long-term physical, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others".

Registration Number: _____

Name & Surname: _____

Do you have any disability (Please tick):

Yes	No

If yes, state nature of Disability:

_____

_____

NB: Completion of this form is necessary in order to accurately reflect disability statistics in terms of Government Policy.

ENGINEERING COUNCIL OF SOUTH AFRICA

(2014-07-17) **Form C1.1**

Private Bag X 691
BRUMA 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
Email: engineer@ecsa.co.za
Website: www.ecsa.co.za

Waterview Corner, 1st Floor,
2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

ECSA

Office Use
Ref.:

APPLICATION FORM

REGISTRATION AS A PROFESSIONAL ENGINEERING TECHNICIAN

NB: Please consult the Information Sheets (Sheets C1.1 & C1.2) before completing this Application.

1. General Information:

Surname:				**First Names:**		**PHOTOGRAPH** *(Passport-type. Please paste - do not staple)* *Alternatively, insert electronically in JPEG or similar format*
Date of Birth:				**Identity No:** *or*		
***Gender** **M:**	**F:**	***Race Group**	**Asian:** / **Coloured:**	**Black:** / **White:**	**Passport No. and Country:**	**Country of normal residence:**

Home Address:	**Postal Address:**	**Name & Address of present Employer:**
Tel. No. (Home): **Tel. No. (Work):** *(include area codes)* **Cell No.:** **E-mail:**	**Title of Position held:**	**Tel. No. (Employer):** **Fax No.:** (include area codes) **E-mail:**

*Completion of this section is necessary to accurately reflect equity statistics in terms of Government Policy. Please cross applicable blocks.

2. Qualifications: (All qualifications at tertiary level) (List of subjects to be provided on Form C1.3 AR)

Educational Institution	Qualification	Attendance from	Attendance to	Date of final examination	*Office use*

NB: Kindly initial this page in the presence of a Commissioner of Oaths / Justice of Peace.

Applicant: .....

Commissioner Of Oaths/ Justice Of Peace: .....

3. Previous / Current Registration or Application Details: (eg. Candidate Engineering Technician, Registered Lift Inspector, etc.)

Type	Category	Number	Date
Previous Registration:			
Current Registration:			
Previous Application:			

4. Membership of Voluntary Associations recognised in terms of the Act (or other):
(If more space is needed, please supply information separately.)

Name of Association / Institute / Society	Membership grade and date accepted	Number of years	Office held

5. Application Fee: **(See item 5 of the Information Sheet)**

My Application fee of **R** (cheque) is transferred electronically.

6. Referees:

(1)	(2)	(3)
E-mail: **Tel No:**	**E-mail:** **Tel No:**	**E-mail:** **Tel No:**

7. Declaration:

I, (full names)
hereby apply for **Registration as a Professional Engineering Technician** and undertake to abide by all the provisions of the **Engineering Profession Act, 2000 (Act No. 46 of 2000)** and any **Rules** published thereunder, including the **Code of Professional Conduct**. I declare that Section 19(3)(a) of the Act does not preclude me from registration. I solemnly declare that, to the best of my knowledge, all the information contained herein is true.

Signature: _____

Sworn to/Affirmed before me at _____

on this the _____ day of _____(month & year).

Commissioner of Oaths/
Justice of Peace: ..... *(Commissioner's stamp)*

Office Use Only

Application fee: R _____

Received by: _____ Date: _____

(Council's stamp)

Engineering Council of South Africa **Form C1.3 AR** (2014-07-17)

Detailed information on

TERTIARY ENGINEERING QUALIFICATIONS

As part of the Application for Registration as a Professional Engineering Technician

Name of Applicant:

Name of Qualification:

All subjects passed	Year Obtained	Marks obtained *(if available)*
Extra subjects passed for incomplete qualifications		
	Total Credits	

Signature of Applicant **Date**

Engineering Council of South Africa (2014-07-17) **Sheet C1.1**

Information Sheet for Applicants Applying for Registration as a Professional Engineering Technician

This document briefly sets out the information required by the Registration Committee to evaluate applications.

A. General:

- **All applicants should read, understand and provide all the information/documentation required in Sheets C1.1, C1.2, C2.1, C2.2, C4 and C5 of this application form. If the prescribed requirements are not met in the correct format, it is unlikely that applicants will be registered.**
- The onus is on the Applicant to provide all the evidence for consideration of the Council. The evidence must demonstrate/show competency in accordance with the requirements of Policy on Registration of Persons in Professional Categories document R-01-P, and Criteria and Processes for Recognition of Educational Qualifications for Professional Categories document E-17-P.
- Your application will only be considered by the Council if the following documents are submitted:
  - ⇒ **Completed Application Form (C1.1 & C1.2).**
  - ⇒ **Certified copies of qualifications or courses.**
  - ⇒ **Completed detailed information on Qualifications (Form C1.3 AR).**
  - ⇒ **Completed Training and Experience Report (Form C2.1 TER) and Training and Experience Outline (Form C2-1 TEO) if applicable, for each experience period and a Training and Experience Summary (Form C2.2 TES).**
  - ⇒ **Completed recent Engineering Report (Form C2.3 ER).**
  - ⇒ **Completed Educational Development Report (Form C18 EDR), if applicable.**
  - ⇒ **Referee Reports, one from a supervisor, each duly completed. (Form C4 REF).**
  - ⇒ **Completed Initial Professional Development Report (Form C5 IPD).**
- All supporting documentation must be clearly identified. If you are unable to complete any of the sections, please explain the reasons in a covering letter.
- In completing all paper forms use type or print clearly in **black ink** and **minimum font size 10** to ensure clear copying. Forms may not be substituted but may be photocopied or recreated in electronic format.
- It is imperative to present records of only the most significant work and achievements. The Registration Committee considers that an application of forty (40) A4 pages or less, is sufficient to assess an applicant and that longer presentations may not be to the applicant's advantage.
- Your application for registration will only be finalised when the Council has received all referee reports (Form C4 REF). If the referee reports do not reach the Council within a reasonable time, you will be notified accordingly. You will then be expected to contact the referees.
- If you are in doubt regarding any aspects please contact the Council's offices.
- The registration process may take **6 (six) months** or longer to complete and each applicant will be informed of the Council's decision as soon as it becomes available.
- Information regarding the progress of any application will not be given telephonically.

Please note that it is your responsibility to ensure that all reports reach Council's offices timeously.

For Registration as a Professional Engineering Technician applicants must have the benchmark academic qualification and three years of approved experience as a technician, of which at least a minimum of one year must be in a position of taking full engineering responsibility. If the applicant does not have the benchmark academic qualification (NDip), their application will be considered by the **alternate route.** The difference must be made up by extended periods of both engineering experience and responsibility. The exact periods will depend upon the level of qualifications held by the applicant. It must be clearly understood that the work which the candidates are doing or have done, as well as the submission of the completed **Educational Development Report (Form C18 EDR) and the Initial Professional Development Report (Form C5 IPD),** are important factors in determining registrability.

B. The Application Form:

The following information is given to assist applicants to complete this form – the numbers refer to the equally numbered sections of the Application Form.

1. **General Information:** Ensure that all personal details are correct. A recent passport type photograph of the applicant is required.

2. **Qualifications:**
   - Original certified copies of your qualification certificate(s) must be submitted. (They must be certified by a Commissioner of Oaths or Justice of Peace. A Police Officer or Post Master will usually be able to help you.)
   - If your documents are not in English, please supply certified translations.
   - The benchmark academic qualification required by the Council for registration is a NDip diploma awarded by a South African University of Technology or Comprehensive University.

3. **Previous / Current Registration or Application Details:**

If you have previously applied for registration in any category or were previously registered but your registration was cancelled for any reason, please provide category and previous registration number in relevant block. If you are currently registered in another category, also complete the appropriate block.

4. **Membership of recognised Voluntary Associations:**

A list of associations is attached as **Addendum A**. Proof of current membership of such association will qualify you for a reduction in your annual fee should your application be successful.

Persons who have applied for membership of any of the above-mentioned associations, but who have not yet been accepted, must indicate this in the appropriate block. Membership of other institutes/societies (not recognised) may be stated, but this does not qualify the applicant for a reduction in the annual fee.

5. **Application and Annual Fees:**

Only cheques must accompany your application form, as **no cash or postal orders will be accepted**. If you do not have a cheque account, you may deposit cash at any Standard Bank into ECSA's account. Please contact our Accounts Department at (011) 607-9530/1/2/3 or Reception at (011) 607-9500 to obtain our banking details. Alternatively you may make payment **(1)** via the internet, or **(2)** you may ask your bank for a bank cheque to be made out to ECSA, **(3)** contact your bank's telephone banking division to make payment into ECSA's account or **(4)** by credit card by phoning our Accounts Department. When making the deposit please ensure that your name and initials are entered in the field named "Depositor's name or reference number" and attach a copy of the proof of deposit to your application form. Refer to separate sheet regarding fees payable, visit ECSA's website at http://www.ecsa.co.za, click on **"Finance"** or contact the Council's offices at (011) 607-9500 to determine the current fee.

6. **Referees:**

Each applicant must, with the permission of the persons concerned, supply the Council with the names and addresses of a minimum of three referees, who have personal knowledge of the applicant's work. Referees must be registered with ECSA as a Professional Engineering Technician, a Professional Engineering Technologist, Professional Certificated Engineer or a Professional Engineer, of which one should be a direct supervisor.

Referees may be chosen in the following order of preference:

(a) Immediate supervisor
(b) Mentor
(c) Indirect supervisor
(d) Employer
(e) Colleague at a higher level involved with your work (not more than one out of three referees).
(f) Colleague at a higher level not directly involved with your work (not more than one out of three referees).
(g) Client

Use Form C3 for formal correspondence with each referee, and enclose copies of the referee report (Form C4 REF) and the guideline for referees (Sheet C4). It is suggested that you provide each referee with an addressed envelope with prepaid postage for the referee to forward the report direct to the Council.

7. **Declaration:** Section 19(3)(a) of the Engineering Profession Act, 2000 (Act No. 46 of 2000) reads:

"*Despite subsection (2), the Council may refuse to register an applicant -*

(i) if the applicant has been removed from an office of trust on account of improper conduct;
(ii) has been convicted of an offence in the Republic, other than an offence committed prior to 27 April 1994 associated with political objectives, and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iii) if the applicant has, subject to paragraph (b), been convicted of an offence in a foreign country and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iv) if the applicant is declared by the High Court to be of unsound mind or mentally disordered, or is detained under the Mental Health Act, 1973;
(v) for as long as the applicant is disqualified from registration as a result of any punishment imposed on him or her under this Act;
(vi) if the applicant is an unrehabilitated insolvent whose insolvency was caused by his or her negligence or incompetence in performing work falling within the scope of the category in respect of which he or she is applying for registration."

Note that your application must be sworn to or affirmed before a Commissioner of Oaths or a Justice of Peace. Your attention is drawn to the initialling required at the bottom of the first page of the Application Form.

Page No. of

This form must be used for applicants who have completed and are submitting a report for each phase of training and work experience from the time of meeting the education requirements to application for registration. Consult the Information Sheet (Sheet C2) before completing this report.

Engineering Council of South Africa

Training and Experience Report **Form C2.1-TER-PN** (2014-07-17)

As part of the Application for Registration as Professional Engineering Technician

Applicant's Name				**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position held:**		
Employer's Name and Address for this period: (This is the employer and site at which the work took place, e.g. the site the applicant has been seconded to).				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
				If yes, provide number of CU:	**No:**	
Supervisor's Name and Address: **ECSA Registration No. (If not registered, qualify):**				**Supervisor's Signature:** **Date:**		

Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)	
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc.)	

Organogram showing supervisor (person signing this report), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions, qualification and registration (if any)*. Please do not colour in blocks.

Report: (Write in proper paragraphs in the first person singular in less than 280 words)

Nature of training or experience (stated in 20-30 words)*

Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 120- 150 words)*

Interaction with clients, stakeholders and other disciplines (stated in 40-50 words)

Describe role and responsibility (in 40-50 words)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Page No. of

This form must be used for an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at a degree of engineering responsibility E (Performing) in detail TER format. For the remaining periods or groups of related periods the report can be in this TEO format. Consult the Information Sheet (Sheet C2) before completing this report.

Engineering Council of South Africa

Training and Experience Outline **Form B2.1-TEO-PN** (2014-07-17)

As part of the Application for Registration as Professional Engineering Technician

Applicant's Name				**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position(s) held:**		
Employer's and Supervisor Name and Address:				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
ECSA Registration No. (If not registered, qualify):				**If yes, provide number of CU:**	**No:**	
Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)						
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc)						

Organogram identifying yourself, your supervisor and persons supervised. Please do not colour in blocks*.

Outline Report: (Use bulleted form, using 8-11 bullets)

Nature of training or experience in the period(s) stated in bulleted format*

Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in bulleted format)*

Management responsibilities (stated in bulleted format)

Interaction with clients, stakeholders and other disciplines (stated in bulleted format)*

Describe role and responsibility (stated in bulleted format)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Engineering Council of South Africa (2014-07-17) **Form C2.3 ER**

Engineering Report

Use this form to report in about 100 words per criterion under Outcomes 1 to 11 below on a recent engineering task, part of a project or complete project to which you have made a significant contribution. The report may cover conceptualization, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing or planning at a well-defined level. Please also provide a sample relevant calculations and drawings as an addendum which is limited to two A4 pages.
Use Appendix A of the Discipline Specific Training Guide R-05-PN to assist in the interpretation of the criteria

Name of Applicant:

Designation of Work: (<15 words)	
Date of Work:	
Engineering brief and objective: (< 30 words)	
Environment: Industry; Laboratory; Theory; Simulation, etc. in <15 words)	
Short Summary: (State engineering problems; solutions in < 30 words)	
Budget: (<10 words)	

Well-defined engineering problems *have the following characteristics:*

a) can be solved mainly by practical engineering knowledge, underpinned by related theory;
and one or more of:
b) are largely defined but may require clarification;
c) are discrete, focused tasks within engineering systems;
d) are routine, frequently encountered, may be unfamiliar but in familiar context;
and one or more of:
e) can be solved by standardised or prescribed ways;
f) are encompassed by standards, codes and documented procedures; requires authorisation to work outside limits;
g) information is concrete and largely complete, but requires checking and possible supplementation;
h) involve several issues but few of these imposing conflicting constraints and a limited range of interested and affected parties;
and one or both of:
i) requires practical judgement in practice area in evaluating solutions, considering interfaces to other role-players;
j) have consequences which are locally important but not far reaching (wider impact are dealt with by others).

Well-defined engineering activities (WDEA) have several of the following characteristics:

a) *Scope* of practice area is defined by techniques applied; change by adopting new techniques into current practice;
b) Practice area is located within a wider, complex *context,* with well-defined working relationships with other parties and disciplines;
c) Work involves familiar, defined range of *resources,* including people, money, equipment, materials, technologies;
d) Require resolution of *interactions* manifested between specific technical factors with limited impact on wider issues;
e) Are *constrained* by operational context, defined work package, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;
f) Have *risks* and *consequences* that are locally important but are generally not far reaching.

Outcomes and Criteria	
Outcome 1: Define, investigate and analyse well-defined engineering problems encountered in your work:	
1.1 State how you interpreted the work instruction received, checking with your client or supervisor if your interpretation is correct.	
1.2 Describe how you analysed, obtained and evaluated further clarifying information, and if the instruction was revised as a result.	
Outcome 2: Design or develop a solution to well-defined engineering problems encountered in your work:	
2.1 Describe how you designed or developed and analysed alternative approaches to do the work. Impacts checked. Calculations attached.	
2.2 State what the final solution to perform the work was, client or your supervisor in agreement.	
Outcome 3: Comprehend and apply the knowledge in established engineering practices and knowledge specific within your practice area as applied in your task:	
3.1 State what NDip level engineering standard procedures and systems you used to execute the work, and how NDip level theory was applied to understand and/or verify these procedures.	
3.2 Give your own NDip level theoretical calculations and/or reasoning on why the application of this theory is considered to be correct (Actual examples).	
Outcome 4: Manage part or all of one or more well-defined engineering activities embodied in your work:	
4.1 State how you managed yourself, priorities, processes and resources in doing the work (e.g. bar chart).	
4.2 Describe your role and contribution in the work team.	
Outcome 5: Communicate clearly with others in the course of your engineering activities (well-defined engineering work):	
5.1 State how you presented your point of view and compiled reports after completion of the work.	
5.2 State how you compiled and issued instructions to entities working on the same task.	
Outcome 6: Recognise the reasonably foreseeable social, cultural and environmental effects of your well-defined engineering activity (task):	
6.1 Describe the social, cultural and environmental impact of this engineering activity.	
6.2 State how you communicated mitigating measures to affected parties and acquired stakeholder engagement.	

Outcome 7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of your well-defined engineering activity (task):	
7.1 List the major laws and regulations applicable to this particular activity and how health and safety matters were handled.	
7.2 State how you obtained advice in doing risk management for the work and elaborate on the risk management system applied.	
Outcome 8: Conduct engineering activities ethically in executing your work:	
8.1 State how you identified ethical issues and affected parties and their interest and what you did about it when a problem arose.	
8.2 Confirm that you are conversant and in compliance with ECSA's Code of Conduct and why this is important in your work.	
Outcome 9: Exercise sound judgement in the course of well-defined engineering activities encountered in your work:	
9.1 State the factors applicable to the work, their interrelationship and how you applied the most important factors.	
9.2 Describe how you foresaw work consequences and evaluated situations in the absence of full evidence.	
Outcome 10: Be responsible for making decisions on part or all of well-defined engineering activities included in your work:	
10.1 Show how you used NDip theoretical calculations to justify decisions taken in doing engineering work. Attach actual calculations	
10.2 State how you took responsible advice on any matter falling outside your own education and experience.	
10.3 Describe how you took responsibility for your own work and evaluated any shortcoming in your output.	
Outcome 11: Undertake professional development activities sufficient to maintain and extend your competence.	
11.1 State what strategy you have independently adopted to enhance your own professional development.	
11.2 State the philosophy of your employer in regard to your professional development.	
Evidence of your competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form C5 IPD	

Signature of Applicant: _____ **Date:**

Signature of Mentor / Supervisor: _____

Name of Mentor/Supervisor printed: **Tel. No.:**

Engineering Council of South-Africa

Training and Experience Summary **Form C2.2** (2014-07-17)

Surname and Initials:

First complete a Training and Experience Report Form C2.1 TER, or a Training and Experience Outline Form C2.1 TEO for each period.

No	From	To	Weeks	Work Details		Responsibility A-E
1				Employed by:	Post held:	
				Type of Work:		
2				Employed by:	Post held:	
				Type of Work:		
3				Employed by:	Post held:	
				Type of Work:		
4				Employed by:	Post held:	
				Type of Work:		
5				Employed by:	Post held:	
				Type of Work:		
6				Employed by:	Post held:	
				Type of Work:		
7				Employed by:	Post held:	
				Type of Work:		
8				Employed by:	Post held:	
				Type of Work:		
9				Employed by:	Post held:	
				Type of Work:		
n				Employed by:	Post held:	
				Type of Work:		

When an applicant is not engaged in training and experience towards registration, the period must be reflected as follows:

x				Employed by: ***Not active***	Post held:	
				Type of Work: ***Insert reason here***		
Total years, months:						

Signature of Applicant: _____ **Date:** _____

Engineering Council of South Africa (2014-07-17) **Sheet C2**

Information Sheet
for completion of the
Training and Experience Report or Outline / Engineering Report / Education Development Report

1.1. The Purpose of the Training and Experience Report (TER) is to provide a factual record of the main periods in the applicant's development from graduation to applying for registration and to identify the periods where the applicant took responsibility at the required level.

1.2 In general, an applicant must complete and submit a Training and Experience Report (TER) for each phase of training and work experience from the time of meeting the education requirements (NDip diploma in engineering) to application for registration. TER(s) with total duration covering at least one year working at the degree of engineering responsibility E (Performing) must be submitted. Such periods need not be contiguous and need not include the last period reported.

- Use a separate form for each experience period and approximately 280 words per TER or 11 bullets per TEO).
- Number the periods in chronological order, which may not overlap.
- Cover the period from first graduation to date of application.
- Provide full details of work done during each period indicating your personal role and level of responsibility. This work will typically be of a higher level than artisan/journeyman, learnership or a specified category like, lifting machinery inspector, medical equipment maintainer, etc.

An experience period ends when:

- your work environment has changed, eg. when a major task or project has been completed;
- your type of work has changed;
- your responsibilities or level of function have changed (for instance, as in a promotion);
- you have changed employer;
- your experience is interrupted (for instance by study or prolonged illness).

1.3 It is essential that the information supplied relates to engineering. Other activities which pertain indirectly to engineering may be considered but measurement of quantities, attendance at meetings and unrelated functions are not relevant. Management activities, where mentioned, must contain predominantly engineering content.

1.4 The Training and Experience Report (Form C2.1 TER) must be set out in a way that clearly shows engineering knowledge applied (ultimately at NDip level) and responsibility carried by the applicant. It is incumbent on applicants to select and describe projects and tasks, which show their level of engineering knowledge and experience and clearly illustrates the applicant's own role and strategies devised to make these projects successful.

1.5 The functions described must address your involvement and responsibility in engineering work. They should include but not be limited to:

- Design, drafting, installation, calibration, commissioning, recommendation.
- Operational management, maintenance, modification, development
- Monitoring, manufacturing, economics, resources (including human resources) management.

1.6 Attach designs, calculations, reports, sketches and any other relevant documentation to support your submission.

1.7 Please include an organogram for each experience period showing two levels above and two levels below you (if present) to indicate your degree of responsibility and the names, qualifications, job titles and registration categories of the persons indicated. Cover at least the most recent 3 years of the experience periods.

1.8 Success in attaining registration is considered to be evidence of the quality of the training programme. Since the workplace learning programme is not subject to formal quality assurance, registration as a candidate and employment in a candidacy programme is advisable. In this instance the Commitment and Undertaking of your employer, defining the process to build up competence to the required level, must be indicated and the CU number provided.

1.9 The requirement in 1.2 may be relaxed in the case of an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at a degree of engineering responsibility D or E (Contributing or Performing respectively) in detail in the TER format that are signed by the supervisor. Such periods need not be contiguous and need not include the last period reported. Such an applicant may submit Training and Experience Outlines (Form C2-1 TEO) for the remaining periods or groups of related periods, where a supervisor's or employer's signature is not required.

1.10. The experience periods and periods of interruption must also be noted in the Training and Experience Summary (**Form C2.2 TES**). Ensure that each **Form C2.1 TER** is signed (verified) by your relevant supervisor or employer and signed by yourself. If you cannot obtain the supervisor's signature, or if you are the owner of your own business, please annotate accordingly in the appropriate block and submit an affidavit to the effect that the information provided is true and correct and give reasons why the supervisor signature cannot be obtained. Note that the Commissioner of Oaths stamp and signature is required on each experience report that is not signed by the supervisor.

7. Use **Form C2.3 ER** to submit a recent single **engineering report using at least NDip level knowledge at responsibility degree E,** of 2300 to 3000 words in total (100 words per criterion) on major engineering work completed by yourself.

The engineering work reported on must also be evident from the relevant part of your training and experience reports covered in 1.2 above, or training and experience outline covered in 1.9. The engineering report is more comprehensive then the TERs and TEOs, and provides the opportunity to submit specific evidence in support of the claim of competence against the outcomes required for registration.

Under the criteria for each outcome the following evidence must be provided:

- The report must be written for the purpose of your application. While the report may be on a major engineering task or series of tasks it is a report in which you reflect on your **engineering activities** that demonstrate the required level of competence and the **engineering responsibility** delegated to you.

- This engineering report must be of a nature that is representative of the engineering work that you have done illustrating your own role and strategies devised to make the task successful. You should indicate your level of delegated specific engineering responsibility, independent judgement and decision-making. Factors such as performance, economic evaluation, environmental and safety considerations, complexity of the task, interdisciplinary team working, financial implications and duration of the task have to be included against the applicable criterion. In addition the report should include the extent of your contribution to the engineering process such as conceptualisation, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing and planning.

- Use Appendix A of the Discipline Specific Training Guide R-05-PN to assist in the interpretation of the outcome criteria

Your supervisor must sign the report.

3.1 The minimum academic qualification required for registration as a professional engineering technician is an ECSA accredited National Diploma in Engineering or equivalent obtained from a South African University of Technology, or Comprehensive University. Applicants not in possession of this qualification should submit a completed **Educational Development Report** using **Form C18 EDR**.
Your attention is drawn to your signature and the signature of your supervisor required on the last page of the Educational Development Report.

(2014-07-17) **Form C3**

ENGINEERING COUNCIL OF SOUTH AFRICA
SUID-AFRIKAANSE RAAD VIR INGENIEURSWESE
Private Bag X 691 ● BRUMA ● 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
E-mail: engineer@ecsa.co.za
Website: www.ecsa.co.za

ECSA

PROFESSIONAL ENGINEERING TECHNICIANS

Name of Referee **Date**

Address:

Dear Sir/Madam

I have applied to the Engineering Council of South Africa for **Registration as a Professional Engineering Technician** and hereby request you to provide the Council with your evaluation of my experience and capabilities, on the basis of your personal knowledge thereof.

Please use the attached Form C4 and consult the guideline for referees (Sheet C4).

In making this request to you I acknowledge that the information which will be supplied by you to ECSA is of a confidential nature and that I have no right thereto.

Your co-operation and early despatch of the document direct to the Council would be appreciated, as it would expedite the processing of my application.

Thank you in advance for your co-operation.

Yours faithfully

.....
Signature of Applicant **Name of Applicant** (Please print)

Address:

Postal Code:

Telephone No: **Cell No:**

Engineering Council of South Africa **Referee Report on an Application for Registration as Professional Engineering Technician**	**Form C4-REF** (2014-07-17)

Applicant's Name					
Referee Name:		**ECSA Registration Category (e.g. PrTechniEng):**		**Registration Number:**	
Referee Employer:		**Referee Cell Phone No:**			
		Referee E-mail address:			
My personal knowledge of the applicant's achievements extends:		**From:**		**To:**	
My personal relationship with the applicant is: (Mark one block)		**Unrelated**	**By birth**	**By marriage**	
My professional relationship with the applicant is, for the period shown: (Mark one block)		**Mentor**	**Supervisor**	**Employer**	**Colleague**	**Client**

Evaluation of the Applicant's Competence or state of Development
The level of competency required for registration as a Professional Engineering Technician is defined in the Competency Standards, document R-02-PN. Competency is defined in terms of eleven outcomes and two level definitions, namely *well-defined engineering problems* and *well-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineering Technician (E) for at least one year.

As a referee, you are requested to rate the applicant against the outcomes as well as make a holistic evaluation.
Please use the following scale:

CDC: The applicant consistently demonstrates competence
CDI: The applicant demonstrated competence but not consistently
CNDD: The applicant has not demonstrated competence but is developing
CND: The applicant has not demonstrated competence
X: I am unable to comment

Please enter your comments in the third column, giving your reasons for assigning the particular rating. When a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating

Outcomes	Rating	Reason
Group A: Engineering Problem Solving		
1. Define, investigate and analyse well-defined engineering problems		
2. Design or develop solutions to well defined engineering problems		
3. Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices		
Group B: Management of Engineering Activities		
4, Manage part or all of one or more well-defined engineering activities		
5. Communicate clearly with others in the course of his or her engineering activities		
Group C: Impacts of Engineering Activity		
6. Recognise the reasonable foreseeable social, cultural and environmental effects of well-defined engineering activities		
7. Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her well-defined engineering activities		
8. Conduct engineering activities ethically		
Group D: Exercise judgement, take responsibility		
9. Exercise sound judgement in the course of well-defined engineering activities		
10. Be responsible for making decisions on part or all of well-defined engineering activities		
Group E: IPD		
11. Undertake professional development activities sufficient to maintain and extend his or her competence		

Optional: Further comments or additional information on the Applicant:

Viewed Holistically:		
The applicant has demonstrated competence to be registered as a **Professional Engineering Technician**		

Declaration by Referee: I declare that the information provided is correct to the best of my knowledge. I hereby confirm that I am conversant with the Council's requirements for registration as set out in the Competency Standards, document R-02-PN as well as the instructions on this referee report, and that I am prepared to substantiate my view expressed herein at an interview, should the Council require me to do so. I also confirm that I submit this information to ECSA on the understanding that it will be treated as confidential. I understand that the information will not be disclosed by ECSA unless required by law.

Name of Referee: **Title of Position held:**

Signature of Referee: _____ **Date:**

Please post to:

⇨ **The Chief Executive Officer ● Engineering Council of South Africa**
Private Bag X691 ● BRUMA ● 2026

Engineering Council of South Africa (2014-07-17) **Sheet C4**

REFEREE GUIDELINE
for the Completion of the Referee Report
Professional Engineering Technicians

NOTE, from Sheet C1.2, paragraph 6: "Each applicant must, with the permission of the persons concerned, supply the Council with the names and addresses of a minimum of two but preferably three referees, who have personal knowledge of the applicant's work. Referees must be registered with ECSA as a Professional Engineering Technician, a Professional Engineering Technologist, Professional Certificated Engineer or a Professional Engineer, of which one should be a direct supervisor."

1. COMPETENCY OF A PROFESSIONAL ENGINEERING TECHNICIAN

Professional Technicians are persons who execute work applying known and novel technology in a specific discipline, sub-discipline or a combination of disciplines, in an innovative manner, drawing on a broad base of expertise. They are people who perform a variety of functions, including but not limited to, design and draughting, installation, calibration, commissioning, servicing, repair, maintenance, operating, monitoring, manufacturing, economics and management of resources. The discipline and the work environment determine the number and the ratio of these functions practised. They understand fundamental principles underlying techniques and are competent to do calculations using mathematical formulas. They usually operate within standards, codes and procedures. Through their understanding of equipment and processes used they contribute to technical, financial, managerial and legal aspects of teams/projects. Their autonomy and competence enable evaluation, consultation, implementation and the taking of professional responsibility.

2. IMPLICATION OF REGISTRATION

The individual subscribes to and will adhere to the professional Code of Conduct of the Act. As such he/she is required to accept legal responsibility for the soundness of the work executed and thereby affording protection to the public.

3. COMPLETING THE REFEREE REPORT

3.1 Aim

The referee report is a necessary and supplementary document to the applicant's application for registration as a Professional Engineering Technician with ECSA. The aim is to convey to the Council, on a confidential basis, the personal knowledge that the referee or the employer has of the applicant and in the process to make a reasoned evaluation of the applicant's capabilities.

3.2 Motivation

It is necessary that the referee or employer be able to clearly and strongly motivate his/her opinion in respect of the applicant's readiness for registration. The referee must, when supplying reasons, consider the minimum legal registration requirements.

When signing the referee report, referees declare that they are acquainted with Council's Competency Standards, document R-02-PN and ECSA's Rules of Conduct for Registered Persons (please refer to ECSA's website, www.ecsa.co.za), and that they are prepared to be interviewed by the Council to substantiate their viewpoint, should Council require them to do so.

3.3 Evaluation

The referee must carefully evaluate the applicant's capabilities. This report is **not a character study**. An evaluation of the candidate's ethical and professional competence is required.

Referees should have a personal knowledge of an applicant and his/her work and they should be able to give a professional opinion on his/her engineering ability, level of engineering responsibility and professional conduct during the period of time of their knowledge of the applicant's activities.

The referee must carefully evaluate the applicant's capabilities and correctly and accurately complete the report as Council attaches great value to the information, which is supplied by the referee.

4. GENERAL

The Referee Report should be returned directly to ECSA by the referee. Referees are requested to have their assessments typed.

5. CONFIDENTIALITY

ECSA undertakes to protect the confidentiality of all the information received from the referee.

Engineering Council of South Africa (2014-07-17) **Form C5 IPD**

INITIAL PROFESSIONAL DEVELOPMENT REPORT (IPD)

As part of the Application for Registration as a Professional Engineering Technician

Name:

Discipline:

Itemise courses, workshops, conferences, symposia or congresses attended.
List these under the separate headings of engineering, management and computer courses.

Name or subject of item	*Course Provider*	*Dates attended*	SAQA NQF level if available	Duration in hours	Credits	For use of Assessor
Engineering Courses						
Management Courses						
Computer Courses						

Signature of Applicant **Date**

Engineering Council of South Africa (2014-07-17) **Sheet C5**

Information Sheet
for completion of the
Initial Professional Development Report (Form C5)

This form **must** be completed by all persons applying for registration as a Professional Engineering Technician.

1. The Initial Professional Development (IPD) Report is a factual record that serves as evidence of proficiency development from academic base through CPD-type activities of Category 1 and other formal learning activities prior to registration, including in-house training. Reported activities do not require Continuing Professional Development (CPD) validation.

2. Initial Professional Development (IPD) is defined as the ongoing studies and development of engineering knowledge required to keep abreast of new technologies. The Registration Committee aims to gauge to what extent applicants kept abreast with engineering and technical developments in their fields of expertise subsequent to obtaining their qualifications.

3. List other engineering courses, seminars, conferences, symposia, workshops etc. that were attended. Please provide dates [year] attended and duration of the course in days or hours. Please indicate whether you were required to sit a written examination at the conclusion of other engineering courses. Also provide detail of papers delivered at engineering seminars, conferences, symposia, workshops, overseas study tours, etc.

4. It is not required that copies of certificates relating to relatively minor seminars or courses form part of the application.

Engineering Council of South Africa (2014-07-17) **Form C18 EDR**

EDUCATIONAL DEVELOPMENT REPORT

A	**INSTRUCTIONS** **1. Applicants not in possession of an ECSA accredited National Diploma in Engineering should complete this work based (experience) learning report. WRITE A REPORT IN ABOUT 100 WORDS ON EACH CRITERION LISTED.** **2. Reports must include reference to any *well-defined* practical examples in the work place demonstrating how the competencies were satisfied, and is not restricted to a single task or project. (Additional supporting evidence may be attached, if necessary – limited to two A4 pages).** **3. This information can be provided from education or experience, or a combination of both.** **4. The applicant must sign the completed report and also obtain a signature from his/her supervisor.** **5. The applicant may be invited to an interview to expand and/or confirm this report.**
	***Well-defined engineering problems** have the following characteristics:* a) can be solved mainly by practical engineering knowledge, underpinned by related theory; *and one or more of:* b) are largely defined but may require clarification; c) are discrete, focused tasks within engineering systems; d) are routine, frequently encountered, may be unfamiliar but in familiar context; *and one or more of:* e) can be solved by standardised or prescribed ways; f) are encompassed by standards, codes and documented procedures; requires authorisation to work outside limits; g) information is concrete and largely complete, but requires checking and possible supplementation; h) involve several issues but few of these imposing conflicting constraints and a limited range of interested and affected parties.
B.	*APPLICANT'S PERSONAL DETAILS*
	Name:	**Technical Qualifications:**
C.	*EDUCATIONAL DEVELOPMENT REPORT (OUTCOMES BASED, DURING WORK EXPERIENCE)*

Exit Level Outcome 1. The applicant displays understanding of and the ability to apply a coherent range of discipline specific fundamental principles in engineering science and technology supported by established mathematical formulas to solve *well-defined* engineering problems.

Item	Criteria	Development Report
1.1	State what mix of mathematical, natural science and engineering knowledge you applied in the solution of the *well-defined engineering problem*. State which principles and laws were used.	
1.2	Describe how you analysed the engineering materials, components, systems or processes used and provide the motivation for the specific selection.	
1.3	Describe the procedures applied for dealing with uncertainty and risk applicable to your own theoretical limitations and the use of specialists to do the work.	

Exit Level Outcome 2. The applicant displays proficiency in discipline specific engineering techniques at exit level.		
Item	**Criteria**	**Development Report**
2.1	Describe how you analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem.	
2.2	Describe how you generated possible solutions to the problem and how they were analysed and prioritised.	
2.3	State how you selected, formulated and presented the preferred solution.	

Exit Level Outcome 3. The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline for the solution of *well-defined* engineering problems.		
Item	**Criteria**	**Development Report**
3.1	Describe how you assess the method, skill or tool (including computer applications) for applicability to solving problems.	
3.2	Describe how you applied the method, skill or tool correctly to achieve the required result, and how this tested against the required results.	

Exit Learning Outcome 4. The applicant demonstrates procedural design proficiency through project work. The design problem meets the requirements of a *well-defined engineering problem* and the design approach is properly structured.		
Item	**Criteria**	**Development Report**
4.1	Describe how you formulated the design problem and how the design process was managed.	
4.2	Describe how user needs, legislation, standards and resources were acquired and evaluated.	
4.3	Describe how you performed the design task, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints.	
4.4	Describe how the selected design was evaluated in terms of impact and benefits and how this information was communicated in a technical report.	

Exit Level Outcome 5. The applicant displays proficiency in standardised experimental and research methodology.		
Item	**Criteria**	**Development Report**
5.1	Describe the plan you devised to perform the investigation stating what information was used.	
5.2	Describe the methodology you used to perform the analysis stating the equipment and/or software used.	
5.3	From the data available, describe how information was derived, analysed and interpreted to reach conclusions.	
5.4	Describe how the purpose, process and outcomes of the investigation are recorded in a technical report.	

Exit Level Outcome 6. The applicant communicates in writing at the exit level of a Ndip programme
No entry required. Assessment will be done against evidence submitted in item 5 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 7. The applicant explains and analyses impacts of engineering activity addressing issues by defined procedures.
No entry required. Assessment will be done against evidence submitted in item 6 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 8. The applicant understands and commits to professional ethical principles in engineering.
No entry required. Assessment will be done against evidence submitted in item 8 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 9. Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a technical team and to manage projects.
No entry required. Assessment will be done against evidence submitted in item 4 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 10. Engage in independent and life-long learning through well-developed learning skills.
No entry required. Assessment will be done against evidence submitted in item 11 of the Engineering Report (Form R-03-ER-PN and the Initial Professional Development Report (Form R-03-IPD-PN).

Signature of Applicant: _____Date:

Signature of Mentor / Supervisor: _____

Name of Mentor/Supervisor printed: **Tel. No.:**

(17/7/2014)

Before the Application Form is submitted to the Engineering Council please make sure that the following points have been checked and included:

1. Application fee of R _____.

2. First page of Application Form is initialled by the applicant and Commissioner of Oaths.

3. Second page of Application Form is signed by applicant, signed and stamped by the Commissioner of Oaths.

4. The names of a minimum of three referees have been given.
[The referee reports (Forms C4) must be sent under separate cover and the people chosen must be registered as either a Professional Engineer, a Professional Engineering Technologist or a Professional Engineering Technician. One referee report must be from a supervisor. Referee reports from your supervisors are preferable, and they should have played some mentoring or supervisory role in your career development.]

5. A photograph has been attached to Application Form C1.1.

6. Training and Experience Reports or Training and Experience Outlines covering **ALL** the experience gained completed on the forms provided (Forms C2.1 TER, TEO and C2.2 TES). (Photocopies of the blank forms may be made.)

7. Signatures of applicant on each Training and Experience Report or Outline.

8. Signatures of supervisor or employer on each Training and Experience Report.

9. If the applicant has his own business or signatures are unobtainable, the experience report must be accompanied by a Sworn Affidavit providing reasons for not obtaining the signature and stating that the information is true and correct, i.e. the Commissioner of Oaths must stamp and sign each experience report form.

10. Engineering report Form C2.3 ER (paragraph 2.1 of Sheet C.2) indicating the applicant's own contribution/role and responsibility in his/her work, signed by a supervisor.

11. Details of your Initial Professional Development (IPD) (using Form C5 IPD).

12. Organograms for the respective positions held during the most recent 3 years by the applicant, signed by applicant and employer - Period and position (post held) must be indicated.

13. Certified copies of certificates, diplomas, degrees, etc.

14. Completed Form C1.3 AR, one for each qualification, where applicable.

15. Proof of membership of Institutions must be provided, where applicable.

16. If you are not in possession of the National Diploma awarded by an ECSA accredited university of technology, the completed and signed Educational Development Report (Form C18 EDR).

If any of the above, do not accompany the Application Form,

your Application will be held in abeyance until receipt of the information.

Addendum A
(27 March 2012)

Voluntary Associations
recognised in terms of section 25(3) of the Engineering Profession Act, 2000 (Act No. 46 of 2000)

These Voluntary Associations applied for recognition in terms of section 36(1) of the Engineering Profession Act, 2000 (Act 46 of 2000) and were recognised by the Council in terms of Section 25(3) of the above Act.

One of the benefits of recognition is that registered members of a Recognised Voluntary Association (Categories A and B only) enjoy partial exemption from payment of their ECSA annual fees. Expiry date for these voluntary associations below is five (5) years from the date of recognition. These Acronyms appear in alphabetically order for ease of reference.

	Category A			
No	**Acronym**	**Name**	**Reference Number**	**Date Recognised**
1	**AeSSA**	Aeronautical Society of South Africa	VA A0022	11 August 2011
2	**AMMSA**	Association of Mine Managers of South Africa	VA A0031	24 January 2007
3	**AMRE**	Association of Mine Resident Engineers	VA A0032	30 November 2007
4	**CEASA**	Clinical Engineering Association of South Africa	VA A0040	26 August 2010
5	**COET**	The Chamber of Engineering Technology	VA A0001	19 October 2010
6	**CSSA**	Concrete Society of Southern Africa	VA A0019	11 August 2011
7	**ICMEESA**	Institution of Certificated Mechanical and Electrical Engineering	VA A0002	24 November 2010
8	**IEEE**	Institute of Electrical and Electronic Engineers South African Section	VA A0036	12 June 2008
9	**IMESA**	Institution of Municipal Engineering of Southern Africa	VA A0003	14 April 2011
10	**IPET**	Institute of Professional Engineering Technologists	VA A0004	19 October 2010
11	**LIASA**	Lift Inspectors Association of South Africa	VA A0026	15 March 2012
12	**NSBE**	National Society of Black Engineers	VA A0037	12 June 2008
13	**SAAMA**	South African Asset Management Association	VA A0025	14 May 2009
14	**SACEA**	South African Colliery Engineers' Association	VA A0005	11 August 2011
15	**SACMA**	South African Colliery Managers Association	VA A0029	24 January 2007
16	**SAIAE**	South African Institute of Agricultural Engineers	VA A0020	11 August 2011
17	**SAICE**	South African Institution of Civil Engineering	VA A0006	24 November 2010
18	**SAIChE**	South African Institution of Chemical Engineers	VA A0007	11 August 2011
19	**SAIEE**	South African Institute of Electrical Engineers	VA A0008	14 April 2011
20	**SAIIE**	Southern African Institute of Industrial Engineers	VA A0009	11 August 2011
21	**SAIMechE**	The South African Institution of Mechanical Engineering	VA A0021	14 April 2011
22	**SAIMENA**	South African Institute of Marine Engineers and Naval Architects	VA A0010	11 August 2011
23	**SAIMM**	South African Institute of Mining and Metallurgy	VA A0011	14 April 2011
24	**SAIRAC**	South African Institute of Refrigeration and Air-Conditioning	VA A0028	24 January 2007
25	**SAT**	Society for Asphalt Technology	VA A0043	26 August 2010
26	**STE**	Society of Telkom Engineers	VA A0035	12 June 2008

	Category B			
	Acronym	**Name**	**Reference Number**	**Date Recognised**
27	**SAFHE**	South African Federation of Hospital Engineers	VA B0023	11 April 2011
28	**SAID**	South African Institute of Draughting	VA B0033	30 November 2007
29	**SAIMC**	South African Institute of Measurement and Control	VA B0024	11 August 2011
30	**WISA**	Water Institute of Southern Africa	VA B0038	12 June 2008

	Category C			
	Acronym	**Name**	**Reference Number**	**Date Recognised**
31	**AMEU**	Association of Municipal Electricity Undertakings	VA C0027	11 August 2011
32	**BEPEC**	Built Environment Professions Export Council	VA C0044	24 November 2010
33	**CESA**	Consulting Engineers South Africa (*p.n.a. SAACE*)	VA C0013	14 April 2011
34	**IESSA**	Illumination Engineering Society of South Africa	VA C0012	11 August 2011
35	**INCOSE**	International Council of Systems Engineering (SA Chapter)	VA C0030	24 January 2007
36	**IQSA**	Institute of Quarrying Southern Africa	VA C0014	11 August 2011
37	**ITC**	Institute for Timber Construction	VA C0015	11 August 2011
38	**SAFA**	South African Flameproof Association	VA C0016	26 August 2010
39	**SAFCEC**	South African Federation of Civil Engineering Contractors	VA C0017	11 August 2011
40	**SAFPA**	South African Fluid Power Association	VA C0039	26 November 2008
41	**SAISC**	South African Institute of Steel Construction	VA C0018	11 August 2011
42	**SAIW**	South African Institute of Welding	VA C0034	30 November 2007
43	**SARF**	South African Road Federation	VA C0042	26 August 2010
44	**SASTT**	Southern African Society for Trenchless Technology	VA C0041	26 August 2010

Please note: Proof of membership must be submitted.

ENGINEERING COUNCIL OF SOUTH AFRICA

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Website: www.ecsa.co.za

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2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

DISABILITY REGISTER

Disability is defined as: "Persons with disabilities including those who have long-term physical, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others".

Registration Number: _____

Name & Surname: _____

Do you have any disability (Please tick):

Yes	No

If yes, state nature of Disability:

_____

_____

NB: Completion of this form is necessary in order to accurately reflect disability statistics in terms of Government Policy.

ENGINEERING COUNCIL OF SOUTH AFRICA

(03/04/2013) **Form E1.1**

Private Bag X 691
BRUMA 2026
Tel: (011) 607-9500
Fax: (011) 622-9295
Email: engineer@ecsa.co.za
Website: www.ecsa.co.za

Waterview Corner, 1st Floor,
2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

E C S A

Office Use
Ref.:

APPLICATION FORM

Application for Registration as: (Tick appropriate block ✓)

Candidate Engineer ☐
Please include a certified copy of your BSc Eng/B Eng Degree

Candidate Engineering Technologist ☐
Please include certified copies of your National Diploma and B Tech Degree certificates and include certified copies of your statement of results for the N Dip and the B Tech

Candidate Certificated Engineer ☐
Please include certified copies of your GCC

Candidate Engineering Technician ☐
Please include a certified copy of your National Diploma Certificate

Please consult the enclosed Information Sheet (Sheet E1.1 & 2) before completing this application.

1. General Information:

Surname:			**First Names:**	
Date of birth:			**Identity No. Or Passport No:**	
***Race Group:** Please tick the applicable block	**Asian**	**Black**	***Gender Group** Please tick the applicable block	**Mr.**_____ **Mrs.**_____ **Miss**_____ **Col.**_____ **Ms.**_____ **Dr.**_____ **Prof.**_____ **Hon.**_____
	Coloured	**White**		
Address:				**Country of normal residence:**
				Home Tel. No.: (Include area codes) **Cell no.:**
Residential Address:				**Work Tel. No.:** **Fax No.:** **E-mail:**

* Completion of this section is necessary in order to accurately reflect equity statistics in terms of Government Policy.

2. Examinations Passed:

2.1 Educational Institution	Qualifications attained	Date of final Examination month & year	*Office use*
			Recognised ☐ Not recognised ☐ Part ☐

NB: Kindly initial this page in the presence of a Commissioner of Oaths / Justice of Peace.

Applicant: ..... **Commissioner of Oaths/ Justice of Peace:** .....

2.2 Declaration in the event of qualification not yet awarded:

Name of educational institution: _____

We certify that _____ passed his/her final examination for

_____ in this department of _____

of this educational institution on _____ (date), and is now entitled to have the degree/diploma conferred on him/her.

Date: _____

.....

Registrar / Dean / Head of Department (Official stamp of educational body must be affixed)

3. Certificates of Competency:

Type of Certificate	Date of Certificate	Certificate Number	Office use
			Recognised ☐
			Not recognised ☐

4. Membership of Voluntary Associations recognised in terms of the Act:

Name of Association / Institute / Society	Membership Grade and Date of acceptance	Date of Application (If not accepted as yet)

5. Employment:

Employer	Title of Position held:	Address

6. Application Fees: (See item 6 of the Information Sheet)

My application fee of R _____ (cheque) is enclosed herewith.

7. Declaration:

I, _____ (full names) hereby apply for **Registration** as indicated on Form E1.1 and undertake to abide by all the provisions of the **Engineering Profession Act, 2000 (Act No. 46 of 2000)** and any **Rules** published thereunder, including the **Code of Professional Conduct**. I declare that Section 19(3)(a) of the Act does not preclude me from registration. I solemnly declare that, to the best of my knowledge, all the information contained herein is true.

Signature: _____

Sworn to/Affirmed before me at _____

on this the _____ day of _____(month & year).

Commissioner of Oaths / Justice of Peace: ..... *(Commissioner's stamp)*

Office Use Only

Application fee: R_____

Received by: _____ Date: _____ *(Council's stamp)*

Engineering Council of South Africa **(03/04/2013)** **Sheet E1.1**

Information Sheet for Applicants applying for Registration as a:

- **Candidate Engineer**
- **Candidate Engineering Technologist**
- **Candidate Certificated Engineer**
- **Candidate Engineering Technician**

A. General:

Your application for registration will only be considered only if the following documents are submitted:

- Completed Application Form (Form E1.1 & 2).
- Qualification documents.
- Where applicable (see item 4 in section B below) proof of membership of a recognised institute.

Please ensure the following:

- The submitted information must be complete and all applicable questions must be answered.
- The forms must be typed or printed in **black ink.**
- **Application fee** must accompany the application form. NB – See item 6 below.

Please note that it is your responsibility to ensure that all documents reach Council's offices timeously.

B. The Application Form

The following information is given to assist applicants to complete the form - the numbers refer to the equally numbered sections of the Application Form.

1. General Information:

Ensure that all personal details are correct. Please provide a definite address where Council may contact your in future, e.g. your parent's residential address, etc. and not your present hostel address.

2. Examinations Passed:

Certified copies of all qualifications are required. Copies of a certified copy is not acceptable.

Translations of foreign qualification documents are required if the originals are not in English. This includes a list of subjects (in English) studied and passed and the dates for each study year.

In the event that the qualification has not yet been awarded, section 2.2 needs to be completed by the educational institution. Ensure that the official stamp of the educational institution has been affixed.

Where applicants are applying for registration as a Candidate Engineering Technologist, full details of exemptions and recognitions given and bridging courses taken as well as all subjects passed for both the B.Tech degree and prerequisite qualifications, must be submitted.

/...

3. **Certificates of Competency:** This section is only applicable to persons applying for registration as a Candidate Certificated Engineer. A certified copy of the certificate is required. Copies of a certified copy is not acceptable.

The following Certificates of Competency are recognised:

Electrical Engineer's Certificate of Competency issued in terms of the Mines Health and Safety Act
Electrical Engineer's Certificate of Competency issued in terms of the Occupational Health and Safety Act
Mechanical Engineer's Certificate of Competency issued in terms of the Mines Health and Safety Act
Mechanical Engineer's Certificate of Competency issued in terms of the Occupational Health and Safety Act
Manager's Certificate of Competency (Metalliferous) issued in terms of the Mines Health and Safety Act
Manager's Certificate of Competency (Coal) issued in terms of the Mines Health and Safety Act
Chief Marine Engineer Officer Class 1 Certificate of Competency issued in terms of the Merchant Shipping Act

4. **Membership of recognised Voluntary Associations:**

A list of associations recognised by ECSA for purposes of a reduction in annual fees is attached as **Addendum A.** Proof of current membership of such association will qualify you for a reduction in your annual fee. Persons who have applied for membership of any of the above-mentioned associations, but who have not yet been accepted, must indicate this in the appropriate block. Membership of other institutes/societies (not recognised) may be stated, but this does not qualify the applicant for a reduction in the annual fee.

5. **Employment:** If not yet employed, but your future employer is known, please fill in this section.

6. Application Fees: **Only cheques** must accompany your application form, as **no cash or postal orders will be accepted**. If you do not have a cheque account, you may deposit cash at any Standard Bank into ECSA's account. ECSA's banking details are: Standard Bank, Eastgate Branch, Code 018505, Account number 221285938, Swift Code SBZAZAJJ. Alternatively you may make payment **(1)** via the internet, or **(2)** you may ask your bank for a bank cheque to be made out to ECSA, **(3)** contact your bank's telephone banking division to make payment into ECSA's account or **(4)** by credit card by phoning our Accounts Department. When making the deposit please ensure that your name, initials and reference number are entered in the field named "Depositor's name or reference number" and attach a copy of the proof of deposit to your application form. Refer to separate sheet regarding fees payable, visit ECSA's website at http://www.ecsa.co.za, click on "Finance" or contact the Council's offices at (011) 607-9500 to determine the current fee. *Kindly note that pro rata annual fees will be charged for the remainder of the financial year in which applicants are registered.*

7. **Declaration:** Section 19(3)(a) of the Engineering Profession Act, 2000 (Act No. 46 of 2000) reads:

"*Despite subsection (2), the Council may refuse to register an applicant -*

(i) if the applicant has been removed from an office of trust on account of improper conduct;
(ii) has been convicted of an offence in the Republic, other than an offence committed prior to 27 April 1994 associated with political objectives, and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iii) if the applicant has, subject to paragraph (b), been convicted of an offence in a foreign country and was sentenced to imprisonment without an option of a fine, or, in the case of fraud, to a fine or imprisonment or both;
(iv) if the applicant is declared by the High Court to be of unsound mind or mentally disordered, or is detained under the Mental Health Act, 1973;
(v) for as long as the applicant is disqualified from registration as a result of any punishment imposed on him or her under this Act;
(vi) if the applicant is an unrehabilitated insolvent whose insolvency was caused by his or her negligence or incompetence in performing work falling within the scope of the category in respect of which he or she is applying for registration."

You will need the services of a Commissioner of Oaths/Justice of Peace to certify the copies of documents covered by sections 2.1, 3 and 4 as well as for section 7 and the bottom of the first page of the Application Form.

As a guide the following people are Commissioners:

- A policeman in the Charge Office of any SAPS station;
- An Attorney at Law;
- An Officer in the SANDF;
- Certain Public Officials.

Addendum A
(27 March 2012)

Voluntary Associations

recognised in terms of section 25(3) of the Engineering Profession Act, 2000 (Act No. 46 of 2000)

These Voluntary Associations applied for recognition in terms of section 36(1) of the Engineering Profession Act, 2000 (Act 46 of 2000) and were recognised by the Council in terms of Section 25(3) of the above Act.

One of the benefits of recognition is that registered members of a Recognised Voluntary Association (Categories A and B only) enjoy partial exemption from payment of their ECSA annual fees. Expiry date for these voluntary associations below is five (5) years from the date of recognition. These Acronyms appear in alphabetically order for ease of reference.

	Category A			
No	**Acronym**	**Name**	**Reference Number**	**Date Recognised**
1	**AeSSA**	Aeronautical Society of South Africa	VA A0022	11 August 2011
2	**AMMSA**	Association of Mine Managers of South Africa	VA A0031	24 January 2007
3	**AMRE**	Association of Mine Resident Engineers	VA A0032	30 November 2007
4	**CEASA**	Clinical Engineering Association of South Africa	VA A0040	26 August 2010
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21	**SAIMechE**	The South African Institution of Mechanical Engineering	VA A0021	14 April 2011
22	**SAIMENA**	South African Institute of Marine Engineers and Naval Architects	VA A0010	11 August 2011
23	**SAIMM**	South African Institute of Mining and Metallurgy	VA A0011	14 April 2011
24	**SAIRAC**	South African Institute of Refrigeration and Air-Conditioning	VA A0028	24 January 2007
25	**SAT**	Society for Asphalt Technology	VA A0043	26 August 2010
26	**STE**	Society of Telkom Engineers	VA A0035	12 June 2008

	Category B			
	Acronym	Name	Reference Number	Date Recognised
27	SAFHE	South African Federation of Hospital Engineers	VA B0023	11 April 2011
28	SAID	South African Institute of Draughting	VA B0033	30 November 2007
29	SAIMC	South African Institute of Measurement and Control	VA B0024	11 August 2011
30	WISA	Water Institute of Southern Africa	VA B0038	12 June 2008

	Category C			
	Acronym	Name	Reference Number	Date Recognised
31	AMEU	Association of Municipal Electricity Undertakings	VA C0027	11 August 2011
32	BEPEC	Built Environment Professions Export Council	VA C0044	24 November 2010
33	CESA	Consulting Engineers South Africa (*p.n.a. SAACE*)	VA C0013	14 April 2011
34	IESSA	Illumination Engineering Society of South Africa	VA C0012	11 August 2011
35	INCOSE	International Council of Systems Engineering (SA Chapter)	VA C0030	24 January 2007
36	IQSA	Institute of Quarrying Southern Africa	VA C0014	11 August 2011
37	ITC	Institute for Timber Construction	VA C0015	11 August 2011
38	SAFA	South African Flameproof Association	VA C0016	26 August 2010
39	SAFCEC	South African Federation of Civil Engineering Contractors	VA C0017	11 August 2011
40	SAFPA	South African Fluid Power Association	VA C0039	26 November 2008
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42	SAIW	South African Institute of Welding	VA C0034	30 November 2007
43	SARF	South African Road Federation	VA C0042	26 August 2010
44	SASTT	Southern African Society for Trenchless Technology	VA C0041	26 August 2010

Please note: Proof of membership must be submitted.

Engineering Council of South Africa **1/4/2014**

Application and Annual Fees
1 April 2014 to 31 March 2015
(Vat included)

Application Fees (VAT included)

1. Candidate Categories : See Note 4

Within one calendar year from the date of obtaining a qualification recognised for purposes of registration	**Later** than **one** calendar year after the date of obtaining a qualification recognised for purposes of registration
465.00	**1165.00**

2. Foreign Qualification Assessment : See Note 4

All applicants with foreign educational qualifications are required to have their qualifications assessed before applying for registration	**1165.00**

3. Professional & Registered Categories : See Note 4

For Applicants with uninterrupted registration as a **Candidate**	For Applicants not registered in any of the Candidate categories or with interrupted registration as a candidate
2330.00	**4660.00**

4. International Register :

Applicable only to persons already registered with ECSA who are applying for registration on the ECSA portions of the International Registers. This is a once-off fee. No annual fees are payable.	**2330.00**

Annual Fees (VAT included)

Candidates		Professional and Registered Categories	
Partial Exemption	**No Exemption**	**Partial Exemption**	**No Exemption**
771.00	**1161.00**	**1792.00**	**2932.00**

Notes:

(1) Annual fees are payable by all persons registered for as long as they are registered with ECSA. In the first year a pro rata annual fee from the date of registration to the end of March will be raised. Thereafter, annual fees are raised every year for the period April to March.

(2) The accepted methods of payment are either by cheque from a RSA bank, credit card (Visa or MasterCard only), EFT or deposit made at any Standard Bank branch into ECSA's bank account. **No cash will be accepted at ECSA's Offices**. **Banking details: Standard Bank Eastgate Branch, Branch Code 018505, Account No. 221285938**. Swift code SBZAZAJJ. **Please do not send cheques by post**. ECSA will take no responsibility for cheques lost in the post or intercepted and fraudulently banked in another party's bank account. All persons making payment by EFT or direct deposit must ensure that the registration/application number is quoted in the "beneficiary reference number" field. If wishing to supply the name as well, please ensure that the number is quoted first to prevent part of the number being cut off at the end. If payments are made in advance of an application number having been issued to you, quoting your ID or Passport number will suffice.

(3) If an application for registration is withdrawn before it is considered by a committee, 50% of the application fee will be forfeited to cover administrative expenses. If the application has been considered by a committee and rejected, the full application fee is forfeited.

(4) No applications for foreign qualification assessment or for registration will be accepted until payment for the full application fee has been received.

(5) Persons registered in the Candidate category for more than six (6) years pay the same annual fees as persons registered in the Professional category.

(6) Appeals: When a person wishes to appeal a decision of ECSA, a fee equalling twice the amount of the application fee will be payable.

(7) Partial or full exemptions:

a. Persons applying for registration with ECSA after having had their Foreign Qualification successfully evaluated will receive a 50% of their Foreign Qualification fee as a discount against their registration application fee.

b. Registered persons who are members of Voluntary Associations (VAs) may qualify for a partial fees exemption from ECSA. Persons may view the list of acknowledged VAs on ECSA's website, or enquire with ECSA's call centre. All persons who are members of VAs in Categories A or B of the list will qualify for partial exemption of annual fees on condition that (1) membership to the VA occurs by 30 May of that year and (2) persons are in good standing with their Vas. Kindly forward proof of membership to accounts.

c. Registered persons between the age of 55 and 70 who are retired and who do not receive income from work connected to the engineering profession amounting to more than 30 hours per month or 300 hours per annum qualify for a discounted annual fee. They may enquire from Accounts@ecsa.co.za how to apply for the exemption should they have retired before 31 May.

d. Registered persons who are overseas on a permanent basis (SADC countries excluded) may qualify for a discounted annual fee. They may enquire from Accounts@ecsa.co.za how to apply for the exemption.

e. Persons over 70 are exempted fully from annual fees.

f. Full-time post graduate students are fully exempt from annual fees. They need to apply every year in April for continued exemption by supplying proof from their tertiary institution that they are still full time students.

g. An Early bird discount is granted to Registered persons if their annual fees for April to March is paid on or before 30 June. The discount is R50 for candidates and R100 for Professionals, VAT inclusive.

h. The onus is upon the Registered person to apply with ECSA's Accounts department for any exemption if not automatically granted. Backdated exemptions for previous years will not be granted. Persons who only qualify for exemption after 31 May, i.e. reaching the age of 70, going on retirement or becoming a member of a recognised VA, will only qualify for the exemption in the following year.

(8) Registered persons who are unemployed may enquire from Accounts@ecsa.co.za for extension of the payment of their annual fees. Exemption will be considered upon request if the Registered person is still unemployed at the end of March every year.

(9) Registered persons should be aware of the fact that their registrations will not be cancelled if they have not been able to obtain their CPD points within the required time. Should they on the other hand not pay their annual fees in time, and they have not made any arrangements with Accounts for an extension, their registrations will most definitely be cancelled. CPD queries must be taken up with CPD@ecsa.co.za.

(10) Once the registration of Registered persons is cancelled due to non-payment, and reinstatement is requested within twelve months from cancellation, an admin fee of R450, in addition to the annual fees in arrears, is payable. After one year of being cancelled persons will need to re-apply for registration. The normal application fees would then be raised in addition to the annual fees still owing. The re-application process is fortunately much simpler than the original process.

(11) Persons who will be residing outside the RSA borders for a year or longer should advise Accounts of their overseas postal address in order for VAT to be removed from their invoice. Invoices will still be emailed to that person.

(12) Annual fees cannot be frozen whilst working abroad. The Registered person has two choices: continue paying annual fees whilst abroad; or request cancellation of registration. If the Registered person is planning to return to the RSA after a few years it would probably be cheaper and convenient not to cancel his or her registration. Should a person cancel his or her registration, an application for re-registration and the application fee awaits that person when wishing to re-register. In addition to that, if the person wishes to retain his or her old registration number, all annual fees from date of cancellation up to the current year are payable. If the person opts for a new registration number, he or she would only be required to pay the application fee, plus any possible fees owing for the year of cancellation and the current year's annual fee.

(13) Registered persons, if their employer is willing to pay ECSA's annual fee for their employees, should advise Accounts of their employer's official name and address plus VAT number for inclusion on the invoice.

(14) Annual fees invoices can be sent to the employer directly for payment. If that is the arrangement, the Registered person will not receive an invoice. He or she would receive a statement of account, as evidence of the charge raised against the employer. Should the Registered person not agree with the charge, he or she should advise their employer not to pay the invoice. The Registered person must take up the wrong charge with Accounts and request a correction. Once the problem is resolved, Accounts will issue a revised invoice. Registered persons should not present the statement of account to the employer for payment. Employers do not pay on statement. They should already have the invoice.

(15) The fee for persons between the ages of 55 and 70 who have been granted the retired dispensation will be R191.00 (VAT inclusive).

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2 Ernest Oppenheimer Avenue
Bruma Lake Office Park
BRUMA
Johannesburg
2198

DISABILITY REGISTER

Disability is defined as: "Persons with disabilities including those who have long-term physical, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others".

Registration Number: _____

Name & Surname: _____

Do you have any disability (Please tick):

Yes	No

If yes, state nature of Disability:

_____

_____

NB: Completion of this form is necessary in order to accurately reflect disability statistics in terms of Government Policy.

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Policy on Registration of Persons in Professional Categories			
Status: Approved by Council			
Document : R-01-P	**Rev-1.3**	**24 November 2012**	

Background: The ECSA Registration System Documents

The documents that define the Engineering Council of South Africa (ECSA) system for registration in professional categories are shown in Figure 1 which also locates the current document.

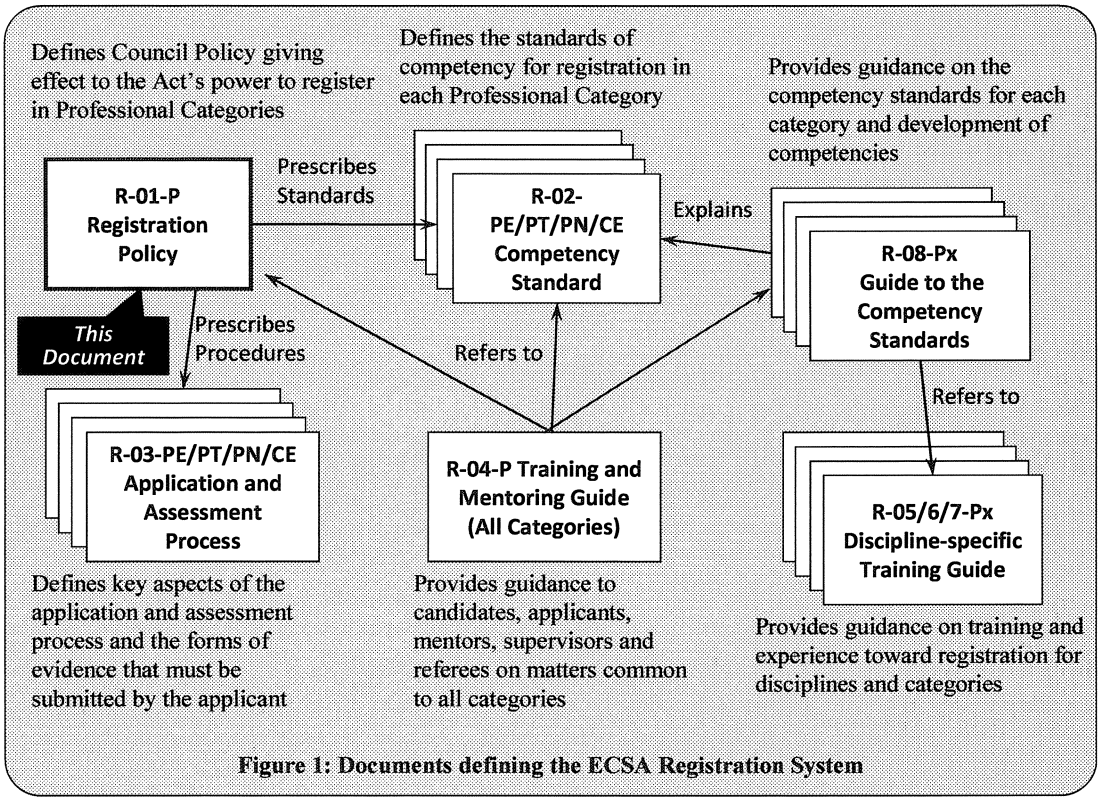

Figure 1: Documents defining the ECSA Registration System

1. Purpose

1.1 This document defines policies set by the Council of the Engineering Council of South Africa (ECSA) (Council) governing registration of persons in the four professional categories: Professional Engineer, Professional Engineering Technologist, Professional Engineering Technician and Professional Certificated Engineer and the corresponding candidate categories. The policy gives effect to provisions of the Engineering Profession Act No 46 of 2000 (the Act) with regard to professional and candidate registration. This policy encompasses the following:

Section 2 determines the standards to be demonstrated by applicants for registration in professional categories.

Section 3 defines the educational requirement for registration in candidate categories and means of satisfying this requirement.

Section 4 defines the educational requirement for registration in professional categories and means of satisfying this requirement. Sections 3 and 4 together identify seven classes of applicants that the policy covers.

Section 5 states Council's policy on applications for registration for the various types of applicants.

Section 6 states Council's policy on assessment of the competence of applicants in professional categories.

Section 7 states Council's policy on the professional development process, that is training and experience toward professional registration.

Section 8 defines the transition arrangements for introduction of this policy.

1.2 These policies are supported by operating procedures, competency standards, policies and processes for assessment of applicants, training guidelines, application guidelines, standard forms and information specific to particular work contexts. Relevant documents are referred to at various places in this policy.

2. Determination of Standards of Competence for Registration in Professional Categories

2.1 Section 18 of the Engineering Profession Act No 46 of 2000 defines categories of professional registration in which ECSA may register persons:

Professional Engineer;
Professional Engineering Technologist;
Professional Engineering Technician; and
Professional Certificated Engineer.

2.2 The essential requirements to become registered in a category are stated in Section 19(2)(a) of the Act:

19.(2) The council must register the applicant in the relevant category [text omitted] if, after consideration of the application, the council is satisfied that the applicant –

(a) In the case of a person applying for registration as a professional- has

(i) demonstrated his or her competence as measured against standards determined by the council for the relevant category of registration; and

(ii) has passed any additional examinations that may be determined by the council;

2.3 This policy gives effect to the requirements of Section 19(2)(a)(i) of the Act by:

2.3.1 Determining the expected outcomes and level of performance for demonstrating competence for each professional category in the form of competency standards together with discipline-specific requirements listed in Schedule 1. Competency standards are stated in the form of generic baseline competencies that all professionals in the category must demonstrate irrespective of discipline or speciality. Competency must be demonstrated within the practice area of the applicant.

2.3.2 Assessing the competence of an applicant for registration in a particular professional category on the basis of evidence presented by the applicant according to defined procedures.

2.3.3 Determining the educational outcomes that must be fulfilled by applicants for registration.

2.3.4 Delegating powers to register or refuse registration as a candidate or professional in the Operating Procedures for Council and Committees of Council.

2.4 Any applicant who through his or her performance demonstrates competence against the standards, including educational outcomes, will be registered provided that none of the conditions listed in section 19(3) of the Act apply in the particular case.

Schedule 1: Competency Standard applicable to professional categories

Category of Professional Registration	Competency Standard
Professional Engineer	Policy Document R2/1A, section 5, amplified by outcomes defined in Document R-02-PE. Discipline specific requirements defined in Document R-05-PE
Professional Engineering Technologist	Policy Document R2/1B, section 8, amplified by outcomes defined in Document R-02-PT Discipline specific requirements defined in Document R-05-PT
Professional Engineering Technician	Policy Document R2/1C, section 3.2 and 3.3, amplified by outcomes defined in Document R-02-PN Discipline specific requirements defined in Document R-05-PN
Professional Certificated Engineer	Document R2/1D

3. Determination of Education Requirements for Registration in Candidate Categories

3.1 The Engineering Profession Act makes provision for registration as a candidate in categories corresponding to the professional categories, namely:

Candidate Engineer;
Candidate Engineering Technologist;
Candidate Engineering Technician; and
Candidate Certificated Engineer.

3.2 A person intending to apply for registration in a professional category may first apply for registration as a candidate in the category but is not obliged to do so. Persons who have met the educational requirements by the methods defined in Section 3.4(i) to (iv) and who are undergoing training are strongly encouraged to register as candidates

3.3 The requirement for registration as a candidate in a category is stated in section 19(2)(b) of the Act:

19. (2) The council must register the applicant in the relevant category [text omitted] if, after consideration of the application, the council is satisfied that the applicant –

(a) [Text omitted]

(b) in the case of a person applying for registration as a candidate or a candidate in a specified category, has satisfied the relevant educational outcomes determined by council for this purpose, by –

(i) having passed accredited or recognised examinations at any educational institution offering educational programmes in engineering; and

(ii) having passed any other examinations that may be determined by the council; or

(iii) presenting evidence of prior learning.

3.4 An applicant for registration as a candidate in a category may satisfy the relevant educational requirements by one of the following means. The applicant:

(i) holds an accredited qualification or acceptable combination of accredited qualifications prescribed for the category; or

(ii) holds a qualification or combination of qualifications recognised under an international academic agreement relevant to the category; or

(iii) holds a qualification or combination of qualifications that have been determined by case-by-case evaluation to satisfy criteria for substantially equivalence to an accredited qualification for the category by virtue of:

(a) the qualification(s) being awarded in a jurisdiction or by a provider that has a record of quality or a quality assurance system known to ECSA; or

(b) examination of detailed documentation on the qualification(s) reflecting substantial equivalence; or

(iv) presents a combination of evidence determined by Council for the category that indicates an individual level of educational achievement against criteria that is substantially equivalent to an accredited qualification; evidence may include:

(a) qualification(s) or credits towards qualifications not already presented under (iii);

(b) completion of examinations or other forms of assessment set or prescribed by Council; or

(c) portfolio(s) of evidence of work and other outputs presented for assessment; or

(d) other evidence of prior learning presented for assessment.

3.5 The criteria for accredited programmes in case (i) are defined in document E-03-P, read with the relevant standards for the category referenced in E-03-P. The standards for accredited qualifications are defined in Schedule 2.

3.6 International educational agreements relevant to candidate and professional categories are shown in schedule 3.

Schedule 2: Engineering educational standard applicable to professional and candidate categories

Category of Registration	Educational Standard Document
Candidate and Professional Engineer	E-02-PE
Candidate and Professional Engineering Technologist[1]	E-02-PT ; or E-05-PT (with prerequisite qualification conforming to E-02-PT) ; or E-02-PE
Candidate and Professional Engineering Technician[2]	Document E-02-PN ; or E-06-PN (with prerequisite qualification conforming to E-07-PN) ; or E-02-PT ; or E-02-PE
Candidate and Professional Certificated Engineer	Document E-02-CE
1: An accredited BTech (with a prerequisite accredited National Diploma or equivalent) continues to be recognised as meeting the educational requirements 2: An accredited National Diploma continues to be recognised as meeting the educational requirements	

Schedule 3: International educational agreements applicable to candidate and professional categories

Category of Registration	Educational Standard
Candidate and Professional Engineer	Washington Accord
Candidate and Professional Engineering Technologist	Sydney Accord
Candidate and Professional Engineering Technician	Dublin Accord
Candidate Certificated Engineer	Nil

3.7 The policy and procedures for accrediting qualifications are defined in documents E-10-P to E-16-P. Criteria, policies and procedures for considering applicants under cases (iii) and (iv) are defined in document E-17-P.

3.8 Persons who do not meet the educational requirement for candidate under (i), (ii) or (iii) fall into case (iv) and must be assessed individually. A qualification may be accredited, recognized or evaluated as partially satisfying the education requirement. In such cases, applicants may make up deficits by further learning. An applicant under (iv) may, in addition to evidence already presented, be required to undergo assessment of various forms including examinations. If the applicant's qualifications and other evidence are evaluated as being substantially equivalent to an accredited South African qualification, the applicant is eligible for registration as a candidate in the relevant category.

3.9 A person is considered to have met the education requirements for a category at the time of completion of a qualification or qualifications that are accredited, recognised or evaluated as substantially equivalent in terms of section 3.4(i), (ii) or (iii). In the case of a person who meets the educational requirements by individual assessment in terms of section 3.4(iv), the time of meeting the education requirement is the last date of completing requirements by assessment.

4. Determination of Education Requirements for Registration in Professional Categories

4.1 An applicant who is already registered as a candidate in the category corresponding to that applied for at professional level is not required to satisfy further educational requirements under 19(2)(a)(ii).

4.2 In the case of an applicant for registration who is not registered as a candidate in the relevant category at the time of the application or has not by prior evaluation or assessment satisfied the educational requirements, the applicant must in terms of section 19(2)(a)(ii) of the Act demonstrate a level of educational achievement as prescribed for the category by one of the mechanisms defined in section 3.4.

Applicants Holding Accredited, Recognised or Other Qualifications

4.3 The first four mechanisms have identical requirements to those for registration as a candidate, namely methods (i), (ii), (iii) and (iv) defined in section 3.4.

4.4 Criteria and processes for assessing the educational achievement of applicants for registration are as defined in Sections 4.5 to 4.8 and in document E-17-P for candidate applicants.

Applicants Registered with Signatories to International Agreements on Registration

4.5 An applicant for professional registration under an international agreement is deemed to meet ECSA's education requirements for registration if the applicant:

(v) in the case of a person professionally registered by a body with which ECSA has a mutual exemption agreement, has satisfied educational requirements defined under that agreement; or

(vi) in the case of a person applying for registration as a Professional Engineer who is registered on a section of the International Register administered by another signatory to the Engineers Mobility Forum, holds a qualification or combination of qualifications determined by the original registering signatory to be substantially equivalent to a Washington Accord qualification; or

(vii) in the case of a person applying for registration as a Professional Engineering Technologist who is registered on a section of the International Register administered by another signatory to the Engineering Technologists Mobility Forum (ETMF), holds a qualification or combination of qualifications determined by the original registering signatory to meet the educational requirements specified in the ETMF Constitution and Agreement.

Special provisions

4.6 An applicant who seeks to meet the educational requirement by methods (i), (ii) or (iii) above and who provides evidence that he or she has been continuously in training or practice in the relevant category for at least ten years since graduation and whose claim is verified via a

summary of training and experience, may be evaluated against the educational standards for the category prevailing at the time that he or she completed the educational qualification.

4.7 An applicant who seeks to meet the educational requirements by method (iv) above, may present evidence of satisfying educational criteria by evidence of performance against a corresponding outcome at the professional level, as specified in document E-17-P.

4.8 An accredited, recognized or evaluated educational qualification must have a knowledge profile appropriate to the discipline of the applicant's work experience. If this requirement is not met, an applicant for registration may be required to demonstrate during the registration process that he or she has an appropriate body of knowledge for the discipline in which he or she practises.

4.9 Where an applicant for educational evaluation does not demonstrate substantial equivalence against the substantial equivalence criteria, the applicant may undertake further learning and provide evidence of satisfying outstanding requirements within three years of the date of the communication informing the applicant of the educational deficiencies. No further fee is payable if the required evidence is submitted within the period.

5. Application for Registration

5.1 Section 19(1) of the Act requires a person wishing to register to submit an application and evidence of competence in the prescribed form.

5.1.1 The applicant must provide his or her history of education, training and experience.

5.1.2 An application for registration as a professional must contain evidence of competence in the required form.

5.1.3 An applicant must make a declaration that:

(a) If registered, he or she is subject to the ECSA Code of Conduct;

(b) He or she is subject to requirements to renew registration from time to time, linked to Continuing Professional Development requirements; and

(c) He or she is not subject to any of the conditions listed in section 19(3) of the Act.

5.2 The process of applying for registration as a candidate or as a professional is detailed in document R-03-P.

5.3 A person who is registered as a candidate in the relevant category may submit an application for registration, with due regard to the normal minimum period of training and experience listed in Schedule 7;

5.4 A person who is not registered as a candidate who claims to meet the educational requirement by mechanisms (i) or (ii) in section 3.4, may apply for recognition of educational achievement within an application for professional registration;

5.5 A person who is not registered as a candidate who claims to meet the educational requirement by mechanisms (iii) or (iv) in section 3.4, is required to apply for evaluation of educational achievement prior to submitting an application for candidate or professional registration;

5.6 A person who seeks professional registration with ECSA in terms of an international register agreement must demonstrate in an interview that he or she is proficient at a level appropriate to professional practice, has knowledge of legislative and technical conditions applicable to his or her field of practice in South Africa, has language proficiency adequate for practice in South Africa and meets any other requirements specified in terms of the applicable international agreement.

6. Policy and Process for Assessment of Competence

6.1 Each applicant must provide evidence of competence from his or her work, irrespective of the development pathway followed toward registration. Failure to provide evidence or information may result in refusal of the application. This requirement is never waived except where international agreements entered into by ECSA provide for the recognition of competence, including educational achievement, determined by another signatory.

6.2 Competency of an applicant for registration must be assessed by a process of peer judgement using this policy and the process defined in document R-03-P and related documents. The assessment process must determine whether the applicant has provided evidence of competence against each outcome prescribed in the competency standards for the category and discipline specific requirements ("the prescribed standards") and make an integrated judgement of the applicant's competence.

Table 1: Summary of Authority and Functions (Informative)

Responsibility	Committee
Evaluate Engineering Qualifications	Engineering Programmes Qualifications Evaluation Committee
Evaluate Technology Qualifications	Technology Programmes Qualifications Evaluation Committee
Consider applicants and recommend	Assessing Committees (See below)
Approve registration of successful applicants	Registration Committee, except where delegated to Professional Advisory Committees (PAC)
Approve deferment of application	
Recommend refusal of professional registration to Central Registration Committee	Registration Committees (on the recommendation of PAC, where applicable)
Recommend refusal of candidate registration to Central Registration Committee	
Refuse registration as professional	Central Registration Committee
Refuse registration as candidate	
Consider appeals against registration decisions	Council

6.3 Council has via the Operating Procedures delegated responsibility and authority to various committees. For information, decision making powers related to registration are summarized in Table 1.

6.4 The relevant Registration Committee or Professional Advisory Committee is designated in the Operating Procedures as the body responsible for assessing the competence of applicants for a category or discipline within a category (the "assessing committee"). An application for registration as a professional must be allocated to an assessing committee depending on the discipline into which his or her work experience principally falls.

6.5 The assessment process must satisfy section 33 of the Constitution, namely, it must be lawful, reasonable and procedurally fair, and that if registration is deferred or refused, written reasons must be given. The process must be transparent to applicants, mentors and supervisors.

6.6 Each registration committee, or committee delegated the function of assessing the competence of applicants, must maintain a panel of peer assessors for the purpose of experience appraisal of applicants (section 6.10), extended experience appraisal, and professional reviews (section 6.11). Peer assessors for applicants in a category must:

6.6.1 Be registered in an appropriate category;

6.6.2 Have contextual knowledge in the area of the applicant's offered evidence;

6.6.3 Be skilled in the method of competency-based assessment to the satisfaction of the registration committee.

Assessors may be members of a registration committee or assessing committee.

6.7 Council may enter into an agreement with a recognised voluntary association (VA) having a disciplinary focus that aligns with the requirements of an assessing committee under which the VA assists in identifying assessors for listing as in section 6.6 and conducting experience appraisals and professional reviews or extended experience appraisal of applications.

Screening of Applications

6.8 On receipt of an application together with supporting documents, including referees' reports, the application must be screened for completeness by a designated staff member who may be assisted if necessary by a peer assessor who is a member of the assessing committee. After screening, the following actions are available:

6.8.1 Refer the application for assessment as in sections 6.9 to 6.24; or

6.8.2 Request further information from the applicant; or

6.8.3 In cases where the applicant fails to provide the requested information refer the application to the registration committee for that committee to recommend refusal of the application to the Central Registration Committee.

Two-stage assessment of competence

6.9 The assessment of an applicant's competence for registering as a professional in a category has two components, the Experience Appraisal and Professional Review.

6.10 The Experience Appraisal (EA) is a documentary assessment of the applicant's evidence of competence, including record of training and experience, ~~and~~ record of initial professional development activities and engineering report, to determine whether evidence presented indicates that he/she has achieved the level of competence specified in the prescribed standard for the category through evidence from work. Indications of competency from the experience appraisal stage must be confirmed at the Professional Review.

6.11 The Professional Review (PR) is an integrative assessment of the applicant's competency, including professional attributes specified in the standard for the category via a comprehensive review of the applicant's evidence and an interview.

Schedule 6: Requirement for interview and further assessment

Category of Professional Registration	Extended Experience appraisal	Additional Tests
Professional Engineer	Not permitted	Confirmatory, if required
Professional Engineering Technologist	Permitted	Confirmatory, if required
Professional Engineering Technician	Permitted	Confirmatory, if required
Professional Certificated Engineer	Not permitted	Confirmatory, if required

Special Provision

6.12 Council may permit a category of registration where resources are not available to conduct the professional reviews to conduct an extended experience appraisal. An extended experience appraisal is an assessment of the applicant's record of training and experience to determine whether the applicant has demonstrated that he/she has achieved the required level of competence specified in the prescribed standards. This process may include an interview and additional tests in cases where competency cannot be determined fully from documentation supplied or confirmation of evidence is required. Schedule 6 indicates categories where Council permits the extended experience appraisal to be applied.

Conducting the Experience Appraisal and Professional Review

6.13 The experience appraisal must be conducted by not less than four assessors qualified as in section 6.6.

6.14 Each assessor in the experience appraisal must rate the evidence provided by the applicant against the prescribed standard for the category and formulate an integrated judgement of the competence of the applicant. Each assessor must make a recommendation from the following:

6.14.1 The applicant has provided evidence indicative of competence against the prescribed standard. An assessor may identify issues relating to particular criteria to be confirmed or further assessed during the professional review; or

6.14.2 The applicant has not provided evidence indicative of competence against particular criteria in the prescribed standards. An assessor may indicate that:

(a) it is feasible for the applicant to take steps to obtain the outstanding evidence of competency within a period of 12 months; or

(b) that further information is required from the applicant and that this should be elicited via an interview.

6.15 After review by the chairperson of the assessing committee, the individual reports and recommendation of the assessors as in 6.14 lead to the following actions:

6.15.1 If not less than three assessors recommend as in 6.14.1 and no more than one recommends as in 6.14.2, the application proceeds to the professional review; or

6.15.2 If more than one assessor recommends as in 6.14.2, the application must be referred to the assessing committee, subject to 6.15.3

6.15.3 If one or more evaluator recommends as in 6.14.2(b), the assessing committee chairperson may determine that an interview be held to obtain information or may refer the application to the assessing committee.

6.15.4 After the interview, the evaluators must come to a recommendation as in 6.14.1 or 6.14.2(a).

6.16 In the case of referral of an application to the assessing committee in 6.15.2, the assessing committee must determine the course of action from the following:

6.16.1 refer the applicant for professional review; or

6.16.2 defer the application in terms of section 6.21; or

6.16.3 refer the application to the registration committee with a recommendation that the application be refused

Extended Experience Appraisal

6.17 In the case of an extended experience appraisal, the assessors, having considered the application individually, must submit a joint report to a sub-committee constituted by the assessing committee with a recommendation from the following:

6.17.1 The applicant has provided evidence of competence against the prescribed standard and should be registered; or

6.17.2 The applicant has not provided evidence of competence against particular criteria in the prescribed standards and the application should be refused.

6.17.3 The applicant has not provided evidence of competence against particular criteria in the prescribed standards. The assessors recommend that application be deferred in terms of section 6.21 as it is feasible for the applicant to take steps to obtain the outstanding evidence of competency within a period of 12 months.

6.18 When the recommendation in 6.17.1 is not contemplated, the subcommittee may, on the recommendation of the assessors, decide that the applicant be interviewed to evaluate aspects of his or her competence identified by the assessors. Interviews must be conducted by not less than two interviewers who may have been assessors for the particular case. The interview report must be considered by the subcommittee before making a final joint recommendation from those referred to in 6.17.

Professional Review

6.19 The professional review must be conducted by not less than two reviewers who may also have served as experience assessors for the particular case.

6.20 The professional reviewers must submit a joint summative report and recommendation to the assessing committee. The report must take the experience appraisal and referee reports into account. The reviewers may recommend as follows:

6.20.1 The applicant has provided evidence of competence against the prescribed standard and should be registered; or

6.20.2 The applicant has not provided evidence of competence against particular criteria in the prescribed standards for the reasons stated.

6.21 Where an applicant for registration as a professional does not provide evidence of competence against part or parts of the prescribed standards, the application may be deferred by the assessing committee for a period not exceeding twelve months if it is considered feasible for the candidate to obtain evidence of satisfying outstanding requirements in that time.

6.21.1 The period of twelve months commences on the date of the communication informing the applicant of the deferment and reasons for deferment.

6.21.2 No further fee is payable if the required evidence is submitted within the period.

6.21.3 If the period of deferral is exceeded, the applicant must make a new, complete application, pay the prescribed fee and provide evidence of competence against all requirements.

6.21.4 A deferment in terms of section 6.21 may, on application stating the grounds for the extension made prior to the expiry of the twelve month period, be extended for a further twelve months.

6.21.5 An applicant may on submission of new evidence after a deferment be granted a further deferment of up to twelve months.

6.21.6 An applicant may only once benefit by the concession in 6.21.4 or 6.21.5.

6.21.7 In providing evidence after a deferral, an applicant is not required to provide new evidence against the requirements already satisfied.

6.22 When an application for registration as a candidate or registration as a professional in a category is deferred or refused, the persons assessing the application and the responsible committee must identify the outcomes that have been satisfied and formulate a *deficiency statement*, that is, written reasons for deferment of the application or refusal of registration in terms of the prescribes standards applicable in the particular case.

Assessing Committee Actions

6.23 After the process defined in sections 6.6 to 6.22, the designated assessing committee is required to receive the original application, collated reports from the professional review, reports of experience assessors and referees and must make a determination as follows:

6.23.1 An assessing committee that has delegated authority to register must:

(a) make a decision to register an applicant who has demonstrated competence against the prescribed standards; or

(b) defer consideration of the application in terms of section 6.21 stating reasons for the deferral; or

(c) in the case of an applicant who has not demonstrated competence against the prescribed standards, recommend to the registration committee that it should refuse registration, stating the reasons for refusal; or

(d) Refer the application back for consideration by the parties appropriate to the case.

6.23.2 An assessing committee that does not have delegated power of Council to register must:

(a) in the case of an applicant who has demonstrated competence against the prescribed standards, recommend to the registration committee that it register the applicant; or

(b) stating the reasons, recommend to the registration committee that it defer consideration of the application in terms of section 6.21; or

(c) in the case of an applicant who has not demonstrated competence against the prescribed standards, recommend to the registration committee that it refuses registration, stating the reasons for refusal; or

(d) Refer the application back for consideration by the parties appropriate to the case.

6.23.3 An assessing committee contemplating a decision under 6.23.1(c) or 6.23.2(c) may require an applicant to undertake an additional test or tests. Further tests may include, but are not restricted to, oral presentations and essays written under examination conditions.

6.24 The relevant assessing committee must moderate all recommendations from the professional review or extended experience appraisal. The registration committees must further moderate recommendations to refuse registration before forwarding these to the Central Registration Committee.

6.25 When an application for professional registration has been refused, the applicant may submit a new application for registration as soon as evidence of competence against all identified deficient outcomes is available. Provided that the new application is made within five years, and a record of professional development has been maintained, credit for competence recognised against specific outcomes stands.

Date of Registration

6.26 The Date of Registration is that date on which Council, through the committee with delegated power to register for the category, decided to register the applicant. This date appears on original and replacement registration certificates.

7. Professional Development toward Registration

7.1 The process of experience and training that brings an individual to the level of competency required for registration is not prescribed by ECSA; the level of achievement is however defined in the competency standards. It is recognised that many routes to attaining this competency exist. Guidelines to employers, mentors and aspiring registrants are given in document R-04-P. These guidelines, together with an accredited qualification define a benchmark route to developing the competency required for registration. Candidates proceeding to registration by any route are assessed identically according to the competency standards and defined procedures.

7.2 The training guidelines in R-04-P may be supplemented by guidelines for particular categories of registration and work contexts. Examples of work contexts include but are not limited to categories of registration, engineering disciplines within each category, industry sectors and academic staff at higher education institutions. Context-specific guidelines must be approved by the relevant registration committee.

Period of Training

7.3 ECSA does not normally consider an application for registration unless the period of training and experience shown in Schedule 7 has been completed.

7.3.1 In the case of a person meeting the education requirements under sections 3.4(i), (ii) or (iii), the required period starts not earlier than the date of meeting the requirement for qualification(s).

7.3.2 In the case of a person who meets the education requirement by assessment in terms of section 3.4(iv) the educational requirement may be completed at any time before applying for registration.

Schedule 7: Normal minimum duration of education, training and experience

Category of Professional Registration	Education	Training and Experience
Professional Engineer	4 years	3 Years
Professional Engineering Technologist	3 years	4 years
	4 years	3 years
Professional Engineering Technician	2 years	4 years
	3 years	3 years
Professional Certificated Engineer	Achieve GCC	3 years
Note: Academic programmes referred to above must be accredited, recognised or evaluated as equivalent, with individual assessment where required.		

Employer's Commitment and Undertaking and Candidacy Programmes

7.4 A Commitment and Undertaking (C&U) is an agreement entered into between an employer and ECSA under which the employer commits to the train candidates to the standard required for registration in an identified professional category. A commitment and undertaking may be entered into for one or more of the professional categories. In entering a C&U, the employer signifies the intent to:

(a) Structure and execute training of candidates in accordance with the competency statements, policies and guidelines laid down by ECSA for the applicable category of registration;

(b) Ensure adequate supervision of candidates by registered persons;

(c) Register mentors with ECSA and ensure adequate mentoring of candidates; and

(d) Provide regular guidance to the candidates through competent supervisors and mentors.

7.5 A candidacy programme is a framework for employers to plan and execute training toward registration in a professional category. A candidacy programme is one means of implementing a Commitment and Undertaking. A candidacy programme has the following components:

7.5.1 The candidate is employed in a candidacy programme by the employer who will provide the training and experience. The objective of the programme is for the candidate to become registered with ECSA in the appropriate category.

7.5.2 The competency standards generated by ECSA are used as workplace standards. They define the exit level outcomes of the training programme; the employer must define the process to build up competence to the required level. The employer must make specific reference to the workplace standards in its workplace skills plan. In

addition, context-specific training guides generated by the sector may be used. These must not conflict with the generic competencies but rather provide amplification in the particular work context.

7.5.3 If not already registered, the trainee should register in the appropriate candidate category with ECSA as early as possible in the training period.

7.5.4 The employer provides a supervisor internal to the company and a mentor who should preferably be internal but may be external. While supervisor and mentor may change from time to time, employers must ensure continuity of supervision and mentoring.

7.5.5 Structured work experience is provided by the employer to the candidate. This work is managed using a standard format training record. The candidate's progress is assessed on an ongoing basis by supervisors and mentors, also using the training record for documentation.

7.5.6 When the candidate is considered to be ready for registration, he or she applies to ECSA for registration. Evidence of competence is provided as required by ECSA, including the training record. The summative assessment of competence is performed by ECSA.

7.5.7 Success in attaining registration is considered to be evidence of the quality of the training programme. The workplace learning programme is not subject to formal quality assurance.

Requirements on Candidates Supervisors, Mentors and Referees

7.6 Various sections of the Act require registration for particular aspects of work. Section 18(2) requires registration for practice in a professional category. Section 18(3) requires a person who practises in a consulting capacity to be registered in an appropriate category. Section 18(4) requires a person registered as a candidate to work under the supervision and control of a registered person.

7.7 Section 26 empowers and requires ECSA to identify work that must be performed or supervised and controlled only by professionally registered persons who must take responsibility for the work. When this identified work is promulgated, it may place further restriction on trainees who are not registered as candidates.

7.8 In such cases, the candidate or trainee who is not registered as a candidate in a professional category must work under the supervision of a registered person. Supervision may not be direct but the supervisor must take responsibility for the candidate/trainee's work from a fully informed position. The supervisor would normally guide and mentor the candidate's development. The candidate may be mentored by another registered person in the employer organisation

7.9 If employers do not have suitable persons as internal mentors in their employ, they must ensure that external mentors be appointed. Mentors thus appointed should be sensitive to any limitations which the employer may wish to set in any given situation. Such mentors cannot

take responsibility for work performed by the trainee. Thus, the supervisor and mentor, if different from the supervisor, must both be registered in an appropriate professional category.

7.10 The training guide, R-04-P, gives guidance on ways of dealing with the problem that the candidate must demonstrate the ability to take responsibility but is not allowed to do so.

Advanced Academic Programmes

7.11 Applicants for professional registration who have completed higher education programmes beyond the level required for registration in a category may offer appropriate aspects of the advanced programme as part of the evidence of competence, provided that the aspects of the programme so offered provide evidence of demonstrating specific outcomes at the required level.

7.12 The contribution of the advanced higher education programme to demonstrating relevant competencies must be certified by a supervisor or head of department who is professionally registered in the category in question.

Continuing Professional Development Type Activities Prior to Registration

7.13 Learning Outcome 11 of the competency standards requires the applicant to demonstrate ability to manage and undertake ongoing professional development. Applicants are therefore required to plan and undertake activities during their training, referred to as initial profession development (IPD) to distinguish it from post-registration CPD performed to maintain registration.

Training Outside the Republic of South Africa

7.14 Applicants who received their practical training in engineering work abroad will be considered in accordance with the principles and requirements contained in this Policy Statement.

Obligations on Attaining Registration

7.15 Once an applicant has become registered, the Act and ECSA's policy on renewal of registration impose several obligations on the person. First, the ECSA Code of Conduct applies as would any ECSA-approved code of practice. This includes the requirement that the person must work within the limits of competence. Second, the registered person is subject to CPD requirements. Third, annual fees must be paid.

8. Transition from Previous System in Force

8.1 For the categories of Professional Engineer, Professional Engineering Technologist and Professional Engineering Technician, the adoption of formal competency standards brings about detailed changes in the method of assessing candidates and the focus of training and

development toward professional competency. Council will therefore publish transitional arrangements and requirements as required.

8.2 This policy, together with supporting procedures and guidelines come into force on the dates shown in Schedule 8 for each category. The policies repealed and the dates of repeal are listed in schedule 9.

Schedule 8: Commencement of application of this policy to individual categories

Category of Registration	**Sections**	**Commencement Date**
Candidate Engineer		
Candidate Engineering Technologist		
Candidate Engineering Technician		
Candidate Certificated Engineer		
Professional Engineer		
Professional Engineering Technologist		
Professional Engineering Technician		
Professional Certificated Engineer		

Schedule 9: Repeal of existing policies and guidelines for individual categories

Category of Registration	**Sections**	**Commencement Date**
Candidate Engineer		
Candidate Engineering Technologist		
Candidate Engineering Technician		
Candidate Certificated Engineer		
Professional Engineer		
Professional Engineering Technologist		
Professional Engineering Technician		
Professional Certificated Engineer		

Appendix A: Definitions and Abbreviations

Definitions

Accreditation Criteria: see document E-01-P

Accredited Qualification: see document E-01-P

Assessing Committee: The committee delegated the function of assessing applications for registration.

Benchmark Route: the normal process required to attain registration, consisting of the completion of an accredited, recognised or evaluated equivalent qualification and a well-structured and effectively executed programme of training and experience for the category of registration.

Competency Assessment: is a summative assessment of an individual's competency against the prescribed standard based on evidence from the individual's work, reports by qualified observers, and other tests that may include a professional review.

Competency Standard: statement of competence required for a defined purpose.

Continuing Professional Development: the systematic, accountable maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for the execution of professional and technical duties throughout an engineering practitioner's career.

Experience Appraisal: See section 6.10.

Extended Experience Appraisal: See section 6.12

Generic Baseline Competency: the competency for a category of professional defined in terms of outcomes, including the expected level of performance, that can be demonstrated in a range of occupational contexts.

Initial Professional Development: systematic participation in the activities typical of Continuing Professional Development but carried out prior to registration.

Integrated performance: means that demonstration of competence via an activity requires several outcomes to be satisfactorily attained.

Mentor: a professionally registered person who guides the competency development of a candidate in an appropriate category.

Normal Route: synonymous with benchmark route.

Practice Area: a distinctive area of knowledge and expertise developed by an engineering practitioner by virtue of the path of education, training and experience followed.

Prescribed Standards: the competency standards (outcomes) for the category and discipline specific requirements (if any) that must be satisfied by an applicant for registration.

Professional Review: See section 6.11.

Recognised Qualification: see document E-01-P.

Standard: in the educational context, see document E-01-P; in the registration context, see *Competency Standard* and *Prescribed Standard*

Substantial Equivalence: applied to educational programmes means that two programmes, while not meeting a single set of criteria are both acceptable as preparing their respective graduates to enter training and experience toward registration.

Supervisor: a professionally registered person who oversees, controls and takes responsibility for engineering work performed by a candidate.

Abbreviations

CPD: Continuing Professional Development
CA: Competency Assessment
C&U: Commitment and Undertaking
ECSA: Engineering Council of South Africa
EA: Experience Appraisal
IPD: Initial Professional Development
PR: Professional Review

Revision History

Version	Date	Status/Authorised by	Nature of Revision
Rev 1.0:	25 Nov 2010	Council	
Rev 1.1	17 March	Approved by Council	Editorial changes made after Council
Rev 1.2	11 Jan 2012	Approved by Council	Change to section 6.20.2
Rev 1.3	1 Aug2012	For Approval by Council	Changes to Schedule 2, sections 3.6, 4.2 6.10, 6.11, 6.23, 7.3, and Schedule 7
Rev 1.3	24 Nov 2012	Approved by Council	

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Competency Standard for Registration as a Professional Engineer			
Status: For approval of amendments by Council			
Document : R-02-PE	**Rev-1.3**	**2 August 2011**	

1. Purpose

1.1 This Standard defines the competence required for registration as a Professional Engineer. Definitions of terms having particular meaning within this standard are given in the text and in Appendix A.

2. Demonstration of Competence

2.1 Competence must be demonstrated within *complex engineering activities,* defined below, by integrated performance of the outcomes defined below at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Guidelines.

2.1.2 **Level Descriptor:** *Complex engineering activities* have several of the following characteristics:

(a) *Scope* of activities may encompass entire complex engineering systems or complex subsystems;
(b) A *context* that is complex and varying, is multidisciplinary, requires teamwork, unpredictable, may need to be identified;
(c) Requires diverse and significant *resources:* including people, money, equipment, materials, technologies;
(d) Significant *interactions* exist between wide- ranging or conflicting technical, engineering or other issues;
(e) Are *constrained* by time, finance, infrastructure, resources, facilities, standards & codes, applicable laws;
(f) Have significant *risks* and *consequences* in a range of contexts.

2.1.3 *Activities* include but are not limited to: design; planning; investigation and problem resolution; improvement of materials, components, systems or processes; implementation, manufacture or construction; engineering operations; maintenance; closure or disposal; project management; research, development and commercialisation.

3. Group A Outcomes: Engineering Problem Solving

3.1 **Outcome 1:-** Define, investigate and analyse *complex engineering problems.*

3.1.1 ***Complex Engineering Problems*** *have the following characteristics:*

(a) require in-depth fundamental and specialized engineering knowledge;

and one or more of:

(b) are ill-posed, under- or overspecified, requiring identification and refinement;

(c) are high-level problems including component parts or sub-problems;

(d): are unfamiliar or involve infrequently encountered issues;

and one or more of:

(e) solutions are not obvious, require originality or analysis based on fundamentals;

(f) are outside the scope of standards and codes;

(g) require information from variety of sources that is complex, abstract or incomplete;

(h) involves wide-ranging or conflicting issues: technical, engineering and interested or affected parties;

and one or both of:

(i) requires judgement in decision making in uncertain contexts;

(j) have significant consequences in a range of contexts.

3.1.2 **Range Statement:** The problem may be a design requirement, an applied research and development requirement or a problematic situation in an existing component, system or process. This outcome is concerned with the understanding and judgement of a problem: Outcome 2 is concerned with the solution.

3.2 **Outcome 2:-** Design or develop solutions to *complex engineering problems.*

3.2.1 **Range Statement:** The solution may be the design of a component, system or process or a recommendation of the remedy to a problematic situation.

3.3 **Outcome 3:-** Comprehend and apply advanced knowledge: principles, specialist knowledge, jurisdictional and local knowledge.

3.3.1 **Range Statement:** Applicable knowledge includes:

(a) Specialist knowledge that has depth in the practice area and is underpinned by the fundamental knowledge of an engineering discipline or cross-disciplinary area. In-depth specialist knowledge in practice area supports a fundamentals-based, first principles analytical approach, building models as required.

(b) A working knowledge of interacting disciplines (engineering and other) to underpin teamwork

(c) Jurisdictional knowledge includes legal and regulatory requirements as well as locally relevant codes of practice. As required for practice area, a selection of: law of contract, health and safety, environmental, intellectual property, contract administration, quality management, risk management maintenance management, regulation, project and construction management

4. Group B Outcomes: Managing Engineering Activities

4. 1 **Outcome 4:-** Manage part or all of one or more *complex engineering activities.*

4.1.1 **Range Statement:** Management is directed at achieving engineering results through management of people, resources, processes, systems and money and involves:
(a) Planning of *complex engineering* activities;
(b) Organising *complex engineering* activities;
(c) Leading engineering activities;
(d) Controlling *complex engineering* activities;

4.2 **Outcome 5:-** Communicate clearly with others in the course of his or her engineering activities.

4.2.1 **Range Statement:** Communication involves strategic, managerial, technical and wider impacts of engineering work. Material communicated includes concepts, analyses, proposals and informative subjects. The audience includes peers, superiors, persons implementing designs and other work, persons in other disciplines, clients and wider stakeholders. Communication functions must be performed reliably and repeatably.

5. Group C Outcomes: Impacts of Engineering Activity

5.1. **Outcome 6:-** Recognise and address the reasonably foreseeable social, cultural and environmental effects of *complex engineering activities.*

5.2. **Outcome 7:-** Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her *complex engineering activities.*

5.2.1 **Range Statement for outcomes 6 and 7:** Impacts and Regulatory requirements include:
(a) Direct and indirect, immediate and long-term effects of engineering solutions;
(b) Application of principles of sustainability;
(c) Regulatory requirements that are explicit for the context and are generally applicable.

6. Group D Outcomes: Exercise judgement, take responsibility and act ethically

6.1. **Outcome 8:-** Conduct engineering activities ethically.

6.1.1 **Range Statement:** Ethical behaviour is at least that defined by the Code of Conduct.

6.2 **Outcome 9:-** Exercise sound judgement in the course of *complex engineering activities.*

6.2.1 **Range Statement for Outcomes 8 and 9:** *Judgment* in decision making involves:
(a) taking diverse, wide ranging risk factors into account; *or*
(b) significant consequences in a range of contexts; *or*
(c) wide ranges of interested and affected parties with widely varying needs.

6.4 **Outcome 10:-** Be responsible for making decisions on part or all of *complex engineering activities.*

6.4.1 **Range Statement:** *Responsibility* exercised for outcomes of significant parts of one or more *complex engineering activities*.

7. Group E Outcomes: Continuing Professional Development

7.1 **Outcome 11:**-Undertake professional development activities sufficient to maintain and extend his or her competence.

7.1.1 **Range Statement:** Professional development involves:
(a) Planning own professional development strategy;
(b) Selecting appropriate professional development activities; and
(c) Recording professional development strategy and activities;
while displaying independent learning ability;

Appendix A: Definitions

"***Engineering science***" means a body of knowledge, based on the natural sciences and using a mathematical formulation where necessary, that extends knowledge and develops models and methods to support its application, solve problems and provide the knowledge base for engineering specializations.

"***Engineering problem***" means a problematic situation that is amenable to analysis and solution using engineering sciences and methods.

"***Ill-posed problem***" means a problem whose requirements are not fully-defined or may be defined erroneously by the requesting party;

"Integrated performance" means that an overall satisfactory outcome of an activity requires several outcomes to be satisfactorily attained, for example a design will require analysis, synthesis, analysis of impacts, checking of regulatory conformance and judgement in decisions.

"Level descriptor" means a measure of performance demands at which outcomes must be demonstrated.

"***Management of engineering works or activities***" means the co-ordinated activities required to:
(i) direct and control everything that is constructed or results from construction or manufacturing operations;
(ii) operate engineering works safely and in the manner intended;
(iii) return engineering works, plant and equipment to an acceptable condition by the renewal, replacement or mending of worn, damaged or decayed parts;
(iii) procurement within engineering works or operations
(iv) direct and control engineering processes, systems, commissioning, operation and decommissioning of equipment;
(v) maintain engineering works or equipment in a state in which it can perform its required function.

*"**Outcome**" at the professional level,* means a statement of the performance that a person must demonstrate in order to be judged competent.

"***Over-determined problem***" means a problem whose requirements are defined in excessive detail, making the required solution impossible to attain in all of its aspects.

"***Practice area***" means a generally recognised or distinctive area of knowledge and expertise developed by an engineering practitioner by virtue of the path of education, training and experience followed.

*"**Range statement**"* means the required extent of or limitations on expected performance stated in terms of situations and circumstances in which outcomes are to be demonstrated.

Revision History

Version	Date	Status/Authorised by	Nature of Revision
Rev 1.0:		Approved by Council	
Rev 1.1 Draft A	26 Nov 2010	JIC Working Document	Fine tuning definition of level of problem solving, reformatting, assessment criteria moved to R-04-P
Rev1.1 Draft B	15 Feb 2011	Submitted to Council for Approval	Editorial and formatting
Rev 1.1	17 March 2011	Approved by Council	Minor editorial changes
Rev 1.2	11 Jan 2012	Approved by Council	Preamble added, minor changes
Rev 1.3	2 Aug 2012	JIC proposal to Council	Split Range statements for outcomes 4 and 5 and enhance latter
Rev 1.3	24 Nov 2012	Approved by Council	

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Competency Standard for Registration as a Professional Engineering Technologist			
Status: Approved by Council			
Document : R-02-PT	**Rev-1.2**	**11 January 2012**	

1. Purpose

1.1 This Standard defines the competence required for registration as a Professional Engineering Technologist. Definitions of terms having particular meaning within this standard are given in the text and in Appendix A.

2. Demonstration of Competence

2.1 Competence must be demonstrated within *broadly-defined engineering activities,* defined below, by integrated performance of the outcomes defined in section 3 at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Guidelines.

2.1.1 **Level Descriptor:** *Broadly-defined Engineering Activities (BDEA):* are characterized by several or all of:

(a) *Scope* of practice area is linked to technologies used and changes by adoption of new technology into current practice;

(b) Practice area is located within a wider, complex *context*, requires teamwork, has interfaces to other parties and disciplines;

(c) Involve the use a variety *resources* (including people, money, equipment, materials, technologies);

(d) Require resolution of occasional problems arising from *interactions* between wide-ranging or conflicting technical, engineering or other issues;

(e) Are *constrained* by available technology, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;

(f) Have *significant risks* and *consequences* in practice area and in related areas.

2.1.2 *Activities* include but are not limited to: design; planning; investigation and problem resolution; improvement of materials, components, systems or processes; implementation, manufacture or construction; engineering operations; maintenance; project management; research, development and commercialisation

3. Group A Outcomes: Engineering Problem Solving

3.1 **Outcome 1:-** Define, investigate and analyse *broadly-defined engineering problems.*

3.1.1 **Level Descriptor:** *Broadly-defined engineering problems* have the following characteristics:

(a) require coherent and detailed engineering knowledge underpinning the applicable technology area;

and one or more of:

(b) are ill-posed, or under or overspecified, requiring identification and interpretation into the technology area;

(c) encompass systems within complex engineering systems;

(d) belong to families of problems which are solved in well-accepted but innovative ways;

and one or more of:

(e) can be solved by structured analysis techniques;

(f) may be partially outside standards and codes (must provide justification to operate outside);

(g) require information from practice area and sources interfacing with practice area that is complex or incomplete;

(h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties;

and one or both of:

(i) requires judgement in decision making in practice area, considering interfaces to other areas;

(j) have significant consequences which are important in practice area, but may extend more widely.

3.1.2 **Range Statement:** The problem may be a design requirement, an applied research and development requirement or a problematic situation in an existing component, system or process. The problem is one amenable to solution by technologies known to the applicant. This outcome is concerned with the understanding of a problem: Outcome 2 is concerned with the solution.

3.2 **Outcome 2:-** Design or develop solutions to *broadly-defined engineering problems*.

3.2.1 **Range Statement:** Solutions are those enabled by the technologies in the applicant's practice area.

3.3 **Outcome 3:-** Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices.

3.3.1 **Range Statement:** Applicable knowledge includes:

(a) Technological knowledge that is well-established and applicable to the practice area irrespective of location, supplemented by locally relevant knowledge, for example, established properties of local materials. Emerging technologies are adopted from formulations of others.

(b) A working knowledge of interacting disciplines (engineering and other) to underpin teamwork

(c) Jurisdictional knowledge includes legal and regulatory requirements as well as locally relevant codes of practice, as required for practice area: law of

contract, contract administration, health and safety, environmental, intellectual property, quality management, risk management maintenance management, regulation, project management or construction management

4. Group B Outcomes: Managing Engineering Activities

4.1 **Outcome 4:-** Manage part or all of one or more *broadly-defined engineering activities*.

4.2 **Outcome 5:-** Communicate clearly with others in the course of his or her engineering activities

4.2.1 **Range Statement:** Management and Communication involves:

(a) Planning of *broadly-defined engineering* activities;
(b) Organising *broadly-defined engineering* activities;
(c) Leading *broadly-defined engineering* activities; and
(d) Controlling the activities.

Communication relates to technical aspects and wider impacts of professional work. Audience includes peers, other disciplines, client and stakeholders audiences. Appropriate modes of communication must be selected. The Engineering Technologist is expected to perform the communication functions reliably and repeatably.

5. Group C Outcomes: Impacts of Engineering Activity

5.1 **Outcome 6:-** Recognise and address the reasonably foreseeable social, cultural and environmental effects of *broadly-defined* engineering activities.

5.2 **Outcome 7:-** Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her *broadly-defined* engineering activities.

5.2.1 **Range Statement:** Impacts and Regulatory requirements include:

(a) Requirements include both explicitly regulated factors and those that arise in the course of particular work;
(b) Impacts considered extend over the lifecycle of the project and include the consequences of the technologies applied;
(c) Effects to be considered include direct and indirect, immediate and long-term related to technology used;
(d) Safe and sustainable materials, components and systems;
(e) Regulatory requirements are explicit for the context an general;
(f) Apply defined, widely accepted risk management strategies;
(g) Persons whose health and safety are to be protected are both inside and outside the workplace.

6. Group D Outcomes: Exercise judgement, take responsibility and act ethically

6.1 **Outcome 8:-** Conduct engineering activities ethically.

6.1.1 **Range Statement:** Ethical behaviour is at least that defined by the Code of Conduct.

6.2 **Outcome 9:-**Exercise sound judgement in the course of *broadly-defined engineering activities.*

6.2.1 **Range Statement:** Judgement is expected both within the application of the applicant's technologies, in their wider impacts and when dealing with interfaces to other disciplines and technologies. *Judgement* in decision making involves:
(a) taking several risk factors into account; **or**
(b) significant consequences in a technology application and related contexts; **or**
(c) ranges of interested and affected parties with varying needs.

6.3 **Outcome 10:-** Be responsible for making decisions on part or all of *broadly-defined* engineering activities.

6.3.1 **Range Statement:** The applicant is expected to demonstrate adequately discharging responsibility for significant parts of one or more *broadly-defined engineering activity.*

7. Group E Outcome: Continuing Professional Development

7.1 **Outcome 11:-** Undertake professional development activities sufficient to maintain and extend his or her competence.

7.1.1 **Range Statement:** Professional development involves:
(a) Taking ownership of own professional development;
(b) Planning own professional development strategy;
(c) Selecting appropriate professional development activities; and
(d) Recording professional development strategy and activities;
while displaying independent learning ability;

Appendix A: Definitions

"***Engineering science***" means a body of knowledge, based on the natural sciences and using a mathematical formulation where necessary, that extends knowledge and develops models and methods to support its application, solve problems and provide the knowledge base for engineering specializations.

"***Engineering problem***" means a problematic situation that is amenable to analysis and solution using engineering sciences and methods.

"***Ill-posed problem***" means a problem whose requirements are not fully-defined or may be defined erroneously by the requesting party;

"Integrated performance" means that an overall satisfactory outcome of an activity requires several outcomes to be satisfactorily attained, for example a design will require analysis, synthesis, analysis of impacts, checking of regulatory conformance and judgement in decisions.

"Level descriptor" means a measure of performance demands at which outcomes must be demonstrated.

"***Management of engineering works or activities***" means the co-ordinated activities required to:

(i) direct and control everything that is constructed or results from construction or manufacturing operations;
(ii) operate engineering works safely and in the manner intended;
(iii) return engineering works, plant and equipment to an acceptable condition by the renewal, replacement or mending of worn, damaged or decayed parts;
(iii) procurement within engineering works or operations
(iv) direct and control engineering processes, systems, commissioning, operation and decommissioning of equipment;
(v) maintain engineering works or equipment in a state in which it can perform its required function.

"Outcome" *at the professional level,* means a statement of the performance that a person must demonstrate in order to be judged competent.

"***Over-determined problem***" means a problem whose requirements are defined in excessive detail, making the required solution impossible to attain in all of its aspects.

"***Practice area***" means a generally recognised or distinctive area of knowledge and expertise developed by an engineering practitioner by virtue of the path of education, training and experience followed.

"Range statement" means the required extent of or limitations on expected performance stated in terms of situations and circumstances in which outcomes are to be demonstrated.

Revision History

Version	Date	Status/Authorised by	Nature of Revision
Rev 1:	2006	Approved by Council	
Rev 1.1 Draft A	25 Nov 2010	JIC Working Document	Level Descriptors revised Assessment Criteria removed into R-04-P
Rev1.1 Draft B	15 Feb 2011	Submitted to Council for Approval	Editorial and formatting
Rev 1.1	17 March 2011	Approved by Council	Minor editorial changes
Rev 1.2	11 Jan 2012	Approved by Council	Wording added to section 2.1.3

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Competency Standard for Registration as a Professional Engineering Technician			
Status: Approved by Council			
Document : R-02-PN	**Rev-1.2**	**11 January 2012**	

1. Purpose

1.1 This Standard defines the competence required for registration as a Professional Engineering Technician. Definitions of terms having particular meaning within this standard are given in the text and in Appendix A.

2. Demonstration of Competence

2.1 Competence must be demonstrated within *well-defined engineering activities,* defined below, by integrated performance of the outcomes defined in section 3 at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Guidelines.

2.1.1 **Level Descriptor:** *Well-defined Engineering Activities (WDEA)*: are characterized by several or all of:

(a) *Scope* of practice area is defined by techniques applied; change by adopting new techniques into current practice;

(b) Practice area is located within a wider, complex *context*, with well defined working relationships with other parties and disciplines;

(c) Work involves familiar, defined range of *resources* (including people, money, equipment, materials, technologies);

(d) Require resolution of *interactions* manifested between specific technical factors with limited impact on wider issues;

(e) Are c*onstrained* by operational context, defined workpackage, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;

(f) Have *risks* and *consequences* that are locally important but are not generally far reaching;

2.1.2 *Activities* include but are not limited to: design; planning; investigation and problem resolution; improvement of materials, components, systems or processes; implementation, manufacture or construction; engineering operations; maintenance; project management; research, development and commercialisation

3. Group A Outcomes: Engineering Problem Solving

3.1 **Outcome 1:-** Define, investigate and analyse *well-defined engineering problems.*

3.1.1 **Level Descriptor:** ***Well-defined engineering problems*** have the following characteristics:

(a) can be solved mainly by practical engineering knowledge, underpinned by related theory;

and one or both of:

(b) are largely defined but may require clarification;

(c) are discrete, focussed tasks within engineering systems;

(d) are routine, frequently encountered, may be unfamiliar but in familiar context;

and one or more of:

(e) can be solved in standardized or prescribed ways;

(f) are encompassed by standards, codes and documented procedures (requires authorization to work outside limits);

(g) information is concrete and largely complete, but requires checking and possible supplementation;

(h) involve several issues but with few of these imposing conflicting constraints and a limited range of interested and affected parties;

and one or both of:

(i) requires practical judgement in practice area in evaluating solutions, considering interfaces to other roleplayers;

(j) have consequences which are locally important but not far reaching (wider impacts are dealt with by others).

3.1.2 **Range Statement:** The problem may be part of a larger engineering activity or may stand-alone. The design problem is amenable to solution by established techniques practiced regularly by the candidate. This outcome is concerned with the understanding of a problem: Outcome 2 is concerned with the solution.

3.2 **Outcome 2:-** Design or develop solutions to *well-defined engineering problems*.

3.2.1 **Range Statement:** The solution is amenable to established methods, techniques or procedures within the applicant's practice area.

3.3 **Outcome 3:-** Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices.

3.3.1 **Range Statement:** Applicable knowledge includes:

(a) Technical knowledge is that applicable to the practice area irrespective of location, supplemented by locally relevant knowledge, for example established properties of local materials.

(b) A working knowledge of immediately interacting disciplines. Codified knowledge in related areas: financial, statutory, safety management.

(c) Jurisdictional knowledge includes legal and regulatory requirements as well as prescribed codes of practice.

4. Group B Outcomes: Managing Engineering Activities

4.1 **Outcome 4:-** Manage part or all of one or more *well-defined* engineering activities.

4.2 **Outcome 5:-** Communicate clearly with others in the course of his or her engineering activities

4.2.1 **Range Statement:** Management and Communication involves:

(a) Planning of *well-defined engineering* activities;
(b) Organising *well-defined engineering* activities;
(c) Leading *well-defined engineering* activities; and
(d) Controlling the activities.

Communication relates to technical/project progress information, verbal and written instructions to staff. Formats for documents are defined. The Engineering Technician is expected to perform the communication functions reliably and repeatably.

5. Group C Outcomes: Impacts of Engineering Activity

5.1 **Outcome 6:-** Recognise the reasonably foreseeable social, cultural and environmental effects of *well-defined* engineering activities.

5.2 **Outcome 7:-** Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her *well-defined* engineering activities.

5.2.1 **Range Statement:** Impacts and Regulatory requirements include:

(a) Impacts to be considered are generally those identified within the established methods, techniques or procedures used in the practice area;
(b) Regulatory requirements are prescribed;
(c) Apply prescribed risk management strategies;
(d) Effects to be considered and methods used are defined;
(e) Prescribed safe and sustainable materials, components and systems;
(f) Persons whose health and safety are to be protected are both inside and outside the workplace.

6. Group D Outcomes: Exercise judgement, take responsibility and act ethically

6.1 **Outcome 8:-** Conduct engineering activities ethically.

6.1.1 **Range Statement:** Ethical behaviour is at least that defined by the Code of Conduct.

6.2 **Outcome 9:-**Exercise sound judgement in the course of *welly-defined* engineering activities.

6.2.1 **Range Statement:** Judgement is expected both within the application of the applicant's methods, techniques and procedures and in assessing their immediate impacts. *Judgement* in decision making involves:

(a) taking limited risk factors into account some of which may be ill-defined; *or*
(b) consequences are in immediate work contexts; *or*
(c) identified set of interested and affected parties with defined needs to be taken into account

6.3 **Outcome 10:-** Be responsible for making decisions on part or all of *well-defined* engineering activities.

6.3.1 **Range Statement:** The applicant is expected to discharge responsibility for significant parts of a one or more *well-defined engineering activity*.

7. Group E Outcome: Continuing Professional Development

7.1 **Outcome 11:-**Undertake professional development activities sufficient to maintain and extend his or her competence.

7.1.1 **Range Statement:** Professional development involves:
(a) Taking ownership of own professional development;
(b) Planning own professional development strategy;
(c) Selecting appropriate professional development activities; and
(d) Recording professional development strategy and activities;
while displaying independent learning ability;

Appendix A: Definitions

"***Engineering science***" means a body of knowledge, based on the natural sciences and using a mathematical formulation where necessary, that extends knowledge and develops models and methods to support its application, solve problems and provide the knowledge base for engineering specializations.

"***Engineering problem***" means a problematic situation that is amenable to analysis and solution using engineering sciences and methods.

"***Ill-posed problem***" means a problem whose requirements are not fully-defined or may be defined erroneously by the requesting party;

"Integrated performance" means that an overall satisfactory outcome of an activity requires several outcomes to be satisfactorily attained, for example a design will require analysis, synthesis, analysis of impacts, checking of regulatory conformance and judgement in decisions.

"Level descriptor" means a measure of performance demands at which outcomes must be demonstrated.

"***Management of engineering works or activities***" means the co-ordinated activities required to:
(i) direct and control everything that is constructed or results from construction or manufacturing operations;
(ii) operate engineering works safely and in the manner intended;
(iii) return engineering works, plant and equipment to an acceptable condition by the renewal, replacement or mending of worn, damaged or decayed parts;
(iii) procurement within engineering works or operations

(iv) direct and control engineering processes, systems, commissioning, operation and decommissioning of equipment;
(v) maintain engineering works or equipment in a state in which it can perform its required function.

"Outcome" *at the professional level,* means a statement of the performance that a person must demonstrate in order to be judged competent.

"Over-determined problem" means a problem whose requirements are defined in excessive detail, making the required solution impossible to attain in all of its aspects.

"Practice area" means a generally recognised or distinctive area of knowledge and expertise developed by an engineering practitioner by virtue of the path of education, training and experience followed.

"Range statement" means the required extent of or limitations on expected performance stated in terms of situations and circumstances in which outcomes are to be demonstrated.

Revision History

Version	Date	Status/Authorised by	Nature of Revision
Rev 1.0	2006	Approved by Council	
Rev 1.1 Draft A	25 Nov 2010	JIC Working Document	Level Descriptors revised Assessment Criteria removed into R-04-P
Rev1.1 Draft B	15 Feb 2011	Submitted to Council for Approval	Editorial and formatting
Rev 1.1	17 March 2011	Approved by Council	Minor editorial changes
Rev 1.2	11 Jan 2012	Approved by Council	Wording added to section 2.1.3

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Processing of Applications for Registration as Candidate Engineer and Professional Engineer			
Status: For approval of amendments by Council			
Document: R-03-PE	**Rev-1.2**	**11 October 2012**	

Background: ECSA Registration System Documents

The documents that define the Engineering Council of South Africa (ECSA) system for registration in professional categories are shown in Figure 1 which also locates the current document.

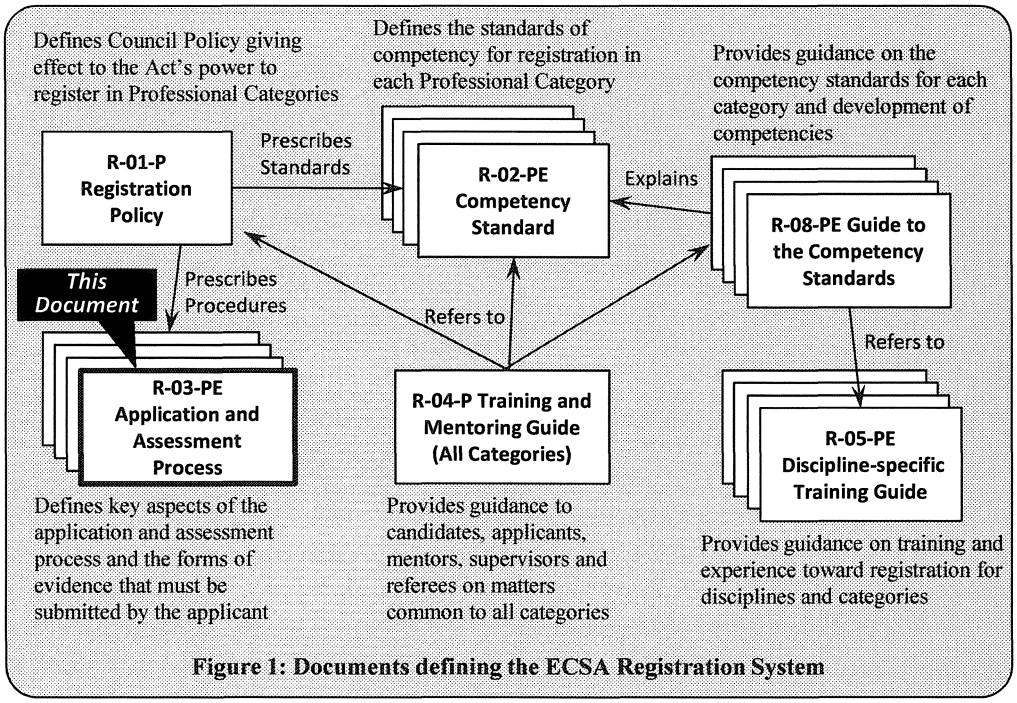

Figure 1: Documents defining the ECSA Registration System

1. Purpose of this Document

This document defines the processes used by ECSA to receive, process and make decisions on applications for registration as a Candidate Engineer and as a Professional Engineer.

These processes are carried out under the authority of the Engineering Profession Act (Act No. 46 of 2000) and registration policies defined in document R-01-P. This document supports the management of the registration process and assessment of applicants against the competency standard R-02-PE. Section 3 provides a high-level definition of the registration process resulting from the implementation of the policy defined in document R-01-P.

2. Changes introduced in this document

ECSA Registration Policy, Competency Standards and Education Evaluation policy approved in November 2010 and March 2011 and the processes defined in this document bring about a number of changes to the registration system, greater clarity as well as improvements to the application and assessment process. The main changes are summarized in Table 1. In summary:

1. It is not the intention to change the standard required for registration, but to better define it in terms of the outcomes produced and the required level rather than specifying that the training must be such as to develop competence. See Appendix A for a comparison between the specification of document R2/1A, supplemented by the Discipline-specific Guide (DSG) and the Competency Standard R-02-PE.
2. The forms of evidence of competence have been made uniform across the disciplines and provide evidence against all the outcomes. See Appendix B for the role of each form of evidence in relation to individual outcomes.
3. The assessment process is uniform across the disciplines.

3. Process Outline

The processes defined below are designed to handle the various cases that arise on the route to registration taking into account that applicants for professional registration do not necessarily register in a candidate category and that the educational requirement may be satisfied by several mechanisms, including educational evaluation.

The registration process is divided into two main sections:

- A secure system for applying on-line, entering the necessary data and uploading documents as required; and
- The core assessment process encompassing the Experience Appraisal, Professional Review, Committee Decision and Administrative finalization.

3.1 Common User Identification and Login

Figure 1 shows the essentials of the application system. A new user must supply basic details before being given a User ID and a password. Basic details are: First Name(s), Surname, Date of Birth, Title, South African ID number (or Passport number and Nationality if not in possession of an SA ID), e-mail Address, Mobile Phone Number. The person must also indicate whether he or she was previously or is currently registered or has previously applied, supplying the Registration/Application Number (if known).

After determining that the person is not already in possession of a User ID, the system will issue the user with a unique User ID and sets up a password. Existing users may login at anytime. The user will be presented with a menu which will ultimately contain all the services available. For applicants for Candidate and Professional Engineer four options are relevant:

- Apply for registration as a Candidate Engineer
- Apply for registration as a Professional Engineer
- Apply for Educational Evaluation
- Continue with my application

Table 1: Changes introduced by 2011 policy, standards and procedures

Aspect	Prior to this policy	Under this policy
Registration Policy	Embedded in Policy R2/1A: Acceptable Work for Candidate Engineers; does not consider other classes of applicants explicitly.	• Single, integrated policy R-01-P, defining registration and education policy, linking with standards (R-02-PE) and processes (this document), applies to all applicants.
Educational Requirements Policy	Accredited or recognized qualification or prior evaluation of qualification(s) as meeting educational requirements.	• No change to accredited or recognized qualifications. • Accelerated evaluation of listed qualifications. • Evaluation criteria defined in document E-17-P for qualifications and assessed learning.
Standard of Competency for Registration	Training requirements for Candidate Engineers, in R2/1A section 5 with further requirements in the Discipline Specific Guidelines Professional Attributes in section 5) for seven disciplines	• Competency Standard for registration as a Professional Engineer in document R-02-PE. • Eleven outcomes, with definitions for the level of problem solving and engineering activities. • Professional Attributes included in standard. • Level descriptors differentiate categories
Seeking registration without normal qualification	Only the Engineer "alternate route" available (ND or equivalent plus 10 years working at level of PrEng, Experience Appraisal, then write final year exams).	• Criterion-based method of meeting education requirements by evaluation and assessment defined in E-17-P. When educational requirements are complete, apply for registration in normal way. No additional time limits. • Identified methods of further learning and assessment.
Evidence of Training/ Competency	For all disciplines: • Training and Experience Summary • Training and Experience Reports Varying requirements across disciplines: • Project Report[a] • Essay Test[b] • Claim to Competency[c] • Presentation[d]	Uniform requirements across disciplines: • Training and Experience Summary (TES) • Training and Experience Reports (TER) • Training and Experience Outlines (TEO)[e] • Engineering Report[f] • Presentation • Pre-registration CPD-type activity
Assessment of Competency	Two different assessment instruments used in professional reviews a) Civil (including essay) and Electrical b) Other disciplines	• Policy (R-01-P) defines main stages and permitted decisions in the assessment process. • Common assessment instruments addressing the outcomes and an integrative judgement, providing consistent trails through all stages.
Decision Making	Delegation of decision to register or defer to the PAC, reserve refusal to Central Registration Committee	• No change to delegation. • Two deferments permitted. • Credit given for outcomes fulfilled.
Application	Manual (paper-based)	Online
Process Definition	Embedded in part in other documents	• High level process definition (in this document). • Detailed IT system specification.
Training and Mentoring Guidelines	Discipline Specific guidelines having force of standards/policy. Three variants: a) Chemical b) Civil c) Remaining seven disciplines	Layered set of guidelines: • Training and mentoring (all categories) (R-04-P) with defined responsibility levels. • Guide to competency standards for Professional Engineers (R-08-PE). • Discipline-specific Training Guide (R-05-PE).
Notes	a. Different formats across the disciplines b. Civil Engineering only c. Electrical Only d. Civil Engineering only	e. Defined short form of TER, with clear rules when a TEO may be substituted by experienced applicant f. Replaces Project report, emphasis on demonstrating the applicant's engineering ability

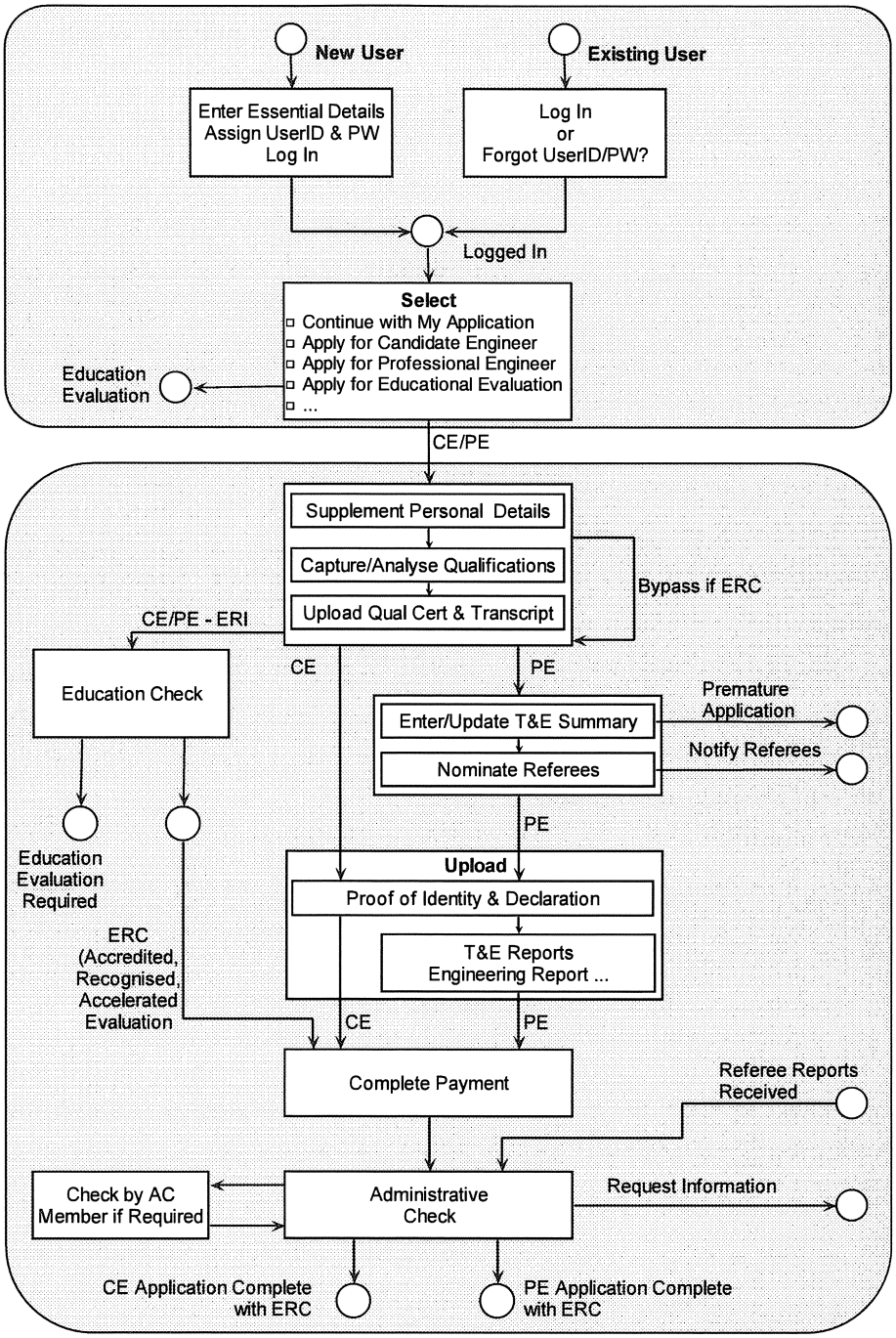

Figure 2: Common front-end and data entry for applications for Candidate Engineer and Professional Engineer

3.2. Data Entry System: Candidate and Professional Engineer

Applications for registration require pre-conditions to be fulfilled including payment of the prescribed fee, submission of the personal information, qualification, and supporting documents, which may include documents prepared by third parties, for example referee reports which are completed on-line

or uploaded directly by the referees. The process described in Figure 1 ensures that the preconditions are fulfilled before the start of evaluation of the applicant's competence[1].

Applicants for Candidate Engineer (CE) and Professional Engineer (PE) are taken via the menu to the second part of Figure 2 where the following sub-processes occur:

- Provide the rest of their required information: addresses, employment, phone numbers, demographic information, and voluntary association membership.
- Enter Qualifications with separate steps for:
  1. Accredited qualifications
  2. Washington Accord qualifications
  3. Other qualifications

In case 1, the qualification is selected from ECSA's database. In case 2 details are captured and confidence checks are performed (Country is a signatory, is qualification listed by signatory, completion year in range of validity,..etc.). A status Provisional Education requirements Complete (ERC) is issued, with a disclaimer that the qualifications will be checked at a later stage.

In all cases, the applicant now uploads certified copies of degree certificate(s) and transcript(s). In cases 1 and 2, the parallel education check process is launched for peer verification of the qualifications. In case 3, the details of qualifications are captured and the applicant is referred to the educational evaluation process.

An applicant for Professional Engineer then enters the Training and Experience Summary (TES) information online. A simple check on the number of weeks at different levels is used to detect premature applicants. An applicant who is warned of the premature nature of application may re-enter when further information on further experience is available.

The PE applicant then nominates Referees who are notified directly by the system. The Applicant must provide full details of Referees who are not registered with ECSA.

In the next phase required documents are uploaded: Proof of Identity, Declaration, Training and Experience Reports and Engineering Report.

Payment is completed online.

The referees complete their reports and upload the reports using their logins,

The application, including the referee reports, is checked by a registration officer. Incomplete information must be supplied by the applicant via the Continue My Application option. When the application is judged complete and the Education Check has returned an ERC and the referee reports have been completed, the application is marked as complete. The application is progressed to the next stage.

Note: Figures 2 and 3 do not show the mechanisms for detecting when the completion of a step is incomplete or overdue and the notifications that are sent.

[1] Note: An applicant re-entering the system and choosing "Continue with my application" will be taken to the next piece of missing information.

3.3 Core Process for Candidate and Professional Engineer

The process in figure 3 gives effect to section 6 of the registration policy R-01-P in the case of Candidate and Professional Engineers. The Evaluators for the experience appraisal are selected and the appraisal starts. A provisional selection of reviewers and date for the Professional Review are established (to be confirmed or cancelled later). This takes into account the period required to complete the Experience Appraisal.

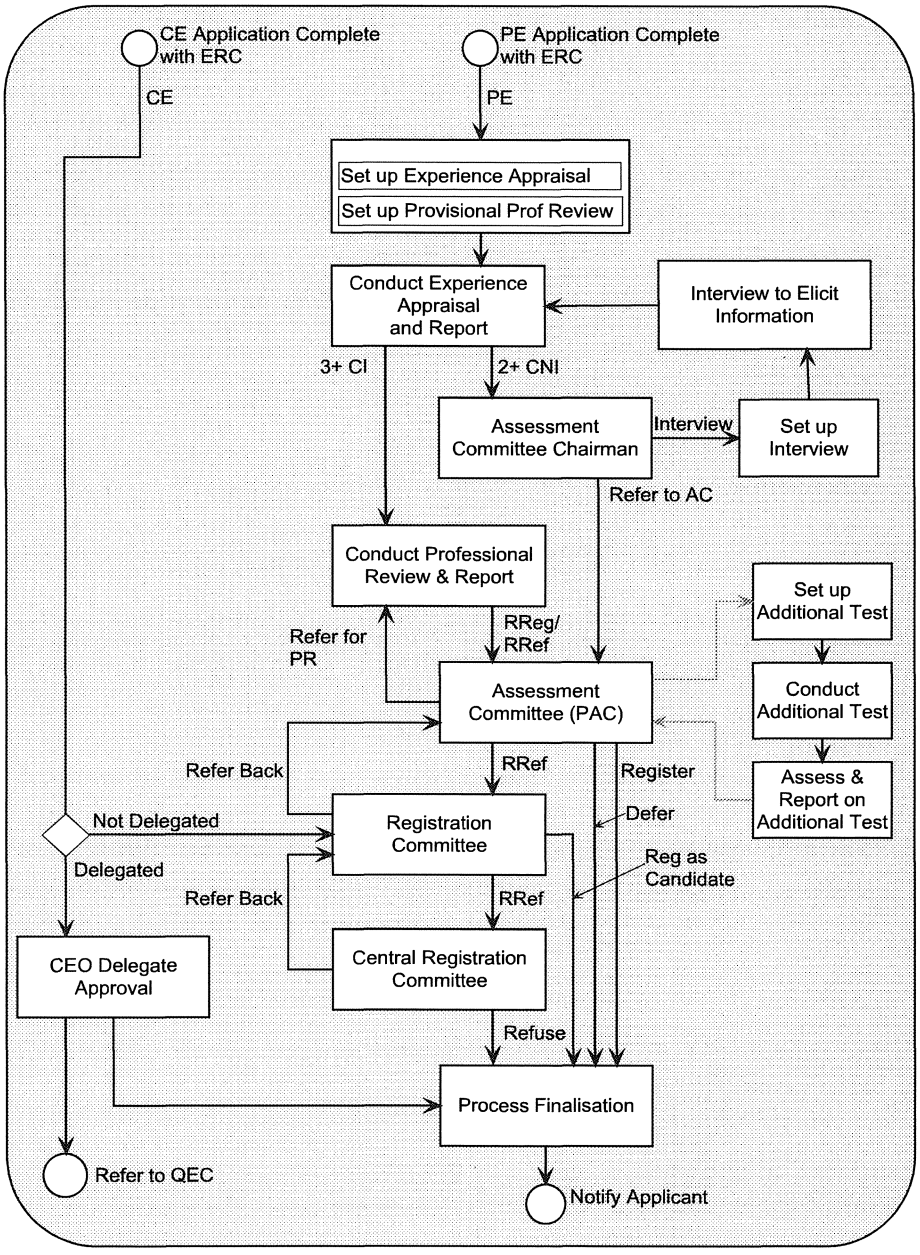

Figure 3: Assessment process for applications for Candidate and Professional Engineer

The process flow is in accordance with the policy of R-01-P section 6 and contains the following main elements.

1. Experience Appraisal: an assessment of the applicant's competence using the submitted documentation
   - If competence is indicated, proceed to professional review
   - If competence is not indicated, refer to the Professional Advisory Committee (PAC)
2. If the experience appraisal is not indicative of competency, the PAC Chairman reviews the appraisals and must adopt one of the following measures:
   - If further information is required, determine that the applicant be interviewed by the selected appraiser(s) to elicit further information. Further documents may be uploaded.
   - Refer the application to the PAC. In this case, the PAC may determine that the Professional Review should take place.
3. Professional Review
   - If competence is confirmed, recommend registration to PAC
   - If competence is not confirmed, recommend refusal registration to PAC
4. Consideration of reports by the Professional Advisory Committee with following possible outcomes:
   - Register applicant
   - Recommend refusal of applicant to the Engineers Registration Committee
   - Defer the application for up to 12 months to give the applicant the opportunity to gain experience to fulfill outstanding competency requirements subject to a maximum of two deferments.
6. If a refusal is recommended, the recommendations are considered by both the Engineers Registration Committee and the Central Registration Committee.

4. Evidence and Assessment for Registration as a Candidate Engineer or Professional Engineer

Table 2: Forms and Documents

Ref	Components of Application	For Registration As	
		Candidate Engineer	Professional Engineer
	Online application form	X	X
	Declaration signed by applicant and Commissioner of Oaths	X	X
	Proof of Identity (SA ID book or Foreign Passport)	X	X*
TES	Summary of Training and Experience Reports		X
TER	Training and Experience Reports (Generally more than one) Individual Reports to be signed by supervisor. Training and Experience Outlines may be used where permitted		X
ER	Engineering Report (incorporating self-assessment).		X
IPD	Record of IPD (Pre registration CPD)(online)		X
	Proof of VA membership (Copy of certificate or letter)	X	X
	Qualification Certificates (if not already submitted)	X	X*
	Academic Record/transcript (List of Subjects and Grades)	X	X*
RR	Referee report, signed by referee (Generally two or more)		X
* If not already provided in a Candidate Engineer application			

4.1. General Requirement

The assessment system for applicants for registration as Professional Engineers must implement the requirement laid down in the competency standard R-02-PE section 2.1:

> *Competence must be demonstrated within complex engineering activities, ... by integrated performance of the outcomes ... at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Guidelines.*

The evidence used to demonstrate competency must therefore address the defined outcomes in the competency standard at the required level.

4.2. Information and Evidence of Competency to be provided

Table 2 lists the information and forms of evidence that the applicant for registration as a Candidate Engineer or Professional Engineer must provide.

4.3. Training and Experience Summary (TES)

The Training and Experience Summary (TES) is a factual record of distinct phases of training and work experience during the applicant's career up to the time of application. TES must identify each phase of training and experience and the level of responsibility. Periods during which the applicant is not engaged in activity that contributes to professional development must also be indicated, together with the reasons for inactivity.

A phase of training and experience corresponds to a period in which particular high level training objectives are to be fulfilled or a major task or project is completed. A phase typically ends when new training objectives are set, the type of work changes, the expected level of achievement changes, employment is terminated or engineering work is interrupted. See Table 3 for a list of events that demarcate a period of training and experience.

The degrees of responsibility defined in document R-04-P, Table 4, are used here (and in the Training and Experience Reports:

A: Being Exposed	B: Assisting	C: Participating	D: Contributing	E: Performing

Degree of responsibility E means performing at the level required for registration. This corresponds to the range statement in outcome 10 in the Competency Standard R-02-PE which requires that the applicant display responsibility "for the outcomes of significant parts of one or more complex engineering activities".

4.4. Training and Experience Reports

The Purpose of the Training and Experience Report (TER) is to provide a factual record of the main periods in the applicant's development from graduation to applying for registration and to identify the periods where the applicant took responsibility at the required level.

Two templates are available for reporting on the applicant's training and experience and their use depends on the length and nature of that training and experience.

1. In general, an applicant must complete and submit a Training and Experience Report (TER) for each phase of training and work experience from the time of meeting the education requirements to application for registration. TER(s) covering at least one year working at the degree of

engineering responsibility E (Performing) must be submitted. Such periods need not include the last period(s) in the applicant's TES if the degree of responsibility is not E.

2. The requirement in 1 may be relaxed in the case of an applicant who has at least ten years training and experience after completing the educational requirement and reports at least three years at degree of engineering responsibility E (Performing) in detail in the TER format that are signed by the supervisor. Such periods need not include the last period(s) in the applicant's TES if the degree of responsibility is not E. Such an applicant may submit Training and Experience Outlines (TEO) for the remaining periods or groups of related periods.

Table 3: Information to be provided in Training and Experience Reports and Outlines

Aspect	Training and Experience Report (TER)	Training and Experience Outline (TEO)
Supervisor's signature	Required (indicates agreement with level of responsibility A-E inserted in header)	Not required – covered by general declaration by applicant
A period ends when:	• The work environment has changed, e.g. when a major training phase, task or ends; • The type of work has changed; • The responsibilities or level of function have changed (for instance, as in a promotion); • Change of employer; • Training or employment is interrupted (for instance by study, unemployment or prolonged illness).	• The level of responsibility changes from level B to C • The level of responsibility changes from level D to E • A promotion takes place • Change of employment • Training or employment is interrupted • The nature of work changes significantly
Position in Organisation	• Supply an organogram, showing the names, position and registration (if any) of supervisor(s), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Always show the supervisor.	• Simplified organogram: Identify yourself, your supervisor and state the number and level of persons supervised
Reporting Format	• Write in the first person. Construct proper paragraphs dealing with key aspects from the list below	• Use bulleted format covering the items below
Topics to be covered: elements marked * are mandatory, others as applicable	• Nature of training or experience*	• Nature of the training or work phase or related phases
	• Nature of problem(s) addressed, method of analysis, solution development and evaluation.*	• Typical problems addressed*
	• Documentation, reports, presentations prepared	• Responsibilities for communication and documentation • Management responsibilities
	• Management of materials, machines, manpower, methods or money, contracts	
	• Interaction with clients, stakeholders and other disciplines	
	• Health and safety considerations, hazards and environmental considerations, Other legislation	• Legal and impact analysis
	• Indication of applicant's responsibility* (Level A-E)*	• Applicant's role and responsibility (Level A-E)*
Length limit	2000 words total for all TERs	12 bullet points per TEO

3. An applicant who completes the education requirement by assessment under section 3.4(iv) of document R-01-P must submit TERs for at least three years, including one year at responsibility level E. Periods of experience may predate completing the education requirement. TEOs may be submitted for other periods.

Any applicant whose training and experience history is shorter than three years, and has less than one year working at degree of responsibility E (Performing) will be notified that the application is premature and invited to submit further TES as they become available.

Note: Where the person is registered as a candidate with ECSA, the TES can and should be updated online and the corresponding TER uploaded by the candidate as each the phase of training or work experience is completed. This may be done without initiating an application.

The information to be provided in the TER and TEO format is defined in Table 3.

4.5 Engineering Report

Each applicant must submit an Engineering Report covering aspects of work at the Perform level that demonstrates that the applicant has fulfilled the required outcomes. The report has the following characteristics.

Purpose: The Engineering Report submitted by applicants for registration as a Professional Engineer enables the applicant to synthesise and present evidence structured in a chosen form of his or her competence by describing the work he or she performed at a responsible level.

Type of Report: Consistent with its purpose, this report must be written specifically for the application for registration. It is not a conventional project report, for example of the type that would be submitted to an employer or client in the course of a project. The work described may be drawn from a major project or a series of projects. In the report, the applicant must reflect on his or her engineering activity in a way that that demonstrates the required level of competence.

Format of Report: While the report is in a free form it must be included in the template provided. The template prescribes the heading and closure of the report and allows the applicant's self assessment to be inserted in the space provided.

Style of Writing: The report must be written in the first person (except when describing the actions of another person or agency), in a proper structure, style and English language. The report is a test of written communication ability both from a structure, style and language point of view as well as logical development.

Length: The report body, including headings and subheadings, must be in the range 2500 to 3000 words. Diagrams, tables and pictures appropriate to the purpose defined above, not exceeding two A4 pages in total area may be included (in addition to the word count). The total file size is limited to 1 MByte.

How to write the report: The design of the report is left to the candidate. The work drawn on for the report does not have to be project based; in an operational engineering work environment, problem

solving and engineering management may provide evidence of performance against the required outcomes.

Checklist: The report should touch on:

- Theoretical and practical methods used to analyse and solve engineering problems encountered in the work
- The engineering and contextual knowledge and understanding, both from the applicant's education and acquired subsequently, required for effective performance of the work;
- The planning, organising, leading and controlling of human and other resources required to achieve the goals of the engineering work.
- Handling of regulatory considerations, impacts of the work that were not necessarily covered by regulation and ethical issues, recognition of obligations to society, the profession and the environment.
- Risks and uncertainty associated with the work and its product
- The recommendations, judgement calls and decisions that the applicant had to make, where the applicant's leadership skills exercised.
- The nature of the responsibility carried by the author and identification of the persons to whom the author was responsible.

4.7. Referee Report

The purpose of the Referee Report is to draw on first hand observations of the applicant's performance in work conditions to obtain information on the applicant's competency. The referees are asked to identify periods in the applicant's career as itemized in TES where the referee feels able to comment on the attributes of the applicant. In relation to these periods, the referee is asked:

- To rate the applicant's problem analysis and solution synthesis abilities in relation to the desired level (complex engineering problems);
- To rate the applicant's knowledge of engineering principles and of the wider context of the engineering work;
- To comment on the applicant's engineering management ability, that is the ability to ensure the achievement of engineering results through management methods;
- To rate the applicant's communication ability;
- To comment on the applicant's abilities to handle the regulatory, economic, social and environmental issues arising from engineering activity;
- To comment on the applicant's understanding of ethics and ethical behavior in relation to his engineering work;
- To rate the applicant's judgement in decision making and acceptance of responsibility;
- The applicant's willingness and capacity to accept responsibility; and
- To comment on the applicant's commitment and attention to competency and career development.

4.8. IPD Report

The Initial Professional Development (IPD) Report is a factual record that serves as evidence of proficiency development through CPD-type activities of Category 1 and other formal learning activities prior to registration, including in-house training. Reported activities do not require CPD validation. Annexure H specifies the information required on each activity.

5. Process for Educational Evaluation

The blocks Capture and Analyse Qualifications and Education Check in figure 1 are expanded in more detail in figure 4.

The education evaluation process is shown in Figure 5. This is a stand-alone process that may be entered from the menu in Figure 1. It requires documents to be uploaded and the evaluation fee to be paid.

The following documents must be uploaded by the applicant:

1. A curriculum analysis using the worksheet provided. This is an Excel worksheet where the applicant would enter data and upload a PDF version of the file.
2. Syllabi of the subjects studied. This would be scanned copies of relevant pages of the university handbook/rulebook or course descriptions as issued to the student.
3. Project report(s). These would be scanned copies.
4. Declaration and Proof of Identity.

The applicant must upload one set of items 1 to 3 for every qualification completed.

The applicant should be able to add documents relating to completion of learning of lesser extent than a full qualification. This would arise if an applicant completes further learning. This information is of the form:

1. Certification of completion of course/module and result achieved
2. Description of module including hours, breakdown of activity, syllabus, form of assessment

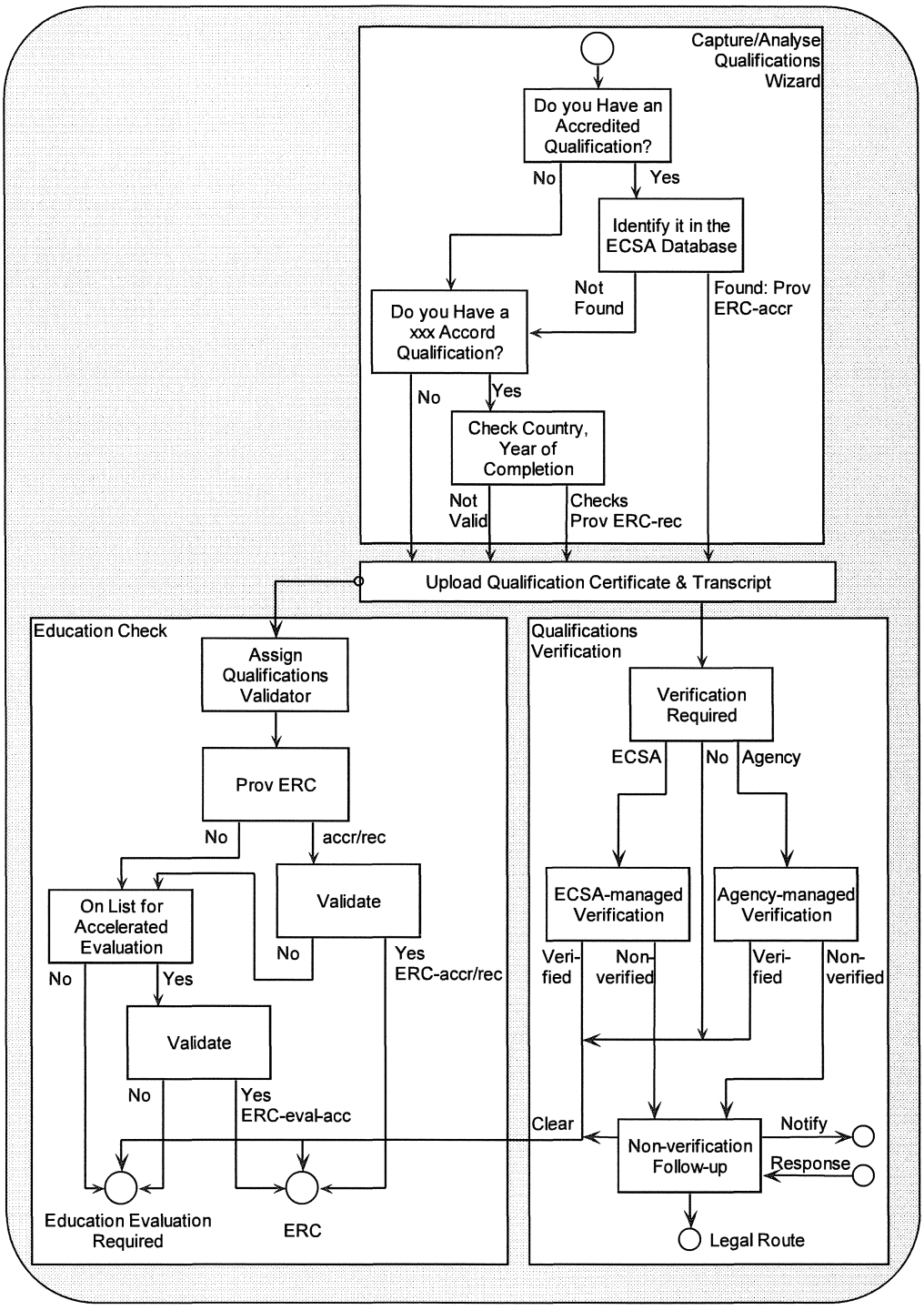

Figure 4: Detail of Capture/Analyse Qualification and Education Check in Figure 1

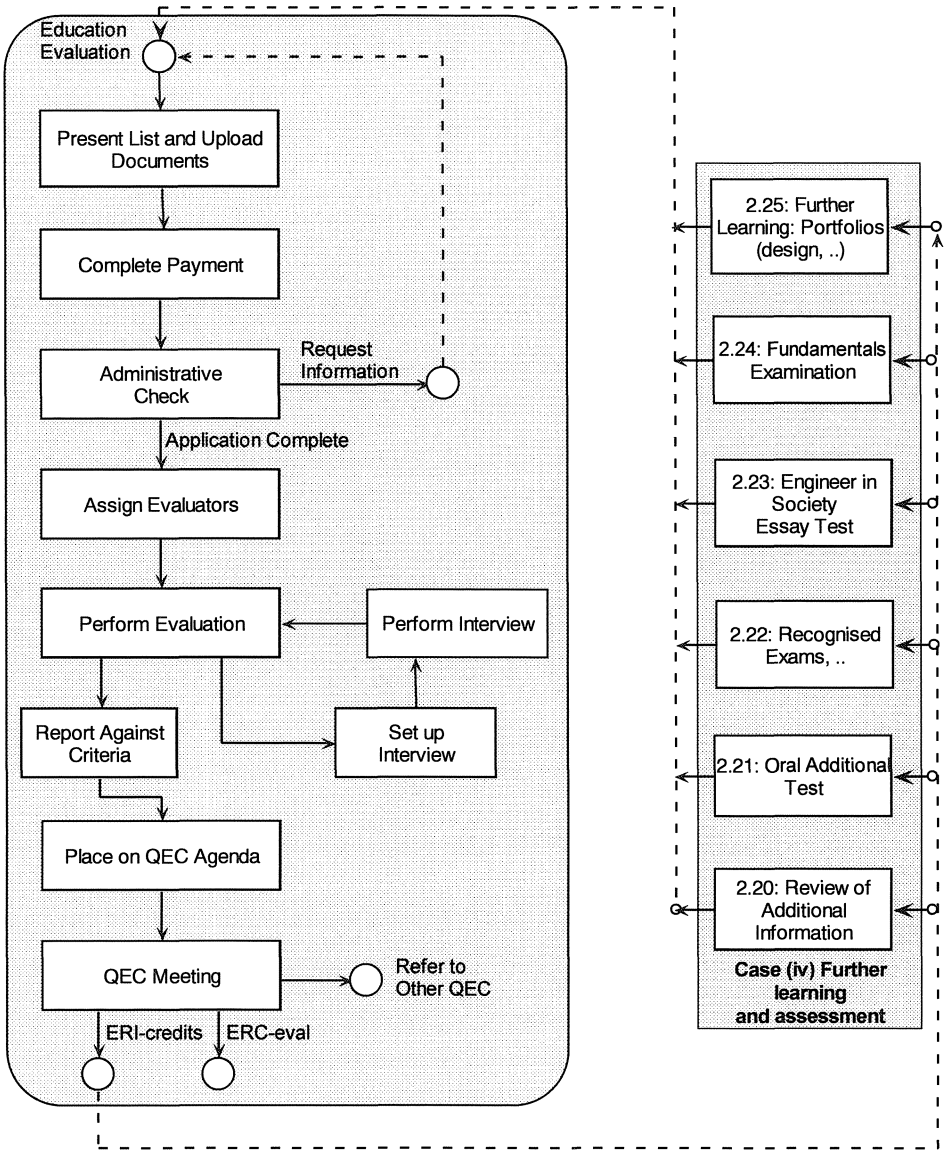

Figure 5: Education Evaluation process. The further learning and assessment elements are shown for completeness: they do not form part of the Educational Evaluation process.

Appendix A: What Changes with the introduction of Competency Standards?

Prior to the introduction of the competency standards, the requirements were expressed in terms of criteria for acceptable training in ECSA's policy document R2/1A. The requirements defined in section 5 of R2/1A are summarized in the first column of the following table. The outcomes embedded in the training requirements are extracted in column 2. The formal outcomes in R-02-PE are stated in column 3 while the level descriptor is in column 4. Table A1 relates to the Group A outcomes while table A2 relates to outcomes in Groups B, C and D.

Table A1: Transition from input-based training specifications to output-based competency specifications in Group A

1: R2/1A Essential Elements of Acceptable Practical Training	2: Outcomes Embedded in Training Elements in Column 1 or in DSG	3: Corresponding Competency Standard Outcome	4: Level descriptors for column 3
Common requirement in section 1.1. of DSGs Persons wishing to become registered as professional engineer must: (ii) demonstrate that they have been trained to an acceptable level of competence in defined elements, for at least 3 years (iii) display attributes of a professional person		**Requirement (R-02-PE Section 2.1.):** Competence must be demonstrated within *complex engineering activities,* defined below, by integrated performance of the outcomes defined below at the level defined for each outcome. **Note:** Attributes of a professional person defined in outcomes	
5.1. Problem Investigation The work must be aimed at investigating engineering problems and for which engineering judgement is required. The following practical engineering functions are contained in such work to a greater or lesser degree: (a) problem identification and formulation; (b) finding and selecting relevant information; (c) evaluating, investigating, testing and research; (d) analysis of all factors that influence the solution like relevant engineering and scientific principles.	The applicant must demonstrate the ability to: Investigate engineering problems, [at a level] that require[s] engineering judgement, performing the functions: : (a) identify and formulate a problem; (b) find and select relevant information; (c) evaluate, investigate, test and research; (d) analyze all factors that influence the solution, including relevant engineering and scientific principles.	**Group A: Engineering Problem Solving** **1:** Define, investigate and analyze *complex engineering problems* Note: Engineering judgment is specified in Group D, outcome 8 ***3:-**Comprehend and apply advanced knowledge: principles, specialist knowledge, jurisdictional and local knowledge	***Complex Engineering Problems*** *have the following characteristics:* (a) require in-depth fundamental and specialized engineering knowledge *and one or more of the following:* (b) are ill-posed, unfamiliar, under- or overspecified, requiring identification and refinement, (c) are high level problems including component parts or sub-problems; (d) involve infrequently encountered issues; *and one or both of the following:* (e) solutions are not obvious, require originality or analysis based on fundamentals; (f) are outside the scope of standards and codes; (g) require information from variety of sources that is complex, abstract or incomplete; (h) involves wide-ranging or conflicting issues: technical, engineering and interested or affected parties;. *and one or both of the following:* (i) require judgement in decision making in uncertain contexts; (j) have significant consequences in a range of contexts
5.2. Problem Solution The work must be aimed at the full development of the suggested solution to the problem through a process of synthesis, with the application of all information acquired during the problem investigation, also using design, development and communication. This includes but is not limited to the drawing up of plans, detailed designs, reports, specifications, adjudication of tenders taking into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.	The applicant must demonstrate the ability to: Develop the suggested solution to the problem through a process of synthesis and design; (a) apply all information acquired during the problem investigation, (b) communicate by but not limited to drawing up of plans, detailed designs, reports, specifications, (c) adjudicate tenders (d) take into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.	**2:-**Design or develop solutions to *complex engineering problems* Note: Communication in outcome 5 Note: Impacts in Outcome 7	

Table A2: Transition ... in Groups B, C and D

5.3. Execution / Implementation The work must be aimed at the execution of engineering tasks or projects (for example construction, manufacturing, transformation, processing, production, commissioning, testing, certification, quality assurance, operation, maintenance and closure) encompassing the efficient utilization of people, materials, machines, equipment, means and funding with due regard for their interaction, to achieve the end result within the set parameters.	The applicant must demonstrate the ability to: a) Execute engineering tasks b) Make efficient use of people, materials, machines, equipment, and funding c) Handle interactions d) Achieve end results within set parameters **DSG 5.2:** demonstrate that their engineering work required them to: ... understand and take into account financial, economic, commercial and statutory considerations **DSG 5.3:** must develop the ability to communicate lucidly, accurately and confidently **DSG 5.4:** must demonstrate [to their mentors] that they: • Understand the engineering procedures of the discipline • Know legislation applicable in engineering and to the discipline • Understand the Code of Conduct • Understand the role and relationships of [professional] organizations in their discipline • Are familiar with the requirements for registration	**Group B: Managing Engineering Activities** **4:-**Manage part or all of one or more ***complex engineering activities*** **5:-**Communicate clearly with others in the course of his or her engineering activities **Group C: Impacts of Engineering Activity** **6:-**Recognise and address the reasonably foreseeable social, cultural and environmental effects of *complex engineering activities* **7:-**Meet all legal and regulatory requirements and protect the health and safety of people in the course of his or her *complex engineering activities.*	***Complex engineering activities*** in which competence is exercised has several of the following characteristics a) *Scope* of activities may encompass entire complex engineering systems or complex subsystems *b)* A *context* that is complex and varying, is multidisciplinary, requires teamwork, and/or unpredictable, may need to be identified c) Requires diverse and significant *resources:* including people, money, equipment, materials, technologies d) Significant *interactions* exist between wide- ranging or conflicting technical, engineering or other issues **e)** Are *constrained* by time, finance, infrastructure, resources, facilities, standards & codes, applicable laws **f)** Have significant *risks* and *consequences* in a range of contexts
5.4 Responsibility The work must be aimed at increasing engineering and managerial responsibility until candidate engineers are clearly able to accept professional responsibility for taking engineering decisions. Part of their responsibility should also be to ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects as well as of the code of professional conduct	The applicant must demonstrate the ability to: a) Accept professional responsibility for taking engineering decisions. b) Ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects. c) Follow the code of professional conduct **DSG 5.1:** must demonstrate ability to work satisfactorily on own and have taken responsibility and ... have achieved a satisfactory outcome. **DSG 5.2:** demonstrate that their engineering work required them to: exercise independent technical judgement and accept responsibility.	**Group D: Exercise judgement, take responsibility and act ethically** **8:-**Conduct engineering activities ethically **9:-**Exercise sound judgement in the course of *complex engineering activities* **10:-**Be responsible for making decisions on part or all of *complex engineering activities* ***Group E: Manage Own Development** **11:-**Undertake professional development activities sufficient to maintain and extend his or her competence *No direct counterpart in R2/1A work requirements	

Appendix B: Sources of evidence against Outcomes

Note: *complex* is the level identifier defined for the Professional Engineer category in document R-02-PE

No	Outcome	Training and Experience Reports	Engineering Report Incl Self-assessment	Referee Reports (2)	CPD Report		Presentation	PR Interview	
A1	Define, investigate and analyze *complex engineering problems*	Factual/ Verified	Reflective/ Not Verified	Evaluative		**Information to the left is considered in the Experience Appraisal**		Evaluative/ Verified	**All information is used by Professional Reviewers when making their recommendation to the Assessing Committee (PAC)**
A2	Design or develop solutions to *complex engineering problems*	Factual/ Verified	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
A3	Comprehend and apply advanced knowledge: principles, specialist, jurisdictional and local	Factual/ Verified	Reflective/ Not Verified	Evaluative	Factual: Knowledge Enhancement			Evaluative/ Verified	
B4	Manage part or all of one or more *complex* engineering activities	Factual/ Verified	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
B5	Communicate clearly with others in the course of his or her engineering activities	Tests Concise Writing.	Tests analytical Writing	Evaluative			Tests synthesis, oral, graphic	Evaluative/ Verified	
C6	Recognize and address the reasonably foreseeable impacts of *complex* engineering activities	May not be covered	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
C7	Meet all legal and regulatory requirements and protect the health and safety of persons in the course of *complex* engineering activities	Factual/ Verified	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
D8	Conduct engineering activities ethically	May not be covered	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
D9	Exercise sound judgement in the course of *complex engineering activities*	May not be covered	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
D10	Be responsible for making decisions on part or all of *complex engineering activities*	Factual/ Verified	Reflective/ Not Verified	Evaluative				Evaluative/ Verified	
E11	Undertake professional development activities sufficient to maintain and extend his or her competence		Reflective/ Not Verified	Evaluative/ Verified (Commitment)	Factual			Evaluative/ Verified (Commitment)	

Appendix C: Training and Experience Summary

This information will be held in an online form containing the elements shown. Links will be provided to Training and Experience Reports.

No*	From	To	Weeks*	Work Details		Respon-sibility A-E	TER
1				Employed by:	Post Held:		LinkTER1
				Type of Work:			
2				Employed by:	Post Held:		LinkTER2
				Type of Work:			
n				Employed by:	Post Held:		LinkTERn
				Type of Work:			

When an applicant is not engaged in training and experience toward registration, the period must be reflected as follows:

x				Employed by: ***Not Active***	Post Held:	-	-
				Type of Work: ***Insert reason here***			

Appendix D: Training and Experience Report Format

The following template defines the elements (but not the exact format) of the Training and Experience Report.

Engineering Council of South Africa

Training and Experience Report

as part of Application for Registration as Professional Engineer

Applicant's Name **Application Number:**				**Applicant's Signature**	**Date**
Period No:	**Start date:**	**End Date**	**No of Weeks:**	**Position held:**	**Degree of responsibility*** [2]
Employer's Name and address[1]:				**Did you train under a Commitment and Undertaking (CU)?**	Yes/ No
				If yes, provide number of CU No:	**No:**
Supervisor's Name and address: **ECSA Registration No:**				**Supervisor's Signature:** **Date:**	
Organogram showing supervisor(s), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions and registration (if any).					
Report: (Write in proper paragraphs in the first person singular)					
Nature of training or experience*					
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation*					
Documentation, reports, presentations prepared					
Management of materials, machines, manpower, methods or money, contracts					
Interaction with clients, stakeholders and other disciplines					
Health and safety considerations; hazards and environmental considerations; other legislation					

1: This is the employer and site at which the work took place, e.g. a site the applicant has been seconded to.

2: Use the scale A-E defined in section 4.3.

* Mandatory

Appendix E: Training and Experience Outline

The following template defines the elements (but not the exact format) of the Training and Experience Outline.

Engineering Council of South Africa

Training and Experience Outline

as part of Application for Registration as Professional Engineer

Applicant's Name **Application Number:**				**Applicant's Signature**	**Date**
Period Numbers:	**Start date:**	**End Date**	**No of Weeks:**	**Position(s) held:**	**Degree of responsibility**
Employer's and Supervisor Name and address:				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** / **No**
				If yes, provide number of CU No:	**No:** _____
Organogram identifying yourself, your supervisor and persons supervised*;					
Outline Report: (Use bulleted form)					
Nature of training or experience in the period(s)*:					
Typical problems addressed*:					
Responsibility for communication and documentation					
Management responsibilities					
Health and safety considerations; hazards and environmental considerations; legal and other impacts					
Applicant's role(s) and responsibilities:					

*** Mandatory**

Appendix F: Referee Report

The following template defines the elements (but not the exact format) of the Referee Report.

Engineering Council of South Africa **Referee Report on an Applicant for Registration as Professional Engineer**					
Applicant's Name:	**Application Number:**				
Referee Name:	**Registration:**			**Registration Number:**	
Referee Employer and other details:					
My personal knowledge of the applicant's achievements extends:	**From:**			**To:**	
My personal relationship with the applicant is:	**Unrelated**		**By birth**		**By marriage**
My professional relationship with the applicant is, for the period(s) shown:	**Mentor**	**Supervisor**	**Employer**	**Colleague**	**Client**
I am conversant with the competency standard R-02-PE. I understand that the information will not be disclosed by ECSA unless required by Law. **I hereby declare that the information provided is correct to the best of my knowledge.**	**Referee's Signature:** **Date Completed:**				

Evaluation of the Applicant's Competence or state of Development:
The level of competency required for registration as a Professional Engineer is defined in the Competency Standards, document R-02-PE. Competency is defined in terms of eleven outcomes and two level definitions, namely *complex engineering problems* and *complex engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineer for at least one year.

As a referee, you are asked to rate the applicant against the outcomes as well as make a holistic evaluation.
Please use the following scale:

CDC: The applicant consistently demonstrates competence
CDI: The applicant has demonstrated competence but not consistently
CNDD: The applicant has not demonstrated competence but is developing
CND: The applicant has not demonstrated competence
X: I am unable to comment

Please enter your comments in the third column, giving your reason(s) for assigning the particular rating. Where a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating.

Outcomes	Rating	Reason
Group A: Engineering Problem Solving		
1: Define, investigate and analyse complex engineering problems		
2: Design or develop solutions to complex engineering problems		
3: Comprehend and apply advanced knowledge: principles, specialist		

knowledge, jurisdictional and local knowledge		
Group B: Management of Engineering Activities		
4: Manage part or all of one or more complex engineering activities		
5: Communicate clearly with others in the course of his or her engineering activities		
Group C: Impacts of Engineering Activity		
6: Recognize and address the reasonably foreseeable social, cultural and environmental effects of complex engineering activities		
7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her complex engineering activities		
8: Conduct engineering activities ethically		
Group D: Exercise judgement, take responsibility		
9: Exercise sound judgment in the course of complex engineering activities		
10: Be responsible for making decisions on part or all of complex engineering activities		
Group E: CPD		
11: Undertake professional development activities sufficient to maintain and extend his or her competence		

Optional: Further comments or additional information on the Applicant:

Viewed Holistically:		
The applicant has demonstrated competence to be registered as a **Professional Engineer**		

Appendix G: Engineering Report Format

The following template defines the elements (but not the exact format) of the Engineering Report.

<table>
<tr><td colspan="4">Engineering Council of South Africa
Engineering Report
as part of Application for Registration as Professional Engineer</td></tr>
<tr><td>Applicant:</td><td colspan="2">Application Number:</td><td rowspan="2">Reference to Standard</td></tr>
<tr><td rowspan="2">In terms of my general declaration, I confirm that this report was written by me for the purpose of this application</td><td colspan="2">Signature:</td></tr>
<tr><td>Date:</td><td>Word Count:</td><td></td></tr>
<tr><td colspan="3"></td><td></td></tr>
<tr><td colspan="4">Instructions:
1. This is a report in which the applicant reflects on his or her engineering development and proficiency achieved as exemplified by work completed. Work completed is not necessarily in a single project.
2. Write the report in conventional prose form, using the first person singular when describing your actions or thinking, in the space above.
3. Insert one heading or paragraph in each row. Do not insert boundary lines between rows.
4. Insert cross references to TERs by number where appropriate.
5. Against relevant paragraphs, insert annotations that indicate that the material shown provides evidence of competent performance. Use the following Notation:
A1, B2, C1 : The outcomes defined in R-02-PE demonstrated
CEP : Engineering Problem referred to meets Complex Engineering Problem descriptor
CEA : Engineering Activity referred to meets Complex Engineering Activity descriptor
DoR x : Degree of Responsibility x = degree from A to E (See R-03-P, section 4.3)
4. Observe the length limits of 2 500 to 3 500 words. Insert the word count (main column only) in the space provided. Diagrams, tables and other illustrations may be inserted in the main column but must not exceed a total more than two page heights. These are not included in the word count. The length limit (text and illustrations will be strictly enforced).
6. The instructions may be deleted when the report is completed.</td></tr>
</table>

Annexure H: Template for Submission of Pre-registration CPD-type activity

Engineering Council of South Africa **Pre-registration CPD-type Activity Report (IPD)**				
Applicant's Name:			**Application Number:**	
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:
Date(s) attended*	Provider*:	Name of Course*	Hours*:	Validating body
Venue*:	Lead presenter*:	Type*:	Points	Validation No:

* Compulsory field

Annexure I: Competency Assessment Instruments

In Terms of the registration Policy R-01-P, the following are party to the assessment of an applicant's competence and must exercise only the options shown:

Assessment Party	Function	Evaluate		Evaluation Options	Definition
		Outcomes	Overall		
Referees (2)	Acting individually, from first-hand knowledge of the applicants work, *rate the applicants competence* against the outcomes and holistically	√	√	CDC CDI* CNDD* CND* X	Applicant consistently demonstrates competence Applicant has demonstrated competence but not consistently Applicant has not demonstrated competence but is developing Applicant has not demonstrated competence I am unable to comment
Experience Appraisers	Acting individually, from the documentation (TERs and Engineering Report) rate the level to which the evidence *indicates competence* against the outcomes and holistically	√	√	CI CIC* CNIC* CNI*	CI Competence Indicated CIC* Competence Indicated subject to confirmation at the PR CNIC* Competence Not Indicated: further information required Competence not indicated (CNI)*
Professional Reviewers	Acting jointly, from the documentation, taking the referees' and experience appraisers ratings and comments into account, and information gained during the presentation and interview, recommend whether the applicant has *demonstrated competence.*	√	√	CD CND*	= Competence Demonstrated = Competence not Demonstrated*
Assessment Committee (PAC)	Considering the report of the professional review, incorporating the experience appraisal and referees reports, moderate the recommendations. Decide holistically whether the applicant has demonstrated competence (register) has not yet demonstrated competence (defer) or has not demonstrated competence (recommend refusal)	√		Reg Def* RRef*	Register Defer application for up to 12 months* Recommend Refusal of Registration*
Registration Committee	Further moderate recommendations to refuse registration before forwarding these to the Central Registration Committee.	√		RRef* RBack*	Recommend Refusal of Registration* Refer back for reconsideration
Central Registration Committee	Ensuring that due process has been followed confirm or change the recommendation to refuse registration	√		Ref* RBack*	Refuse Refer back for reconsideration
* Requires reason or matter requiring further investigation to be supplied.					

The following common assessment framework must be used Referees, Experience Appraisers and Professional Reviewers. Committees with delegated responsibilities **Group A Outcomes**		**Evaluation**	**Reason and Further Issues to be Examined in Professional Review Required for <any negative> Recommendations**
1	Define, investigate and analyse *complex engineering problems*		
2	Design or develop solutions to *complex engineering problem*		
3	Comprehend and apply advanced knowledge: principles, specialist, jurisdictional and local		
Group B Outcomes		**Evaluation**	**Reason**
4	Manage part or all of one or more *complex* engineering activities		
5	Communicate clearly with others in the course of his or her engineering activities		
Group C Outcomes		**Evaluation**	**Reason**
6	Recognise and address the reasonably foreseeable impacts of *complex* engineering activities.		
7	Meet all legal and regulatory requirements, and protect the health and safety of persons in *complex* eng. activities.		
Group D Outcomes		**Evaluation**	**Reason**
8	Conduct engineering activities ethically.		
9	Exercise sound judgement in the course of *complex engineering activities.*		
10	Be responsible for making decisions on part or all of *complex engineering activities.*		
Group E Outcome		**Evaluation**	**Reason**
11	Undertake professional development activities sufficient to maintain and extend his or her competence.		
Summative Assessment		**Evaluation**	**Reason**
Taken as a whole the applicant's evidence of competence demonstrates against the standard that:			

Revision History

Version	Date	Status/Authorised by	Nature of Revision
Rev 1.0:	25 Nov 2011	Council	
Rev 1.1	2 Aug 2012	JIC	Section 4.4 rewritten, Annexure H added
Rev 1.2	11 Oct 2012	Recommended to Council	Table 3 and Annexure D simplified, clarification and correction of text.
Rev 1.2	24 Nov 2012	Approved by Council	

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Processing of Applications for Registration as Candidate Engineering Technologist and Professional Engineering Technologist			
Status: Approved by Council			
Document : R-03-PT	**Rev-1.8**	**31 July 2014**	

Background: The ECSA Registration System Documents

The documents that define the Engineering Council of South Africa (ECSA) system for registration in professional categories are shown in **Figure 1** which also locates the current document.

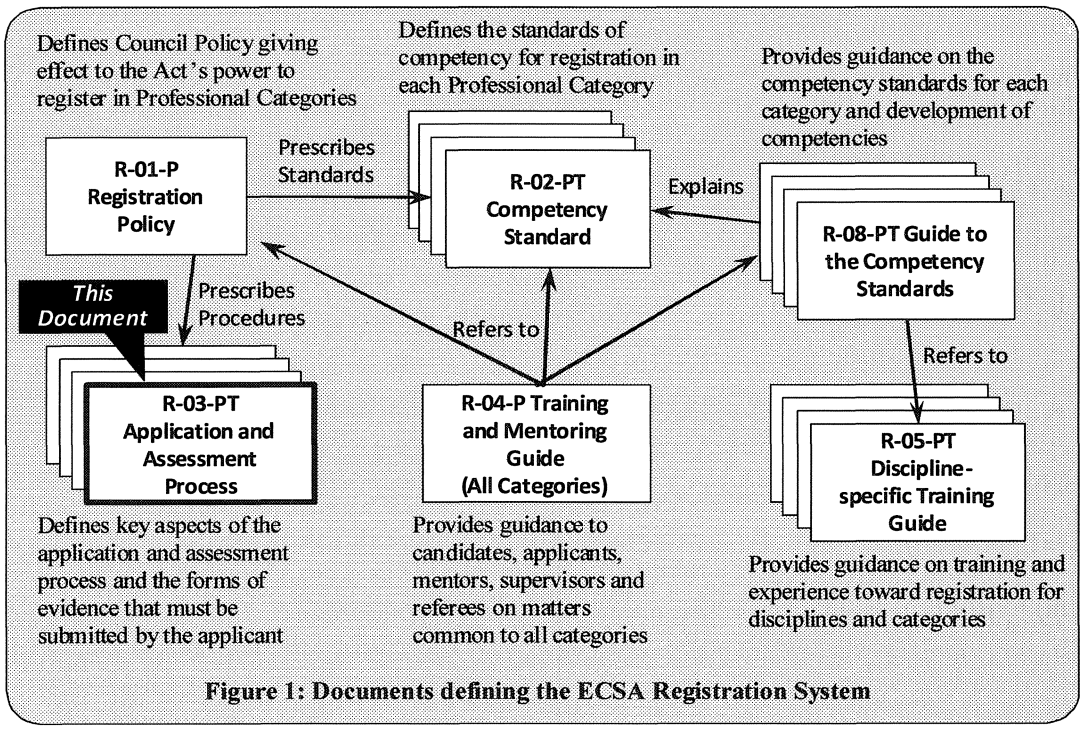

Figure 1: Documents defining the ECSA Registration System

1. Purpose of this Document

This document defines the processes used by the ECSA to receive, process and make decisions on applications for registration as a Candidate Engineering Technologist and as a Professional Engineering Technologist.

These processes are carried out under the authority of the Engineering Profession Act (Act No. 46 of 2000) and registration policies defined in document R-01-P. This document supports the management of the registration process and assessment of applicants against the competency standard R-02-PT. Section 3 provides a high-level definition of the registration process resulting from the implementation of the policy defined in document R-01-P.

2. Changes introduced in this document

The ECSA Registration Policy (R-01-P), Competency Standards (R-02-PT) and Education Evaluation policy (E-17-P) approved in January 2010 and March 2011 respectively and the processes defined in this document bring about a number of changes to the registration system, greater clarity as well as improvements to the application and assessment process. The main changes are summarized in Table 1. In summary:

2.1 It is not the intention to change the standard required for registration but to better define it in terms of the outcomes produced and the required level rather than specifying that the training must be such as to develop competence. See **Appendix A** for a comparison between the specification of R2/1B, supplemented by the Discipline-specific Guide (DSG) and the Competency Standard R-02-PT.

2.2 The forms of evidence of competence have been made uniform across the disciplines and provide evidence against all the outcomes. See **Appendix B** for the role of each form of evidence in relation to individual outcomes.

2.3 The assessment process is uniform across the disciplines.

3. Process Outline

The processes defined below are designed to handle the various cases that arise on the route to registration taking into account that applicants for professional registration do not necessarily register in a candidate category and that the educational requirement may be satisfied by several mechanisms, including educational evaluation.

The registration process is divided into two main sections:

- A secure system for applying on-line, entering the necessary data and uploading documents as required; and
- The core assessment process encompassing the Extended Experience Appraisal, Committee Decision and Administrative finalization.

3.1 Common User Identification and Login

Figure 2 shows the essentials of the application system. A new user must supply basic details before being given a User ID and a password. Basic Details are: First Name(s), Surname, Date of Birth, Title, South African ID number (or Passport number and Nationality if not in possession of an SA ID), e-mail Address, Mobile Phone Number. The person must also indicate whether he or she was previously or is currently registered or has previously applied, supplying the Registration/Application Number (if known).

After determining that the person is not already in possession of a User ID, the system will issue the user with a unique User ID and sets up a password. Existing users may login at any time. The user is presented with a menu which will ultimately contain all the services available. For applicants for Candidate and Professional Engineering Technologist four options are relevant:

- Apply for registration as a Candidate Engineering Technologist
- Apply for registration as a Professional Engineering Technologist
- Apply for Educational Evaluation
- Continue with my application

Note: The acronyms and abbreviations used in the tables and flow diagrams following are listed in the Nomenclature on page 16.

Table 1: Changes introduced by 2011 policy, standards and procedures

Aspect	Prior to this policy	Under this policy
Registration Policy	Embedded in Policy R2/1B: Acceptable Work for Candidate Engineering Technologists; does not consider other classes of applicants explicitly.	• Single, integrated policy R-01-P, defining registration and education policy, linking with standards (R-02-PT) and processes (this document), applies to all applicants.
Educational Requirements Policy	Accredited or recognized qualification or prior evaluation of qualification(s) as meeting educational requirements.	• No change to accredited or recognized qualifications. • Accelerated evaluation of listed qualifications • Evaluation criteria defined in document E-17-P for qualifications and assessed learning.
Standard of Competency for Registration	Training requirements for Candidate Engineering Technologists, in R2/1B section 5 with further requirements in the Discipline Specific Guidelines	• Competency Standard for registration as a Professional Engineering Technologist in document R-02-PT. • Eleven outcomes, with definitions for the level of problem solving and engineering activities. • Professional Attributes included in the standard • Level descriptors differentiate between categories
Seeking registration without normal qualification	The Technologist Alternate route allowed experience of a defined standard, duration and Initial Professional Development (IPD) achievement to be accepted in lieu of academic qualifications Development assessed on educational outcomes based claim to competency submitted by the Candidate.	• Criterion-based method of meeting education requirements by evaluation and assessment defined in E-17-P. When educational requirements are complete, apply for registration in normal way. No additional time limits. Continuation of educational competency development assessment (Interim). • Identified methods of further learning and assessment.
Evidence of Training/ Competency	For all disciplines: • Training and Experience Summary • Training and Experience Reports • Project Report • Referee Reports • Educational Development Report for Alternative Route Applicants • Initial Professional Development (IPD) Report • Discretionary interview in individual cases	Uniform requirements across disciplines: • Training and Experience Summary (TES) • Training and Experience Reports (TER) • Training and Experience Outlines (TEO)[a] • Engineering Report[b] • Referee Reports • Pre-registration CPD-type activity – IPD • Educational Development Report for Alternative Route Applicants (Interim) • Discretionary interview in individual cases
Assessment of Competency	Done against Outcomes and Criteria applying evidence submitted mainly in the Project Report, Educational Development Report (if applicable) and IPD Report, supplemented by the Experience Reports and Referee Reports. Interviews if necessary.	• Policy (R-01-P) defines main stages and permitted decisions in the assessment process. Extended Experience Appraisal sanctioned by Council • Common assessment instruments addressing the outcomes and an integrative judgement, providing consistent trails through all stages
Decision Making	Delegation of decision to register or defer to the Registration Committee, reserve refusal to Central Registration Committee	• No change to delegation • Two deferments permitted • Credit given for outcomes fulfilled
Application	Manual, paper-based	On-line (Transitional paper-based)
Process Definition	Embedded in part in other documents	• High level process definition (this document) • Detailed IT system specification.
Training and Mentoring Guidelines	Discipline Specific guidelines having force of standards/policy.	Layered set of guidelines: • Training and mentoring (all categories) (R-04-P) with defined responsibility levels. • Guide to competency standards for Professional Engineering Technologists (R-08-PT) • Discipline-specific Training Guide (R-05-PT)

Notes:

a. Defined short form of TER, with clear rules when a TEO may be substituted by an experienced applicant.

b. Replaces Project Report, emphasis on demonstrating the applicant's engineering ability.

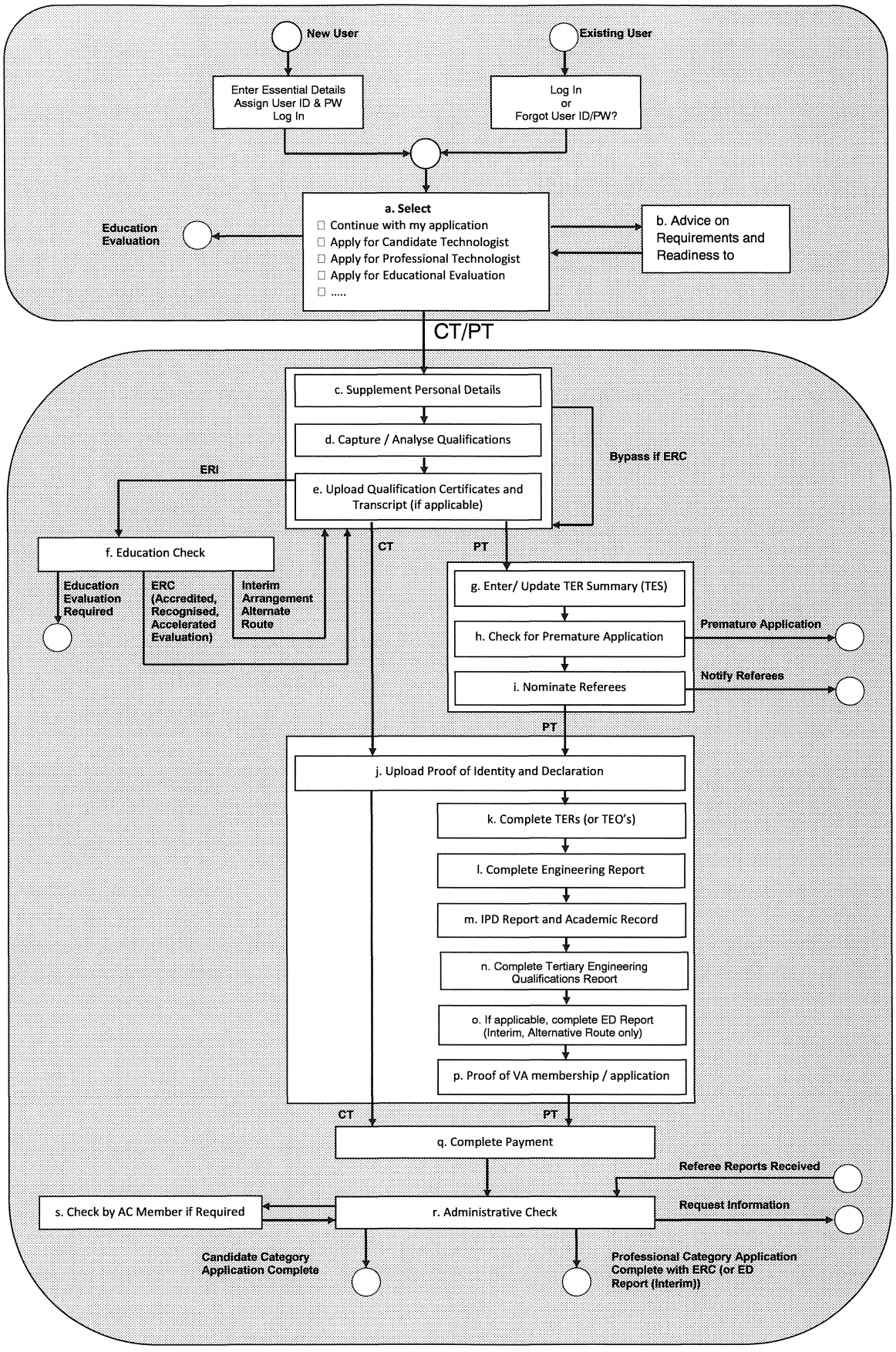

Figure 2: Common front-end and data entry for applications for Candidate Technologist and Professional Technologist

3.2 Data Entry System: Candidate and Professional Engineering Technologist

Applications for registration require pre-conditions to be fulfilled including payment of the prescribed fee, submission of the personal information, qualification, and supporting documents, which may include documents prepared by third parties, for example referee reports which are uploaded directly by the referees. The process described in **Figure 2** ensures that the preconditions are fulfilled before the start of evaluation of the applicant's competence[1].

Applicants for Candidate Engineering Technologist (CT) and Professional Engineering Technologist (PT) are taken via the menu to the second part of **Figure 2** where the following sub-processes occur:

- Provide the rest of their required information: addresses, employment, phone numbers, demographic information, and voluntary association membership.
- Enter Qualifications with separate steps for:
  - 3.2.1 Accredited qualifications
  - 3.2.2 Sydney Accord Qualifications
  - 3.2.3 Other Qualifications

In case 3.2.1, the qualification is selected from the ECSA database. In case 3.2.2 details are captured and confidence checks are performed (Country is a signatory, is qualification listed by signatory, completion year in range of validity, etc.). A status Provisional Educational Requirements Complete (ERC) is issued, with a disclaimer that the qualifications will be checked at a later stage.

In all cases, the applicant now uploads certified copies of degree certificate(s) and academic record(s)/transcript(s)/diploma supplements. If the qualification certificate or transcript is not in English or is not printed in western characters, a certified translation must be supplied. In cases 1 and 2, the parallel qualifications check process is launched for peer verification of the qualifications. In case 3, the details of qualifications are captured and the applicant is referred to the educational evaluation process. For the interim, for applicants with known other qualifications an Educational Development report will be required and evaluated as part of the registration competency assessment process.

An applicant for Professional Engineering Technologist (PT) then enters the Training and Experience Summary (TES) information on-line. A simple check on the number of weeks at different levels is used to detect premature applicants. An applicant who is warned of the premature nature of application may re-enter when further information on further experience is available. For each period shown in the TES, the applicant must supply a Training and Experience Report in the format shown in **Appendix D**.

The PT applicant then nominates Referees who are notified directly by the system. (CT Applicants are not required to nominate Referees.) The Applicant must provide full details of Referees who are not registered with ECSA.

[1] Note: An applicant re-entering the system and choosing "Continue with my application" will be taken to the next piece of missing information.

In the next phase required documents are uploaded as required for the two types of applicant:

Candidate Technologist Applicant	Professional Technologist Applicant	Prescribed Format
	Engineering Report	Appendix G
	Academic Record	Appendix H
	Initial Professional Development Report	Appendix I
	Educational Development Report (Interim)	Appendix X
Proof of Voluntary Association Membership or Application (Optional)		-
Proof of Identity: Original copy of RSA ID book or Passport, certified by Commissioner of Oaths		-
Declaration, signed by applicant in presence of Commissioner of Oaths		-

Payment is completed online or electronic find transfer (EFT) or by direct deposit. In the last two cases proof of payment must be uploaded.

The referees complete their reports and upload the reports using their logins.

The application, including the referee reports, is checked by a registration officer. Incomplete information must be supplied by the applicant via the Continue My Application option. When the application is judged complete, and the Education Check has returned an ERC and the referee reports have been completed, the application is marked as complete. The application is progressed to the next stage.

Note: **Figure 2 and 3** do not show the mechanisms for detecting when the completion of a step is incomplete and the notifications that are sent.

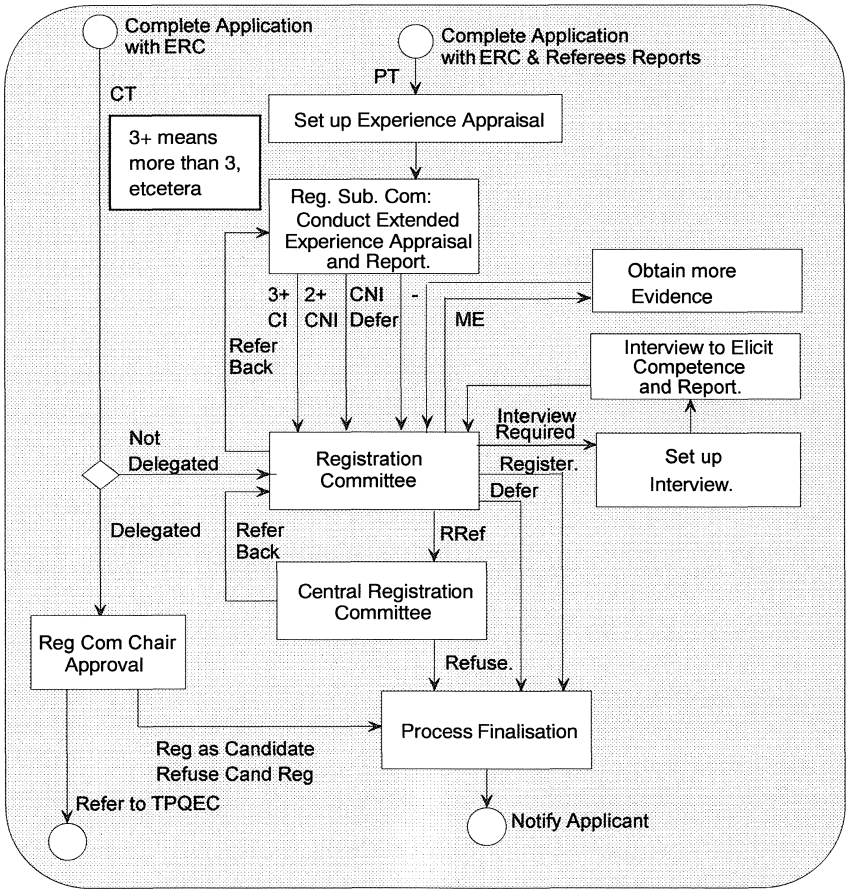

Figure 3: Assessment process for applications for Candidate and Professional Engineering Technologist

3.3 Core Process for Candidate and Professional Engineering Technologist

The process in **Figure 3** gives effect to section 6 of the registration policy R-01-P in the case of Candidate and Professional Engineering Technologists. The Professional Engineering Technologist Category has permission of Council to use the Extended Experience Appraisal method for assessing Applicants for registration. The process in **Figure 3** also gives effect to section 6.12, 6.17 and 6.18 of the registration policy R-01-P.

3.3.1 Professional Engineering Technologist Applicants

Once an application for professional registration is complete with education requirements fulfilled as determined in **Figure 2**, the evaluators for the Extended Experience Appraisal are selected and the appraisal starts. The evaluators perform individual evaluations on-line using the assessment form in **Appendix J**. The team leader of the sub-committee formulates a consensus recommendation for submission to the Registration Committee marking up his/her own **Appendix J** assessment form accordingly. In cases of Refusal, Interview, Deferral or More Evidence, the team leader also prepares a draft letter to the applicant reflecting the consensus assessment results.

3.3.2 Professional Engineering Technologist Applicants – Alternative Route

An interim arrangement for applicants not meeting the educational requirements will be applicable until ECSA examinations can be offered. An educational development experience appraisal will be done based on evidence submitted by the applicant in an Educational Development Report in the format shown in **Appendix X**.

The process flow is in accordance with the policy of R-01-P section 6 and contains the following main elements:

Experience Appraisal: is an assessment of the applicant's competence using the submitted documentation to determine whether the evidence submitted is *indicative* of competence against the standard

- If competence is indicated, proceed from Sub-committee to Registration Committee. This step is signed off by the chair of the Registration Committee.
- If competence is not indicated, refer to Registration Committee.

If the experience appraisal is not indicative of competency, the Registration Committee reviews the Sub-committee's recommendation and must adopt one of the following measures:

- If competence is not indicated with the information at hand, and it is felt that the applicant could remedy the deficiency / deficiencies by providing specific further information, select the recommendation to request more evidence (ME). Once the additional evidence is received, return to step 1 and/or:
- If competence is not indicated but further assessment is warranted, determine that an interview (I) is required. The team leader of the interview sub-committee prepares a report by marking up the consensus results from the original assessment on the assessment form (**Appendix J**). The report is considered by the Registration Committee and the recommendation is either accepted or amended.
- Defer the application for up to 12 months to give the applicant the opportunity to gain experience to fulfill outstanding competency requirements subject to a maximum of two deferments. This step is signed off by the chair of the Registration Committee.

- If refusal is recommended. The recommendations are considered by both the Technologists Registration Committee and the Central Registration Committee.

Table 2: Forms and Documents

Ref	Appen	Components of Application	For Registration As	
			Candidate Engineering Technologist	Professional Engineering Technologist
		On-line application form	X	X
		Declaration signed by applicant and Commissioner of Oaths	X	X
		Proof of Identity (SA ID book or Passport)	X	X
TES	C	Summary of Training and Experience Reports		X
TER	D	Training and Experience Reports (Generally more than one) Individual Reports to be signed by supervisor. Training and Experience Outlines may be used where permitted. (Evidence of responsibility)		X
TEO	E	Training and Experience Outline for applicants with at least ten years of experience after ERC		X
ER	G	Engineering Report (Evidence of competency).		X
IPD	H	Academic Record/transcript (List of Subjects and Grades)	X	X
IPD	I	Record of IPD (Pre-registration CPD)		X
EDR	X	Interim Educational Development Report until ECSA examinations can be conducted for Alternate Route applicants only (Voluntary – evidence of development)		X
		Proof of Voluntary Association membership (Optional) (Copy of certificate or letter)	X	X
		Qualification Certificates (If not already submitted)	X	X
REF	F	Referee reports, signed by referees (Three or more)		X

4. Evidence and Assessment for Registration as a Candidate Engineering Technologist or Professional Engineering Technologist

4.1 General Requirement

The assessment system for applicants for registration as Professional Engineering Technologists must implement the requirement laid down in the competency standard R-02-PT section 2.1:

> *Competence must be demonstrated within **broadly-defined** engineering activities, by integrated performance of the outcomes at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Training Guides.* (See Tables A1 and A2, Appendix A)

The evidence used to demonstrate competency must therefore address the defined outcomes in the competency standard.

4.2 Information and Evidence of Competency to be provided

Table 2 lists the information and forms of evidence that the applicant for registration as a Candidate Engineering Technologist or Professional Engineering Technologist must provide.

4.3 Training and Experience Summary (TES See Appendix C)

The Training and Experience Summary (TES) is a factual record of distinct phases of training and work experience during the applicant's career up to the time of application. The TES must identify each phase of training and experience and the level of responsibility.

CONTINUES ON PAGE 162—PART 2

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PART 2 OF 2

Periods during which the applicant is not engaged in activity that contributes to professional development must also be indicated, together with the reasons for inactivity.

A phase of training and experience corresponds to a period in which particular high level training objectives are to be fulfilled or a major task or project is completed. A phase typically ends when new training objectives are set, the type of work changes, the expected level of achievement changes, employment is terminated or engineering work is interrupted. See Table 4 for a list of events that demarcate a period of training and experience.

The nature of work and degrees of responsibility defined in document R-04-P, *(Progression throughout the candidacy period)*, are used here (and in the Training and Experience Reports:

Table 3: Nature of Engineering Work and Degrees of Responsibility

A: Being Exposed	B: Assisting	C: Participating	D: Contributing	E: Performing
Undergoes induction, observes processes, work of competent practitioners.	Performs specific processes, under close supervision.	Performs specific processes as directed with limited supervision.	Performs specific work with detailed approval of work outputs.	Works in team without supervision, recommends work outputs, responsible but not accountable
Responsible to supervisor	Limited responsibility for work output	Full responsibility for supervised work	Full responsibility to supervisor for immediate quality of work	Level of responsibility to supervisor is appropriate to a registered person, supervisor is accountable for applicant's decisions

Degree of responsibility E means performing at the level required for registration. This corresponds to the range statement in outcome 10 in the Competency Standard R-02-PT which requires that the applicant display responsibility "for the outcomes of significant parts of one or more broadly-defined engineering activities".

4.4 Training and Experience Reports

The Purpose of the Training and Experience Report (TER) is to provide a factual record of the main periods in the applicant's development from graduation to applying for registration and to identify the periods where the applicant took responsibility at the required level, providing evidence of meeting the outcomes required at the same time. Reference must be made to the engineering report and the specific outcome met.

Two templates are available for reporting on the applicant's training and experience and their use depends on the length and nature of that training and experience.

4.4.1 In general, an applicant must complete and submit a Training and Experience Report (TER) for each phase of training and work experience from the time of meeting the education requirements (ERC) to application for registration. TER(s) with total duration covering at least one year working at the degree of engineering responsibility E (Performing) must be submitted. Such periods need not be contiguous and need not include the last period reported.

4.4.2 The requirement in 4.4.1 may be relaxed in the case of an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at degree of engineering responsibility

E (Performing) in detail in the TER format that are signed by the supervisor. Such periods need not be contiguous and need not include the last period reported. Such an applicant may submit Training and Experience Outlines (TEO) for the remaining periods or groups of related periods.

4.4.3 An applicant who completes the education requirement by assessment under section 3.4(iv) of document R-01-P must submit TERs for at least three years, including reports for a total duration of one year at responsibility level E. Such periods need not be contiguous and need not include the last period reported. Periods of experience may predate completing the education requirement. TEOs may be submitted for other periods. In addition to the information on experiential requirements an applicant must, in the interim period until ECSA examinations can be written, provide evidence of educational development by completion of the Educational Development Report **(Appendix X).**

Any applicant whose training and experience history is shorter than three years, and has less than one year working at degree of responsibility E (Performing) will be notified that the application is premature and invited to submit further TES entries and TERs as they become available.

Note: Where the person is registered as a candidate engineering technologist with ECSA, the TES can and should be updated online and the corresponding TER uploaded by the candidate as each phase of training or work is completed. This may be done without initiating an application.

The information to be provided in the TER and TEO format is defined in **Table 4**.

Table 4: Information to be provided in Training and Experience Reports and Outlines

Aspect	Training and Experience Report (TER)	Training and Experience Outline (TEO)
Supervisor's signature	Required (indicates agreement with level of responsibility A-E inserted)	Required (indicates agreement with level of responsibility A-E inserted)
A period ends when:	• The work environment has changed, e.g. when a major training phase, task or ends; • the type of work has changed; • the responsibilities or level of function have changed (for instance, as in a promotion); • change of employer; • training or employment is interrupted (for instance by study, unemployment or prolonged illness).	• The level of responsibility changes from level B to C • the level of responsibility changes from level D to E • a promotion takes place • change of employment • training or employment is interrupted • nature of work changes significantly
Position in Organisation	• Supply an organogram, showing the names, position and registration (if any) and qualification (if not registered) of supervisor(s), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Always show the supervisor.	• Simplified organogram: Identify yourself, your supervisor and state the number and level of persons supervised
Reporting Format	• Write in the first person. Construct proper paragraphs dealing with key aspects from the list below	• Use bulleted format covering the items below

Topics to be covered: elements marked * are mandatory, others as applicable	• Nature of training or experience*	• Nature of the training or work phase or related phases
	• Discipline of Engineering and Discipline Specific Fields*	• Discipline of Engineering and Discipline Specific Fields*
	• Nature of problem(s) addressed, method of analysis, solution development and evaluation*	• Nature of problem(s) addressed, method of analysis, solution development and evaluation*
	• Management of materials, machines, manpower, methods or money, contracts	• Management responsibilities
	• Interaction with clients, stakeholders and other disciplines	
	• Health and safety considerations; hazards and environmental; other legislation*	• Legal and impact analysis*
	• The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)*	• The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)*
Length limit	430 words/TER, 5160 total for all TERs	13 bullet points per TEO

4.5 Engineering Report (See Appendix G)

Each applicant must submit an Engineering Report covering aspects of work at the Perform or Contribute responsibility level E that demonstrates that the applicant has fulfilled the required outcomes. The report has the following characteristics.

Purpose: The Engineering Report submitted by applicants for registration as a Professional Engineering Technologist enables the applicant to synthesise and present evidence structured in the prescribed format of his or her competence by describing the work he or she performed at the above responsibility level.

Type of Report: Consistent with its purpose, this report must be written specifically for the application for registration. It is not a conventional project report, for example of the type that would be submitted to an employer or client in the course of a project. The work described may be drawn from a major project or a series of projects. In the report, the applicant must reflect on his or her engineering activity in a way that that demonstrates the required competence at a *broadly-defined* level.

Format of Report: The report must be included in the template provided. The template prescribes the heading and closure of the report, the outcomes and criteria to be met and cross-reference to the Training and Experience Report (or Training and Experience Outline) to be inserted in the space provided.

Style of Writing: The report must be written in the first person (except when describing the actions of another person or agency), in proper structure, style and English language. The report is a test of written communication ability both from a structure, style and language point of view as well as logical development.

Length: The report body, including headings and subheadings, must be in the range 2800 to 3000 words (100 words per criterion). Diagrams, tables and pictures appropriate to the purpose defined above, not exceeding two A4 pages in total area may be included (in addition to the word count). The total file size is limited to 1 Mbyte.

How to write this report: The work drawn on for the report does not have to be project based; in an operational engineering work environment, problem solving and engineering management may provide evidence against the required outcomes.

The report must be based on problem solving and activities at a *broadly-defined* level, applying technologist level educational theory. Calculations at this level, done by the applicant, must be attached to the report.

Checklist: The report should touch on:

- Theoretical and practical methods used to analyse and solve engineering problems encountered in the work
- The engineering and contextual knowledge and understanding, both from the applicant's education and that acquired subsequently, for effective performance of the work;
- The planning, organising, leading and controlling of human and other resources required to achieve the goals of engineering work.
- Handling of regulatory considerations, impacts of the work that were not necessarily covered by regulation and ethical issues, recognition of obligations to society, the profession and the environment.
- Risk and uncertainty associated with the work and its product
- The recommendations, judgement calls and decisions that the applicant had to make, where the applicant's leadership skills exercised.
- The nature of the responsibility carried by the applicant and identification of the person to whom the applicant was responsible.

4.6 Referee Report (See Appendix F)

The purpose of the Referee Report is to draw on observations of the applicant's performance in work conditions to obtain information on the applicant's competency. The referees are asked to identify periods in the applicant's career as itemised in the TES where the referee feels able to comment on the attributes of the applicant. In relation to these periods, the referee is asked to:

- To rate the applicant's problem analysis and solution synthesis abilities in relation to the desired level (broadly-defined engineering problems);
- To rate the applicant's knowledge of engineering principles and of the wider context of the engineering work;
- To comment on the applicant's engineering management ability, that is the ability to ensure the achievement of engineering results through management methods;
- To rate the applicant's communication ability;
- To comment on the applicant's abilities to handle the regulatory, economic, social and environmental issues arising from engineering activity at a broadly-defined level;
- To comment on the applicant's understanding of ethics and ethical behavior in relation to his engineering work;
- To rate the applicant's judgement in decision making and acceptance of responsibility for engineering work at a broadly-defined level;
- The applicant's willingness and capacity to accept responsibility for engineering work at a broadly-defined level;
- To comment on the applicant's commitment and attention to competency and career development;

4.7 Academic Record and IPD Report (See Appendix H and I respectively)

The Academic Record (AR) and Initial Professional Development (IPD) Report is a factual record that serves as evidence of proficiency development from academic base through CPD-type activities of Category 1 and other formal learning activities prior to registration, including in-house training. Reported activities do not require Continuing Professional Development (CPD) validation. **Appendix I** specifies the information required on each activity.

5. Process for Educational Evaluation

The blocks Capture and Analyse Qualifications and Education Check in **Figure 1** are expanded in more detail in **Figure 4.**

The education evaluation process is shown in **Figure 5**. This is a stand-alone process that may be entered from the menu in **Figure 1**. It requires documents to be uploaded and the evaluation fee to be paid.

The following documents must be uploaded by the applicant:

5.1 A curriculum analysis using the worksheet provided. This is an Excel worksheet where the applicant would enter data and upload a PDF version of the file.

5.2 Syllabi of the subjects studied. This would be scanned copies of relevant pages of the university handbook/rulebook or course descriptions as issued to the student.

5.3 Project report(s) and/or design reports. These would be scanned copies.

5.4 Declaration and Proof of Identity.

The applicant must upload one set of items 1 to 3 for every qualification completed.

The applicant should be able to add documents relating to completion of learning of lesser extent than a full qualification. This would arise if an applicant completes further learning. This information is of the form:

5.5 Certification of completion of course/module and result achieved

5.6 Description of module including hours, breakdown of activity, syllabus, form of assessment

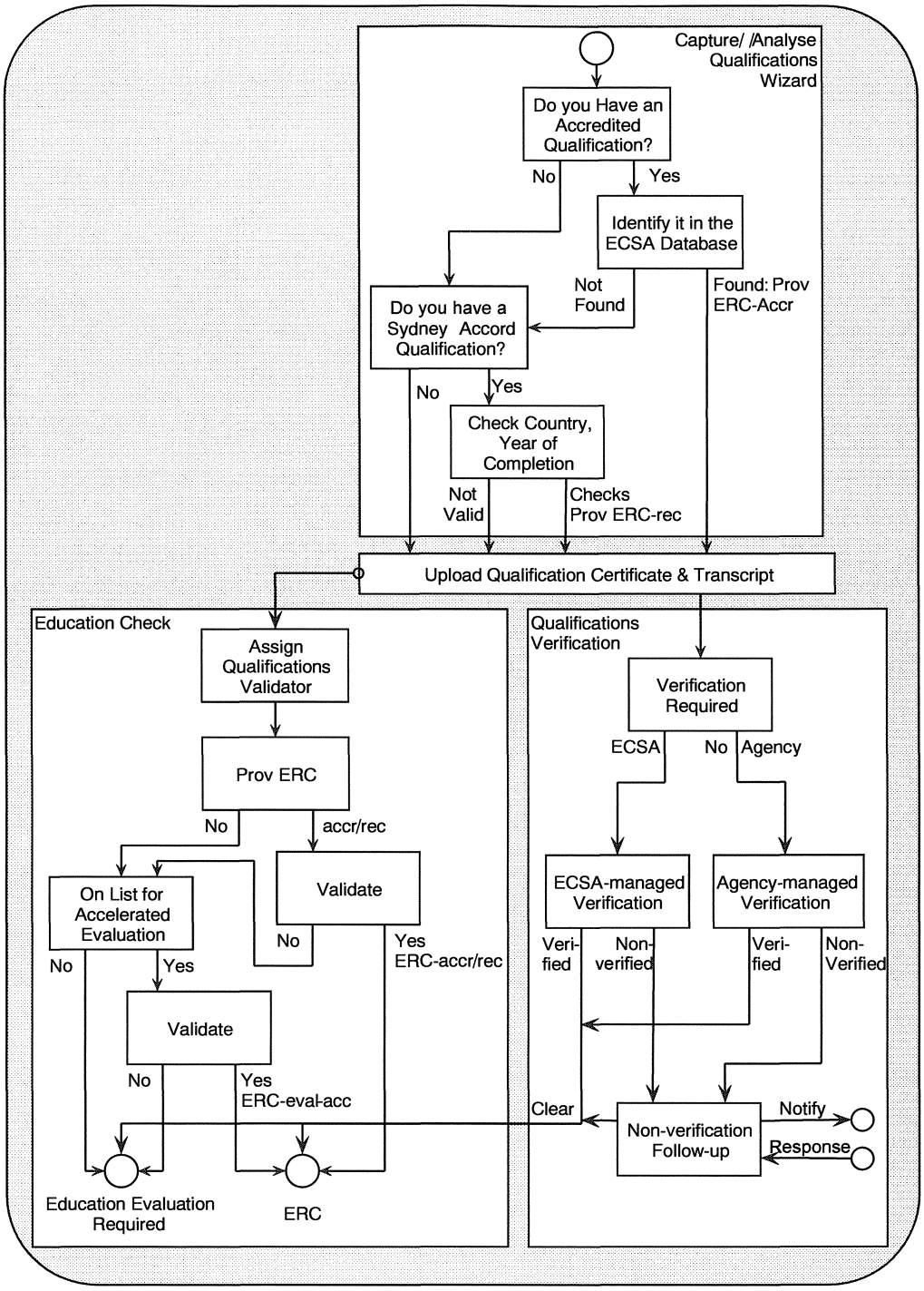

Figure 4: Detail of Capture/Analyse Qualification and Education Check in Figure 1

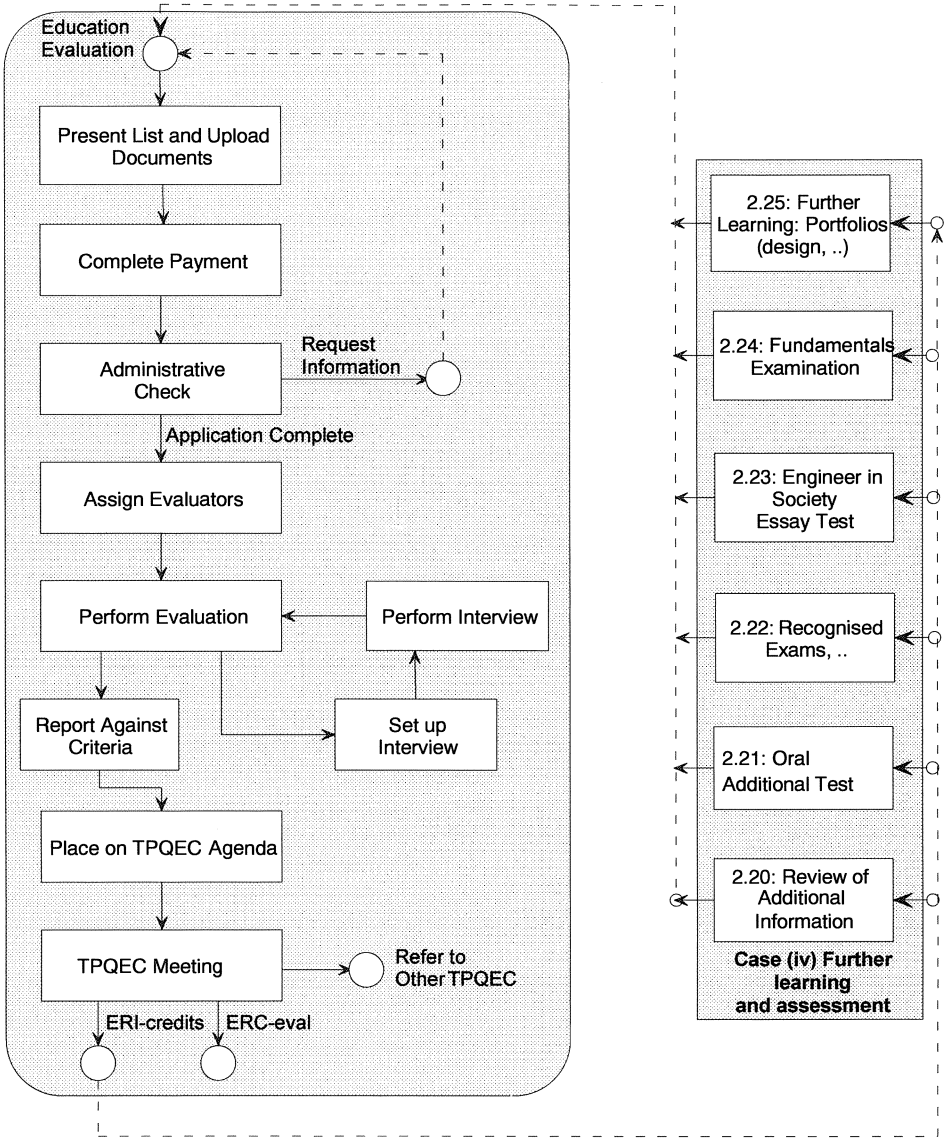

Figure 5: Education Evaluation process. The Further learning and assessment elements are shown for completeness: they do not form part of the Educational Evaluation process.

Appendix A: What Changes with the Introduction of Competency Standards?

Prior to the introduction of the competency standards, the requirements were expressed in terms of criteria for acceptable training in ECSA's policy document R2/1B. The requirements defined in section 5 of R2/1B are summerised in the first column of the following table. The outcomes embedded in the training requirements are extracted in column 2. The formal outcomes in R-02-PT are stated in column 3 while the level descriptor is in column 4. Table A1 relates to the Group A outcomes while table A2 relates to outcomes in Groups B, C and D.

Table A1: Transition from input-based training specifications to output-based competency specifications in Group A

1: R2/1B Essential Elements of Acceptable Practical Training	2: Outcomes Embedded in Training Elements in Column 1 or in DSG	3: Corresponding Competency Standard Outcome	4: Level descriptors for column 3
Acceptable practical training must provide satisfactory experience to Candidates in the application of engineering principles and methods and must include the practical training elements as stated in clauses 8.1.1 to 8.1. 4 inclusive at the level of responsibility stated in the Discipline Specific Guidelines. Outcomes expressed in criteria to be met, judged by peer evaluators.		**Requirement (R-02-PT Section 2.1):** Competence must be demonstrated within *broadly-defined engineering activities,* defined below, by integrated performance of the outcomes defined below at the level defined for each outcome. **Note:** Attributes of a professional person defined in outcomes	
8.1.1 Problem Investigation The work must be aimed at investigating engineering problems and for which engineering judgement is required. The following practical engineering functions are contained in such work to a greater or lesser degree: a) problem identification and formulation; b) finding and selecting relevant information; c) evaluating, investigating, testing and research; d) analysis of all factors that influence the solution like relevant engineering and scientific principles; e) taking into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.	The applicant must demonstrate the ability to: Investigate engineering problems, [at a level] that require[s] engineering judgement, performing the functions: : a) identify and formulate problem; b) find and select relevant information; c) evaluate, investigate, test and research; d) analyse all factors that influence the solution, including relevant engineering and scientific principles.	**Group A: Engineering Problem Solving** **1:- 1:-** Define, investigate and analyse *broadly-defined engineering problems*.	*Broadly-defined engineering problems* have the following characteristics: a) require coherent and detailed engineering knowledge underpinning the applicable technology area; *and one or more of:* b) are ill-posed, or under or over specified, requiring identification and interpretation into the technology area; c) encompass systems within complex engineering systems; d) belong to families of problems which are solved in well-accepted but innovative ways; *and one or more of:* e) can be solved by structured analysis techniques; f) may be partially outside standards and codes (must provide justification to operate outside); g) require information from practice area and sources interfacing with practice area that is complex or incomplete; h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties; *and one or both of:* i) requires judgement in decision making in practice area, considering interfaces to other areas; j) have significant consequences which are important in practice area, but may extend more widely.
		***3:-** Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices.	
8.1. 2 Problem Solution The work must be aimed at the full development of the suggested solution to the problem through a process of synthesis, with the application of all information acquired during the problem investigation, also using design, development and communication. This includes but is not limited to the drawing up of plans, detailed designs, reports, specifications, adjudication of tenders taking into account	The applicant must demonstrate the ability to: Develop the suggested solution to the problem through a process of synthesis and design; a) apply all information acquired during the problem investigation, b) communicate by but not limited to drawing up of plans, detailed designs, reports, specifications, c) adjudicate tenders d) take into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.	**2:-** Design or develop solutions to *broadly-defined engineering problems*.	

Table A2: Transition ... in Groups B, C, D and E

8.1. 3 Execution / Implementation The work must be aimed at the execution of engineering tasks or projects (for example construction, manufacturing, transformation, processing, production, commissioning, testing, certification, quality assurance, operation, maintenance and closure) encompassing the efficient utilisation of people, materials, machines, equipment, means and funding with due regard for their interaction, to achieve the end result within the set parameters.	The applicant must demonstrate the ability to: a) Execute engineering tasks b) Make efficient use of people, materials, machines, equipment, funding c) Handle interactions d) Achieve end results within set parameters	**Group B: Managing Engineering Activities** **4:-** Manage part or all of one or more *broadly-defined engineering activities*. ***Engineering activities*** **5:-** Communicate clearly with others in the course of his or her engineering activities **Group C: Impacts of Engineering Activity** **6:-** Recognise and address the reasonably foreseeable social, cultural and environmental effects of *broadly-defined* engineering activities. **7:-** Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her *broadly-defined* engineering activities.	*Broadly-defined Engineering Activities (BDEA):* are characterized by several or all of: a) *Scope* of practice area is linked to technologies used and changes by adoption of new technology into current practice; b) Practice area is located within a wider, complex *context*, requires teamwork, has interfaces to other parties and disciplines; c) Involve the use a variety *resources* (including people, money, equipment, materials, technologies); d) Require resolution of occasional problems arising from *interactions* between wide-ranging or conflicting technical, engineering or other issues; e) Are *constrained* by available technology, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws; f) Have *significant risks* and *consequences* in practice area and in related areas.
8.1. 4 Responsibility The work must be aimed at increasing engineering and managerial responsibility until Candidates are clearly able to accept full professional responsibility for taking engineering decisions. Part of their responsibility should also be to ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects as well as of the Code of Conduct.	The applicant must demonstrate the ability to: a) Accept professional responsibility for taking engineering decisions. b) Ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects c) Follow the code of professional conduct	**Group D: Exercise judgement, responsibility and act ethically** **8:-**Conduct engineering activities ethically **9:-**Exercise sound judgement in the course of *broadly-defined engineering activities.* **10:-** Be responsible for making decisions on part or all of *broadly-defined* engineering activities. ***Group E: Manage Own Development** **11:-** Undertake professional development activities sufficient to maintain and extend his or her competence.	

Nomenclature Figures 1, 2, 3, 4 and 5:

AR	Academic Record
CI	Competency Indicated
CN	Candidate Engineering Technician
CNI	Competency Not Indicated
ED	Educational Development
ERC	Educational Requirements Complete
ERI	Educational Requirements Incomplete
ID	On-line user identification
IPD	Initial Professional Development
ME	More Evidence
P	Applicable to all professional categories
PN	Professional Engineering Technician
PW	On-line pass word
R	Registration
REF	Referee Report
Rref	Registration Refused
TEO	Training and Experience Outline
TER	Training and Experience Report
TES	Training and Experience Summary
TPQEC	Technology Programme Qualifications and Examinations Committee
VA	Voluntary Association

Appendix B: Sources of Evidence against Outcomes

Notes: 1. *Broadly-defined* is the level identifier defined for the Professional Technologist category in document R-02-PT

(a) Engineering Report claims are verified by the applicant's supervisor.

No	Outcome	Training and Experience Reports	Engineering Report Incl claim to competency	Referee Reports (3)	IPD Report		Discretionary Interview	
A1	Define, investigate and analyse *broadly-defined engineering problems*	Factual/ Verified	Factual/ Verified	Evaluative		**Information to the left is considered in the Experience Appraisal**	Evaluative/ Verified	**All information is used by Interview Panel when making their recommendation to the Registration Committee**
A2	Design or develop solutions to *broadly-defined engineering problems*	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
A3	Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices	Factual/ Verified	Factual/ Verified	Evaluative	Factual: Knowledge Enhancement		Evaluative/ Verified	
B4	Manage part or all of one or more *broadly-defined* engineering activities	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
B5	Communicate clearly with others in the course of his or her engineering activities	Tests Concise Writing.	Factual/ Verified	Evaluative			Evaluative/ Verified	
C6	Recognise and address the reasonably foreseeable … impacts of *broadly-defined* engineering activities.	May not be covered	Factual/ Verified	Evaluative			Evaluative/ Verified	
C7	Meet all legal and regulatory requirements and protect the health and safety of persons in the course of *broadly-defined* engineering activities.	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
D8	Conduct engineering activities ethically.	May not be covered	Factual/ Verified	Evaluative			Evaluative/ Verified	
D9	Exercise sound judgement in the course of *broadly-defined engineering activities.*	May not be covered	Factual/ Verified	Evaluative			Evaluative/ Verified	
D10	Be responsible for making decisions on part or all of *broadly-defined engineering activities.*	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
E11	Undertake professional development activities sufficient to maintain and extend his or her competence.		Factual/ Verified	Evaluative/ Verified (Commitment)	Factual		Evaluative/ Verified (Commitment)	

Appendix C:

This information will be held in an on-line form containing the elements shown. Links will be provided to Training and Experience Reports.

Engineering Council of South-Africa

Training and Experience Summary **Form R-03-TES-PT** (2014-03-10)

Surname and Initials:

First complete a Training and Experience Report Form R-03-TER-PT, or a Training and Experience Outline Form R-03-TEO-PT for each period.

No	From	To	Weeks	Work Details		Respon-sibility A-E	TER or TEO
1				Employed by:	Post held:		Link TER1 or TEO1
				Type of Work:			
2				Employed by:	Post held:		Link TER2 or TEO2
				Type of Work:			
3				Employed by:	Post held:		Link TER3 or TEO3
				Type of Work:			
4				Employed by:	Post held:		Link TER4 or TEO4
				Type of Work:			
5				Employed by:	Post held:		Link TER5 or TEO5
				Type of Work:			
6				Employed by:	Post held:		Link TER6 or TEO6
				Type of Work:			
7				Employed by:	Post held:		Link TER7 or TEO7
				Type of Work:			
8				Employed by:	Post held:		Link TER8 or TEO8
				Type of Work:			
9				Employed by:	Post held:		Link TER9 or TEO9
				Type of Work:			
n				Employed by:	Post held:		Link TERn or TEOn
				Type of Work:			

When an applicant is not engaged in training and experience towards registration, the period must be reflected as follows:

x				Employed by: ***Not active***	Post held:		Link TERx or TEOx
				Type of Work: ***Insert reason here***			
Total years, months:							

Signature of Applicant: _____ **Date:** _____

Appendix D:

This form must be used for applicants who have completed and are submitting a report for each phase of training and work experience from the time of meeting the education requirements to application for registration. Consult the Information Sheet (Sheet B2) before completing this report.

Engineering Council of South Africa

Training and Experience Report **Form R-03-TER-PT** (2014-03-10)

As part of the Application for Registration as Professional Engineering Technologist

Applicant's Name				**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position held:**		
Employer's Name and Address for this period: (This is the employer and site at which the work took place, e.g. the site the applicant has been seconded to).				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
				If yes, provide number of CU:	**No:**	
Supervisor's Name and Address: **ECSA Registration No. (If not registered, qualify):**				**Supervisor's Signature:** **Date:**		

Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)	
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc)	

Organogram showing supervisor (person signing this report), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions, qualification and registration (if any)*. Please do not colour in blocks.

Report: (Write in proper paragraphs in the first person singular in less than 430 words)	**Refer to Engineering Report Outcome**
Nature of training or experience (stated in 20-30 words)*	Outcomes: Criteria:
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 120-150 words)*	Outcomes: Criteria:
Management of materials, machines, manpower, methods or money, contracts (stated in 40-50 words)	Outcomes: Criteria:
Interaction with clients, stakeholders and other disciplines (stated in 40-50 words)	Outcomes: Criteria:
Health and safety considerations; hazards and environmental considerations; other legislation (stated in 40-50 words)*	Outcomes: Criteria:

Describe role and responsibility (in 80-100 words)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Appendix E:

This form must be used for an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at a degree of engineering responsibility E (Performing) in detail TER format. For the remaining periods or groups of related periods the report can be in this TEO format. Consult the Information Sheet (Sheet B2) before completing this report.

Engineering Council of South Africa

Training and Experience Outline **Form R-03-TEO-PT** (2014-03-10)

As part of the Application for Registration as Professional Engineering Technologist

Applicant's Name				**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position(s) held:**		
Employer's and Supervisor Name and Address:				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
ECSA Registration No. (If not registered, qualify):				**If yes, provide number of CU:**	**No:**	

Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)	
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc)	

Organogram identifying yourself, your supervisor and persons supervised*. Please do not colour in blocks.

Outline Report: (Use bulleted form, using 10-13 bullets)	**Refer to Engineering Report Outcome**
Nature of training or experience in the period(s) stated in bullet format*	Outcomes: Criteria:
Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in bullet format)*	Outcomes: Criteria:
Management responsibilities (stated in bullet format)	Outcomes: Criteria:
Interaction with clients, stakeholders and other disciplines (stated in bullet format)	Outcomes: Criteria:
Legal and impact analysis (stated in bullet format) *	Outcomes: Criteria:

Describe role and responsibility (stated in bullet format)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Appendix F:

Engineering Council of South Africa **Referee Report on an Application for Registration as Professional Engineering Technologist**						**Form R-03-REF-PT** (2014-03-10)	
Applicant's Name							
Referee Name:		**ECSA Registration Category (e.g. PrTechEng):**		**Registration Number:**			
Referee Employer:		**Referee Cell Phone No:**					
		Referee E-mail address:					
My personal knowledge of the applicant's achievements extends:		**From:**		**To:**			
My personal relationship with the applicant is: (Mark one block)		**Unrelated**		**By birth**		**By marriage**	
My professional relationship with the applicant is, for the period shown: (Mark one block)		**Mentor**	**Supervisor**	**Employer**	**Colleague**	**Client**	

Evaluation of the Applicant's Competence or state of Development

The level of competency required for registration as a Professional Engineering Technologist is defined in the Competency Standards, document R-02-PT. Competency is defined in terms of eleven outcomes and two level definitions, namely *broadly-defined engineering problems* and *broadly-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineering Technologist (E) for at least one year.

As a referee, you are requested to rate the applicant against the outcomes as well as make a holistic evaluation.
Please use the following scale:

CDC: The applicant consistently demonstrates competence
CDI: The applicant demonstrated competence but not consistently
CNDD: The applicant has not demonstrated competence but is developing
CND: The applicant has not demonstrated competence
X: I am unable to comment

Please enter your comments in the third column, giving your reasons for assigning the particular rating. When a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating

Outcomes	Rating	Reason
Group A: Engineering Problem Solving		
1. Define, investigate and analyse broadly-defined engineering problems		
2. Design or develop solutions to broadly defined engineering problems		
3. Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practices		
Group B: Management of Engineering Activities		
4, Manage part or all of one or more broadly-defined engineering activities		
5. Communicate clearly with others in the course of his or her engineering activities		
Group C: Impacts of Engineering Activity		
6. Recognise and address the reasonable foreseeable social, cultural and environmental effects of broadly defined engineering activities		
7. Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her broadly-defined engineering activities		
8. Conduct engineering activities ethically		

Group D: Exercise judgement, take responsibility		
9. Exercise sound judgement in the course of broadly-defined engineering activities		
10. Be responsible for making decisions on part or all of broadly-defined engineering activities		
Group E: IPD		
11. Undertake professional development activities sufficient to maintain and extend his or her competence		

Optional: Further comments or additional information on the Applicant:

Viewed Holistically:		
The applicant has demonstrated competence to be registered as a **Professional Engineering Technologist**		

Declaration by Referee: I declare that the information provided is correct to the best of my knowledge. I hereby confirm that I am conversant with the Council's requirements for registration as set out in the Competency Standards, document R-02-PT as well as the instructions on this referee report, and that I am prepared to substantiate my view expressed herein at an interview, should the Council require me to do so. I also confirm that I submit this information to ECSA on the understanding that it will be treated as confidential. I understand that the information will not be disclosed by ECSA unless required by law.

Name of Referee: **Title of Position held:**

Signature of Referee: _____ **Date:**

Please post to:

⇨ **The Chief Executive Officer ● Engineering Council of South Africa**
Private Bag X691 ● BRUMA ● 2026

Appendix G:

Engineering Council of South Africa **Form R-03-ER-PT** (2014-03-10)

Engineering Report

Use this form to submit a report in about 100 words per criterion under Outcomes 1 to 11 below on recent engineering work to which you have made a significant contribution. The report may cover conceptualisation, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing or planning at a broadly-defined level. Please cross-refer the item reported upon to the relevant evidence in the Training and Experience Report (TER) or Training and Experience Outline (TEO). Provide sample relevant calculations and drawings as an addendum.

Use Appendix A of the Discipline Specific Training Guide R-05-PT to assist in the interpretation of the criteria

Name of Applicant:

Consult the Information Sheet (Sheet B2) before completing this report.

Area of Employment: (<15 words)	
Dates Undertaken:	
Engineering brief and objective: (<30 words)	
Environment: (Industry; Laboratory; Theory; Simulation) (<15 words)	
Short Summary: (State engineering problems; solutions in < 30 words)	
Budgets®<10 words)	

***Broadly-defined engineering problems** have the following characteristics:*

a) require coherent and detailed engineering knowledge underpinning the applicable technology area;
and one or more of:
b) are ill-posed, under- or over specified, requiring identification and interpretation into the technology area;
c) encompass systems within complex engineering systems;
d) belong to families of problems which are solved in well-accepted but innovative ways;
and one or more of:
e) can be solved by structured analysis techniques;
f) may be partially outside standards and codes; must provide justification to operate outside;
g) require information from practice area and sources interfacing with practice area that is complex and incomplete;
h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties;
and one or both of:
i) requires judgement in decision making in practice area, considering interfaces to other areas;
j) have significant consequences which are important in practice area, but may extend more widely

Broadly-defined engineering activities (BDEA) have several of the following characteristics:

a) *Scope* of practice area is linked to technologies used and changes by adoption of new technology into current practice;
b) Practice area is located within a wider, complex *context,* requires teamwork, has interfaces with other parties and disciplines;
c) Involve the use of a variety *resources,* including people, money, equipment, materials, technologies;
d) Require resolution of occasional problems arising from *interactions* between wide-ranging or conflicting technical, engineering or other issues;
e) Are *constrained* by available technology, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;
f) Have significant *risks* and *consequences* in the practice area and in related areas.

Outcomes and Criteria		Cross-reference to B2.1 TER or B2.1 TEO
Outcome 1: Define, investigate and analyse broadly-defined engineering problems.		
1.1 State how you performed or contributed in defining engineering problems leading to an agreed definition of the problems to be solved.		Period No:
1.2 State how you performed or contributed in investigating engineering problems including collecting, organising and evaluating information.		Period No:
1.3 Describe how you performed or contributed in analysing engineering problems, using conceptualisation, justified assumptions, limitations and evaluation of results.		Period No:
Outcome 2: Design or develop a solution to broadly-defined engineering problems.		
2.1 Describe how you designed or developed solutions to broadly-defined engineering problems.		Period No:
2.2 Indicate how you systematically synthesised solutions and alternative solutions or approaches to the problem by analysing designs against requirements, including costs and impacts on outside parameters. (requirements).		Period No:
2.3 State your part in the drawing up of detailed specification requirements and design documentation for implementation to the satisfaction of the client.		Period No:
Outcome 3: Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures and processes, systems or methodologies and those specific to the jurisdiction in which you practice.		
3.1 State what engineering principles, practices, technologies, including the application of BTech theory you apply in your practice area.		Period No:
3.2 Indicate your working knowledge of areas of practice that interact with your practice area to underpin team work.		Period No:
3.3 Describe your applied related knowledge of finance, statutory, safety and management.		Period No:

Outcome 4: Manage part or all of one or more broadly-defined engineering activities.		
4.1 State how you managed yourself, people, work priorities, processes and resources in broadly-defined engineering work.		Period No:
4.2 State your role in planning, organising, leading and controlling broadly-defined engineering activities.		Period No:
4.3 State your knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships.		Period No:
Outcome 5: Communicate clearly with others in the course of your engineering activities		
5.1 Demonstrate your ability to write clear, concise, effective technical, legal and editorially correct reports.		Period No:
5.2 Indicate your ability to issue clear instructions to stakeholders using appropriate language and communication skills.		Period No:
5.3 State any oral presentation you have made using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose.		Period No:
Outcome 6: Recognise and address the reasonably foreseeable social, cultural and environmental effects of broadly-defined engineering activities.		
6.1 Describe your ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural and environmental considerations.		Period No:
6.2 State what measures you have taken to mitigate the negative effects of engineering activities.		Period No:
Outcome 7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her broadly-defined engineering activities.		
7.1 State where you have identified applicable legal and regulatory requirements including health and safety requirements for the engineering activity.		Period No:

7.2 State in what circumstances you have assisted in, or demonstrated awareness of the selection of save and sustainable materials, components and systems and have identified risk and applied risk management strategies.		Period No:
Outcome 8: Conduct engineering activities ethically.		
8.1 Confirm that you are conversant and operate in compliance with ECSA's Rules of Conduct for registered persons.		Period No:
8.2 State how you identified ethical problems, the affected parties and select the best solution to resolve the problem.		Period No:
Outcome 9: Exercise sound judgement in the course of broadly-defined engineering activities.		
9.1 Within the application of your technologies and their interrelationship to other disciplines and technologies, state what judgement you exercised in arriving at a conclusion.		Period No:
9.2 State what factors you took into consideration bearing in mind, risk, consequences in technology application and affected parties.		Period No:
Outcome 10: Be responsible for making decisions on part or all of broadly-defined engineering activities.		
10.1 In discharging your responsibilities for significant parts of one or more activities, please state what engineering, social, environment and sustainable development you took into consideration.		Period No:
10.2 State what advice you sought from a responsible authority on matters outside your area of competence.		Period No:
10.3 State what academic knowledge of at least BTech level combined with past experience you used in formulating your decisions.		Period No:
Outcome 11: Undertake professional development activities sufficient to maintain and extend his or her competence.		
11.1 State what strategy you have independently adopted to enhance your own professional development.		Period No:

11.2 State your philosophy in regard to your professional development.		Period No:
Evidence of your competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form R-03-IPD-PT (Appendix H).		

Signature of Applicant: _____ **Date:**

Signature of Mentor / Supervisor: _____

Name of Mentor / Supervisor (printed): **Tel. No.:**

Appendix H: Academic Record

Engineering Council of South Africa **Form R-03-AR-PT** (2014-03-10)

Detailed information on

TERTIARY ENGINEERING QUALIFICATIONS

As part of the Application for Registration as a Professional Engineering Technologist

Name of Applicant:

Name of Qualification:

All subjects passed	Year Obtained	Marks obtained *(if available)*
Extra subjects passed for incomplete qualifications		
	Total Credits	

Signature of Applicant **Date**

Appendix I: Initial Professional Development Report (IPD)

Engineering Council of South Africa **Form R-03-IPD-PT** (2014-03-10)

INITIAL PROFESSIONAL DEVELOPMENT REPORT (IPD)

As part of the Application for Registration as a Professional Engineering Technologist

Name:

Discipline:

Itemise courses, workshops, conferences, symposia or congresses attended.
List these under the separate headings of engineering, management and computer courses.

Name or subject of item	Course Provider	Dates attended	SAQA NQF level if available	Duration in hours	Credits	For use of Assessor
Engineering Courses						
Management Courses						
Computer Courses						

Signature of Applicant **Date**

Appendix X: (Interim use for Alternative Route Applicants until ECSA examinations can be conducted)

Engineering Council of South Africa **Form R-03-EDR-PT** (2014-03-10)

EDUCATIONAL DEVELOPMENT REPORT

A	**INSTRUCTIONS** **1. Applicants not in possession of an ECSA accredited B Tech (Eng) should complete this work based (experience) learning report. WRITE A REPORT IN ABOUT 100 WORDS ON EACH CRITERION LISTED.** **2. Reports must include reference to *broadly-defined* practical examples in the work place demonstrating how the competencies were satisfied, and is not restricted to a single task or project. (Additional supporting evidence may be attached, if necessary – limited to two A4 pages).** **3. This information can be provided from education or experience, or a combination of both.** **4. The applicant must sign the completed report and also obtain a signature from his/her supervisor.** **5. The applicant may be invited to an interview to expand and/or confirm this report.**
	Broadly-defined engineering problems *have the following characteristics:* g) require coherent and detailed engineering knowledge underpinning the applicable technology area; *and one or more of:* b) are ill-posed, under- or over specified, requiring identification and interpretation into the technology area; c) encompass systems within complex engineering systems; d) belong to families of problems which are solved in well-accepted but innovative ways; *and one or more of:* e) can be solved by structured analysis techniques; f) may be partially outside standards and codes; must provide justification to operate outside; g) require information from practice area and sources interfacing with practice area that is complex and incomplete; h) involves a variety of issues which may impose conflicting constraints: technical, engineering and interested or affected parties.

B.	**APPLICANT'S PERSONAL DETAILS**			
	Name:		**Technical Qualifications:**	

C.	**EDUCATIONAL DEVELOPMENT REPORT (OUTCOMES BASED, DURING WORK EXPERIENCE)**

Exit Level Outcome 1. The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected sub-discipline together with the underpinning fundamentals of mathematics and natural science.

Item	Criteria	Development Report
1.1	State what mix of mathematical, natural science and engineering knowledge you applied in the solution of the *broadly-defined engineering problem.* State which theories and principles were used.	
1.2	Describe how you analysed and modelled the engineering materials, components, systems or processes used and provide the motivation for the specific selection.	
1.3	Describe the procedures applied for dealing with uncertainty and risk applicable to your own theoretical limitations and the use of specialists to do the work.	

Exit Level Outcome 2. The applicant displays proficiency in engineering specialist fields of a selected engineering sub-discipline at the exit level.		
Item	**Criteria**	**Development Report**
2.1	Describe how you analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem.	
2.2	Describe how you generated possible solutions to the problem and how they were modelled, analysed and prioritised.	
2.3	State how you selected, formulated and presented the preferred solution.	

Exit Level Outcome 3. The applicant displays proficiency in the use of engineering tools and IT support appropriate to the sub-discipline.		
Item	**Criteria**	**Development Report**
3.1	Describe how you assess the method, skill or tool (including computer applications) for applicability to solving problems.	
3.2	Describe how you applied the method, skill or tool correctly to achieve the required result, and how this tested against the required results.	

Exit Level Outcome 4. The applicant demonstrates design proficiency through substantial project work. The design problem meets the requirements of a *broadly-defined engineering problem* and the design approach is properly structured.		
Item	**Criteria**	**Development Report**
4.1	Describe how you formulated the design problem and how the design process was managed.	
4.2	Describe how user needs, legislation, standards and resources were acquired and evaluated.	
4.3	Describe how you performed the design task, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints.	
4.4	Describe how the selected design was evaluated in terms of impact and benefits and how this information was communicated in an engineering report.	

Exit Level Outcome 5. The applicant displays proficiency in experimental or investigative and information handling methodology		
Item	**Criteria**	**Development Report**
5.1	Describe the plan you devised to perform the investigation stating what information was used.	

Item	Criteria	Development Report
5.2	Describe the methodology you used to perform the analysis stating how the equipment and/or software was selected and used.	
5.3	From the data available, describe how information was derived, critically analysed and interpreted to reach conclusions.	
5.4	Describe how the purpose, process and outcomes of the investigation are recorded in an engineering report.	

Exit Level Outcome 6. The applicant communicates in writing at the exit level of a Btech programme
No entry required. Assessment will be done against evidence submitted in item 5 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 7. The applicant explains and analyses impacts of engineering technologies of the sub-discipline.
No entry required. Assessment will be done against evidence submitted in item 6 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 8. The applicant explains ethical principles and analyses ethical issues.
No entry required. Assessment will be done against evidence submitted in item 8 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 9. Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a team and to manage projects.
No entry required. Assessment will be done against evidence submitted in item 4 of the Engineering Report (Form R-03-ER-PT).

Exit Level Outcome 10. Engage in independent and life-long learning through well-developed learning skills.
No entry required. Assessment will be done against evidence submitted in the Initial Professional Development Report (Form R-03-ER-PT).

Signature of Applicant: _____Date:

Signature of Mentor / Supervisor: _____

Name of Mentor / Supervisor (printed): **Tel. No.:**

Appendix J:

	ENGINEERING COUNCIL OF SOUTH AFRICA Assessment Form: Professional Engineering Technologists	Form R-03-AF-PT (2014-04-14)

1	**Applicant's Personal Details:**	Name:		Age:		
	Employer:			ECSA Ref No:		

2	**Qualifications and Development:**	Engineering 1:		Date obtained:		Discipline	
		Engineering 2:		Date obtained:		Discipline	
		Other:		Date obtained:		Discipline	
		Previous Reg:		Date registered:		Category:	

3	**Referee Reports:** (R-03-REF-PT)	**No:**	**Registered as:**	**Work Relationship[15]:**	**Evaluation[3]:**	**Remarks:** (e.g. contact details of referee.)			
		1:							
		2:							
		3:							
		Holistic Evaluation (cross applicable block)[3]		CDC	CDI	CNDD	CND	X	

4	**Training and Experience Reports:** ✓ **if applicable** *(Periods 1 to 12, columns 4 to 7 only)*	**Period No:**	**Specifically Defined** *(Spec. Cat)*	**Well-Defined** *(Technician)*	**Broadly-defined** *(Technologist)*	**Complex Defined** *(Engineer)*	**Degree of Responsibility A to E[10]:**	**Duration in Years:** *(Enter years/months)* **Total**	**WR[11]>E+**
		1							
		2							
		3							
		4							
		5							
		6							
		7							
		8							
		9							
		10							
		11							
		12							
		Experience Required (yrs.):				**With Responsibility E (yrs.):**			
		Actual Experience (yrs.):				**Actual Responsibility E (yrs):**			

5. Individual Experiential Assessment:[13]	**Name and Signature:**		**Date:**
Competence Indicated, register (CI):		**Request more evidence as indicated (ME):**	
An additional ECSA registered referee in a supervisory capacity required I:		**Defer and update Engineering Report R-03-ER-PT to address lacking evidence indicated (Dx): (x = 1 or 2)**	
Competence Not Indicated (CNI) on the criteria as shown, do not register:		**Interview to obtain evidence indicated (I):**	

6. Group Experiential Assessment:[14]	**Signature Chairperson:**		**Date:**
Group Members:			
Competence Indicated, register (CI):		**Request more evidence as indicated (ME):**	
An additional ECSA registered referee in a supervisory capacity required I:		**Defer and update Engineering Report R-03-ER-PT to address lacking evidence indicated (Dx): (x = 1 or 2)**	
Competence Not Indicated (CNI) on the criteria as shown, do not register:		**Interview to obtain evidence indicated (I):**	

7. Interview Experiential Assessment:[14]	**Signature Chairperson:**		**Date:**
Interview Team Members:			
Competence Indicated, register (CI):		**Request more evidence as indicated (ME):**	
An additional ECSA registered referee in a supervisory capacity required I:		**Defer and update Engineering Report R-03-ER-PT to address lacking evidence indicated (Dx): (x = 1 or 2)**	
Competence Not Indicated (CNI) on the criteria as shown, do not register:			

8.	**Chairperson Technologist Committee (Experiential):**	Signed:	Date:

9. Assessment Results All Applicants: Score according to [4] – [8] in Nomenclature below for Engineering Report or Interview						
Outcomes and Criteria	**Indiv. Assess**	**Group Assess**	**Inter-view**	**Weight-ing[9]**	**Final Result[12]**	**Remarks**
Group A: Engineering problem solving:						
Outcome 1: Define, investigate and analyse broadly-defined engineering problems						
1.1 Performed or contributed in defining engineering problems leading to an agreed definition of the problems to be solved.				5		
1.2 Performed or contributed in investigating engineering problems including collecting, organising and evaluating information.				4		
1.3 Performed or contributed in analysing engineering problems, using conceptualisation, justified assumptions, limitations and evaluation of results.				5		
Normalised sub-total for Outcome 1 (Total final result and divide by 14):						=
Outcome 2: Design or develop solutions to broadly-defined engineering problems						
2.1 Designed or developed solutions to broadly-defined engineering problems.				5		
2.2 Systematically synthesised solutions and alternative solutions or approaches to the problem by analysing designs against requirements, including costs and impacts on outside parameters. (requirements).				5		
2.3 Drawing up of detailed specification requirements and design documentation for implementation to the satisfaction of the client.				4		
Normalised sub-total for Outcome 2 (Total final result and divide by 14):						=
Outcome 3: Comprehend and apply Btech theory						
3.1 Applied engineering principles, practices, technologies, including the application of Btech theory in the practice area.				5		
3.2 Indicated working knowledge of areas of practice that interact with practice area to underpin team work.				3		
3.3 Applied related knowledge of finance, statutory, safety and management.				3		
Normalised sub-total for Outcome 3 (Total final result and divide by 11):						=
Group B: Managing Engineering Activities:						
Outcome 4. Manage activity						
4.1 Managed self, people, work priorities, processes and resources in broadly-defined engineering work.				3		
4.2 Role in planning, organising, leading and controlling broadly-defined engineering activities evident.				4		
4.3 Knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships evident.				3		
Normalised sub-total for Outcome 4 (Total final result and divide by 10):						=
Outcome 5. Communicate during the activity						
5.1 Ability to write clear, concise, effective technical, legal and editorially correct reports shown.				3		
5.2 Ability to issue clear instructions to stakeholders using appropriate language and communication skills evident.				4		
5.3 Oral presentations made using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose.				4		
Normalised sub-total for Outcome 5 (Total final result and divide by 11):						=
Group C: Impacts of Engineering Activity:						
Outcome 6. Social, cultural and environmental impact of the activity						
6.1 Ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural and environmental considerations shown.				3		
6.2 Measures taken to mitigate the negative effects of engineering activities evident.				3		
Normalised sub-total for Outcome 6 (Total final result and divide by 6):						=

Outcome 7. Legal, regulatory and health and safety requirements						
7.1 Identified applicable legal and regulatory requirements including health and safety requirements for the engineering activity.				3		
7.2 Circumstances stated where applicant assisted in, or demonstrated awareness of the selection of save and sustainable materials, components and systems and have identified risk and applied risk management strategies.				3		
Normalised sub-total for Outcome 7 (Total final result and divide by 6):						=
Group D: Exercise judgement, take responsibility and act ethically:						
Outcome 8. Conduct engineering activities ethically						
8.1 Conversance and operation in compliance with ECSA's Rules of Conduct for registered persons confirmed.				2		
8.2 How ethical problems and affected parties were identified, and the best solution to resolve the problem selected.				2		
Normalised sub-total for Outcome 8 (Total final result and divide by 4):						=
Outcome 9. Exercise sound judgement						
9.1 Judgement exercised in arriving at a conclusion within the application of technologies and their interrelationship to other disciplines and technologies.				4		
9.2 Factors taken into consideration given, bearing in mind, risk, consequences in technology application and affected parties.				4		
Normalised sub-total for Outcome 9 (Total final result and divide by 8):						=
Outcome 10. Take decisions responsibly						
10.1 Engineering, social, environment and sustainable development taken into consideration in discharging responsibilities for significant parts of one or more activities.				4		
10.2 Advice sought from a responsible authority on matters outside your area of competence.				3		
10.3 Academic knowledge of at least Btech level combined with past experience used in formulating decisions.				5		
Normalised sub-total for Outcome 10 (Total final result and divide by 12):						=
Group E: Continued Professional Development:						
Outcome 11. Undertake learning activities						
11.1 Strategy independently adopted to enhance professional development evident.				3		
11.2 Awareness of philosophy in regard to professional development evident.				1		
Normalised sub-total for Outcome 11 (Total final result and divide by 4):						=
SUB-TOTAL SUMMATIVE ASSESSMENT:					**TOTAL(÷100)**	

10	**Comment and Instructions:**		
11	**Training Detail:**	Training under a C&U as detailed in Policy R-01-P Clause 7.4 (Y/N)	
		Name of organisation training the applicant	
		ECSA Registered Mentor (Y/N)	

12. Assessment Results Alternative Route Applicants: Score according to [4)-8)] in Nomenclature for R-03-EDR-PT Report or Interview							
	Outcomes and Criteria	**Indiv. Assess**	**Group Assess**	**Inter-view**	**Weight-ing[9)]**	**Final Result[12)]**	**Remarks**
1.	***The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected sub-discipline together with the underpinning fundamentals of mathematics and natural science.***						
1.1	Mix of mathematical, natural science and engineering knowledge applied in the solution of the broadly-*defined engineering problem* stated. Principles and laws used, stated.				5		
1.2	How engineering materials, components, systems or processes used were analysed, stated, and the motivation for the specific selection provided.				5		
1.3	The procedures applied for dealing with uncertainty and risk applicable to own theoretical limitations and the use of specialists to do the work described.				2		
2	***The applicant displays proficiency in engineering specialist fields of a selected engineering sub-discipline at the exit level.***						
2.1	Analysed and defined a problem and identified the engineering knowledge and skills required for solving.				5		
2.2	Generated possible solutions to the problem and how they were modelled, analysed and prioritised.				5		
2.3	Selected, formulated and presented the preferred solution.				3		
3.	***The applicant displays proficiency in the use of engineering tools and IT support appropriate to the sub-discipline.***						
3.1	How the method, skill or tool (including computer applications) was assessed for applicability to solving problems, described.				3		
3.2	How the method, skill or tool was applied correctly to achieve the required result described, and how this tested against the required results				3		
4.	***The applicant demonstrates design proficiency through substantial project work. The design problem meets the requirements of a broadly-defined engineering problem and the design approach is properly structured.***						
4.1	How the design problem was formulated and how the design process was managed, described.				4		
4.2	How user needs, legislation, standards and resources were acquired and evaluated, described.				4		
4.3	How the design task was performed, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints, described.				5		
4.4	How the selected design was evaluated in terms of impact and benefits described, and how this information was communicated in an engineering report.				5		
5.	***The applicant displays proficiency in experimental or investigative and information handling methodology***						
5.1	The plan devised to perform the investigation described, stating what information was used.				3		
5.2	The methodology used to perform the analysis described, stating the equipment and/or software used.				5		
5.3	How information was derived, critically analysed and interpreted from the data available to reach conclusions.				5		
5.4	How the purpose, process and outcomes of the investigation were recorded in an engineering report.				3		
6.	***The applicant communicates in writing at the exit level of a Btech programme.*** **(Use score from section 9 above, 5.1, 5.2 and 5.3)**						
6.1	Ability to write clear, concise, effective technical, legal and editorially correct reports shown.				3		
6.2	Ability to issue clear instructions to stakeholders using appropriate language and communication skills evident.				4		
6.3	Oral presentations made using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose.				4		
7.	***The applicant explains and analyses impacts of engineering technologies.*** **(Use score from section 9 above, 6.1 and 6.2)**						
7.1	Ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural and environmental considerations shown.				3		
7.2	Measures taken to mitigate the negative effects of engineering activities evident.				3		
8.	***The applicant explains ethical principles and analyses ethical issues.*** **(Use score from section 9 above, 8.1 and 8.2)**						
8.1	Conversance and operation in compliance with ECSA's Rules of Conduct for registered persons confirmed.				2		
8.2	How ethical problems and affected parties were identified, and the best solution to resolve the problem selected.				2		
9.	***Demonstrate knowledge and understanding of engineering management principles.*** **(Use score from section 9 above, 4.1 and 4.2)**						
9.1	Managed self, people, work priorities, processes and resources in broadly-defined engineering work.				3		
9.2	Role in planning, organising, leading and controlling broadly-defined engineering activities evident.				4		
9.3	Knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships evident.				3		
10.	***Engage in independent lifelong learning through well-developed learning skills.*** **(Use score from section 9 above, 11.1 and 11.2)**						
10.1	Strategy independently adopted to enhance professional development evident.				3		
10.2	Awareness of philosophy in regard to professional development evident.				1		
	SUB-TOTAL SUMMATIVE ASSESSMENT:						**TOTAL(÷100)**

13. Individual Educational Assessment:[13]	Name and Signature:		Date:	
Development to Btech level evident (CI):		Request more evidence as indicated (ME):		
An additional ECSA registered referee in a supervisory capacity required I:		Defer and update R-03-EDR-PT Report to address lacking evidence indicated (Dx): (x = 1 or 2)		
Development to Btech level not evident, Competence Not Indicated (CNI):		Interview to obtain evidence indicated (I):		

14. Group Educational Assessment:[14]	Signature Chairperson:		Date:	
Group Members:				
Development to Btech level evident (CI):		Request more evidence as indicated (ME):		
An additional ECSA registered referee in a supervisory capacity required I:		Defer and update R-03-EDR-PT Report to address lacking evidence indicated (Dx): (x = 1 or 2)		
Development to Btech level not evident, Competence Not Indicated (CNI):		Interview to obtain evidence indicated (I):		

15. Interview Educational Assessment:[14]	Signature Chairperson:		Date:	
Interview Team Members:				
Development to Btech level evident (CI):		Request more evidence as indicated (ME):		
An additional ECSA registered referee in a supervisory capacity required I:		Defer and update R-03-EDR-PT Report to address lacking evidence indicated (Dx): (x = 1 or 2)		
Development to Btech level not evident, Competence Not Indicated (CNI):				

16.	Chairperson Technologist Committee (Educational):	Signed:	Date:

Nomenclature:

1) IPD – Initial Professional Development, CPD – Continued Professional Development
2) Y – Yes, N – No
3) Holistic Evaluation:
   - CDC The applicant consistently displays competence
   - CDI The applicant demonstrated competence but not consistently
   - CNDD The applicant has not demonstrated competence but is developing
   - CND The applicant has not demonstrated competence
   - X I am unable to comment
4) Very Low in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=1**
5) Low in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=2**
6) Outcome and criterion met (Acceptable level): Results Assessment Form 9 and 12, **SCORE=3**
7) High in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=4**
8) Very high in meeting outcome and criterion: Results Assessment Form 9 and 12, **SCORE=5**
9) Weighing:
   - 1: Very low importance
   - 2: Low importance
   - 3: Medium importance
   - 4: High importance
   - 5: Very high importance
10) Degree of Responsibility:
   - A – Being exposed
   - B – Assisting
   - C – Participating
   - D – Contributing
   - E – Performing
11) With responsibility – WR degree E
12) Final result: Multiply "Score" with the "Weight". **Note that if no evidence found, the score is 0, then Final Result=0.**
13) Individual Assessment is the assessment done by a single assessor ("homework)
14) Group Assessment is done by a sub-committee at a meeting or at an interview where a consensus decision is made which is confirmed by the chairperson of the sub-committee
15) Work Relationship: Mentor; Supervisor; Employer; Colleague; Client

Revision History

Version	Date	Revised/Approved by	Nature of Revision
Rev 0: Concept A	5 March 2012		Initial attempt by PME based on R-03-PE, technologists forms incorporated
Rev 0: Concept B	5 April 2012	Revised by JIC	Technologists forms revised as recommended
Rev 0: Concept C	12 May 2012	Revised by JIC	Technologists forms revised as recommended
Rev 1.1	15 July 2013		Revised by PME based on R-03-PE Rev 1.3 Draft A
Rev 1.2	24 September 2013	Revised by JIC Task Team	Improved alignment of Flow Diagrams and Annexures with R-03-PE Rev 1.3 Draft A
Rev 1.3	14 October 2013	Revised by Dr Stidworthy, Mr Moncur and Mr Erasmus	Further alignment with R-03-PE, but deviations confirmed and included.
Rev 1.4	10 March 2014	Revised by Erasmus	Aligned with comments by JIC members moving away from technicians' model and closer to engineers' model.
Rev 1.5	24 March 2014	Revised by JIC	Remove Qualification Table, Weighting Factors and Standard Letter
Rev 1.6	7 April 2014	Revised by Dr Stidworthy	Blank weighting columns inserted and related corrections.
Rev 1.7	14 April 2014	Revised by JIC	Weights in R-03-AF-PT reinstated. Submit to TC, CRC and Council.
Rev 1.8	8 May 2014	Approved by JIC on 14 April 2014. Approved by TC on 5 May 2014. Approved by CRC on 8 May 2014.	Submit for approval to SAC (Stakeholder involvement), and Council (Provided stakeholder involvement is undertaken)
Rev 1.8	31 July 2014	Approved by Council	Not revised

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Processing of Applications for Registration as Candidate Engineering Technician and Professional Engineering Technician			
Status: Approved by Council			
Document : R-03-PN	**Rev-1.8**	**31 July 2014**	

Background: The ECSA Registration System Documents

The documents that define the Engineering Council of South Africa (ECSA) system for registration in professional categories are shown in **Figure 1** which also locates the current document.

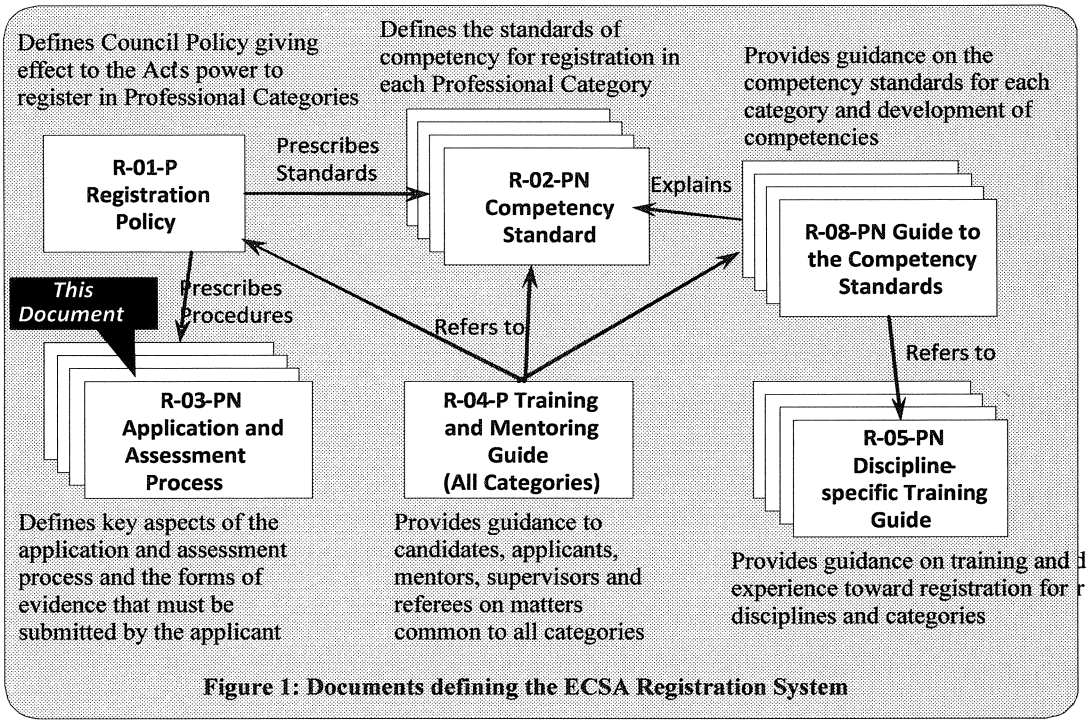

Figure 1: Documents defining the ECSA Registration System

1. Purpose of this Document

This document defines the processes used by the ECSA to receive, process and make decisions on applications for registration as a Candidate Engineering Technician and as a Professional Engineering Technician.

These processes are carried out under the authority of the Engineering Profession Act (Act No. 46 of 2000) and registration policies defined in document R-01-P. This document supports the management of the registration process and assessment of applicants against the competency standard R-02-PN. Section 3 provides a high-level definition of the registration process resulting from the implementation of the policy defined in document R-01-P.

2. Changes introduced in this document

The ECSA Registration Policy (R-01-P), Competency Standards (R-02-PN) and Education Evaluation policy (E-17-P) approved in January 2010 and March 2011 respectively, and the processes defined in this document bring about a number of changes to the registration system, greater clarity as well as improvements to the application and assessment process. The main changes are summarized in **Table 1**. In summary:

2.1 It is not the intention to change the standard required for registration but to better define it in terms of the outcomes produced and the required level rather than specifying that the training must be such as to develop competence. See **Appendix A** for a comparison between the specification of R2/1C and the Competency Standard R-02-PN.

2.2 The forms of evidence of competence have been made uniform across the disciplines and provide evidence against all the outcomes. See **Appendix B** for the role of each form of evidence in relation to individual outcomes.

2.3 The assessment process is uniform across the disciplines.

3. Process Outline

The processes defined below are designed to handle the various cases that arise on the route to registration taking into account that applicants for professional registration do not necessarily register in a candidate category and that the educational requirement may be satisfied by several mechanisms, including educational evaluation.

The registration process is divided into two main sections:

- A secure system for applying on-line, entering the necessary data and uploading documents as required; and
- The core assessment process encompassing the Extended Experience Appraisal, Committee Decision and Administrative finalization.

3.1 Common User Identification and Login

Figure 2 shows the essentials of the application system. A new user must supply basic details before being given a User ID and a password. Basic Details are: First Name(s), Surname, Date of Birth, Title, South African ID number (or Passport number and Nationality if not in possession of an SA ID), e-mail Address, Mobile Phone Number. The person must also indicate whether he or she was previously or is currently registered or has previously applied and Registration/Application Number (if known).

After determining that the person is not already in possession of a User ID, the system will issue the user with a unique User ID and sets up a password. Existing users may login at any time. The user is presented with a menu which will ultimately contain all the services available. For applicants for Candidate and Professional Engineering Technician four options are relevant:

- Apply for registration as a Candidate Engineering Technician
- Apply for registration as a Professional Engineering Technician
- Apply for Educational Evaluation
- Continue with my application

Note: The acronyms and abbreviations used in the tables and flow diagrams following are listed in the Nomenclature on page 16.

Table 1: Changes introduced by 2011 policy, standards and procedures

Aspect	Prior to this policy	Under this policy
Registration Policy	Embedded in Policy R2/1C: Acceptable Work for Candidate Engineering Technicians; does not consider other classes of applicants explicitly.	• Single, integrated policy R-01-P, defining registration and education policy, linking with standards (R-02-PN) and processes (this document), applies to all applicants.
Educational Requirements Policy	Accredited or recognized qualification or prior evaluation of qualification(s) as meeting educational requirements.	• No change to accredited or recognized qualifications. • Accelerated evaluation of listed qualifications. • Evaluation criteria defined in document E-17-P for qualifications and assessed learning.
Standard of Competency for Registration	Training requirements for Candidate Engineering Technicians, in R2/1C section 3	• Competency Standard for registration as a Professional Engineering Technician in document R-02-PN. • Eleven outcomes, with definitions for the level of problem solving and engineering activities. • Professional Attributes included in the standard • Level descriptors differentiate between categories
Seeking registration without normal qualification	The Technician Alternate route allowed experience of a defined standard and duration to be accepted in lieu of academic qualifications Development assessed on educational outcomes based claim to competency submitted by the Candidate.	• Criterion-based method of meeting education requirements by evaluation and assessment defined in E-17-P. When educational requirements are complete, apply for registration in normal way. No additional time limits. Continuation of educational competency development assessment (Interim). • Identified methods of further learning and assessment.
Evidence of Training/ Competency	For all disciplines: • Training and Experience Summary • Training and Experience Reports • Project Report • Referee Reports • Educational Development Report for Alternative Route Applicants • Initial Professional Development (IPD) Report • Discretionary interview in individual cases	Uniform requirements across disciplines: • Training and Experience Summary (TES) • Training and Experience Reports (TER) • Training and Experience Outlines (TEO)[a.] • Engineering Report[b] • Referee Reports • Pre-registration CPD-type activity – IPD • Educational Development Report for Alternative Route Applicants (Interim) • Discretionary interview in individual cases
Assessment of Competency	Done against Outcomes and Criteria applying evidence submitted mainly in the Project Report, Educational Development Report (if applicable) and IPD Report, supplemented by the Experience Reports and Referee Reports. Interviews if necessary.	• Policy (R-01-P) defines main stages and permitted decisions in the assessment process. Extended Experience Appraisal sanctioned by Council • Common assessment instruments addressing the outcomes and an integrative judgement, providing consistent trails through all stages
Decision Making	Delegation of decision to register or defer to the Registration Committee, reserve refusal to Central Registration Committee	• No change to delegation • Two deferments permitted • Credit given for outcomes fulfilled
Application	Manual, paper-based	On-line (Transitional paper-based)
Process Definition	Embedded in part in other documents	• High level process definition (this document) • Detailed IT system specification.
Training and Mentoring Guidelines		Layered set of guidelines: • Training and mentoring (all categories) (R-04-P) with defined responsibility levels. • Guide to competency standards for Professional Engineering Technicians (R-08-PN) • Discipline-specific Training Guide (R-05-PN)

Notes:

a. Defined short form of TER, with clear rules when a TEO may be substituted by an experienced applicant.

b. Replaces Major Task Report, emphasis on demonstrating the applicant's engineering ability.

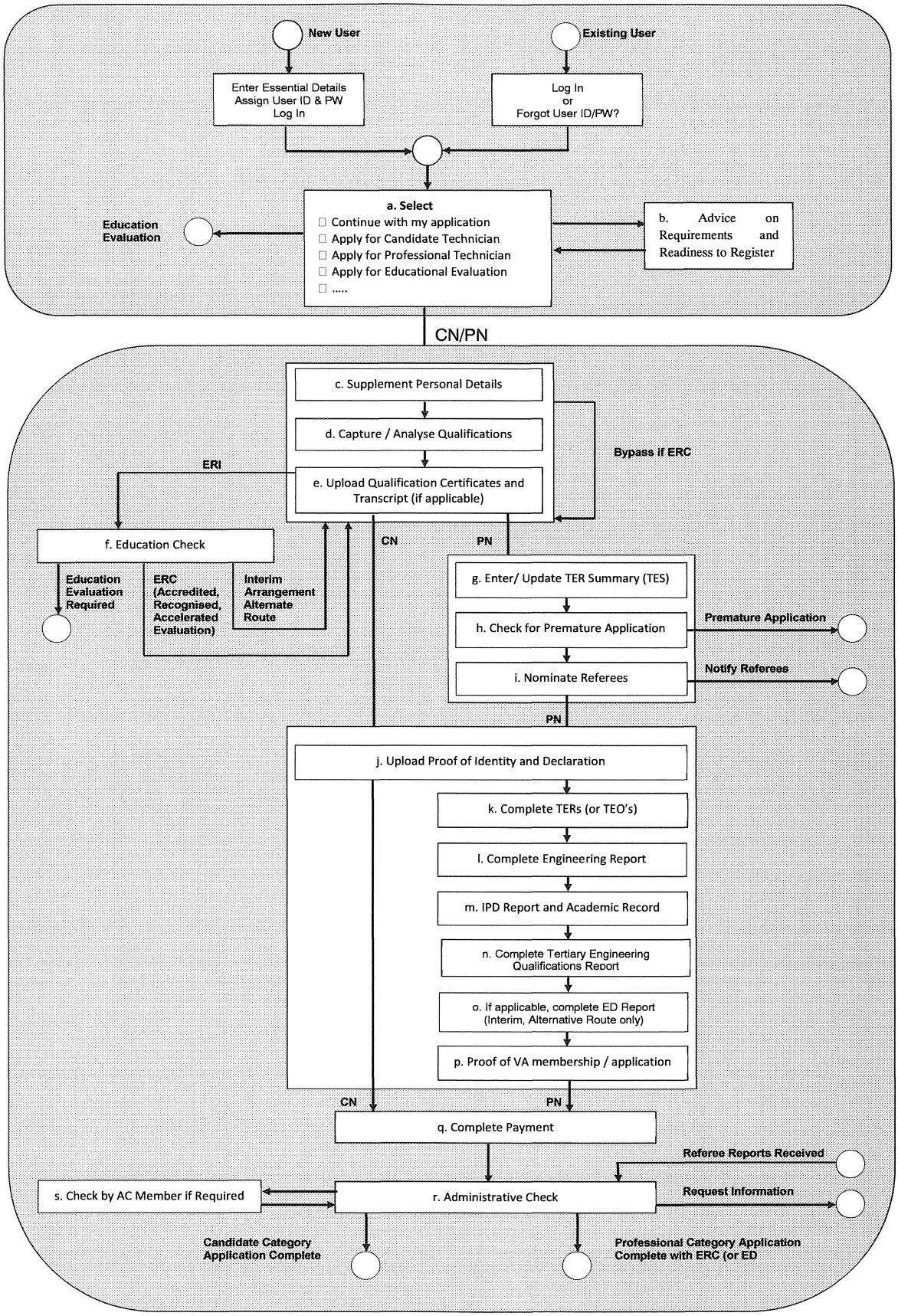

Figure 2: Common front-end and data entry for applications for Candidate Technician and Professional Technician

3.2 Data Entry System: Candidate and Professional Engineering Technician

Applications for registration require pre-conditions to be fulfilled including payment of the prescribed fee, submission of the personal information, qualification, and supporting documents, which may include documents prepared by third parties, for example referee reports which are uploaded directly by the referees. The process described in **Figure 2** ensures that the preconditions are fulfilled before the start of evaluation of the applicant's competence[1].

Applicants for Candidate Engineering Technicians (CN) and Professional Engineering Technicians (PN) are taken via the menu to the second part of **Figure 2** where the following sub-processes occur:

- Provide the rest of their required information: addresses, employment, phone numbers, demographic information, and voluntary association membership.
- Enter Qualifications with separate steps for:
  - 3.2.1 Accredited qualifications
  - 3.2.2 Dublin Accord Qualifications
  - 3.2.3 Other Qualifications

In case 3.2.1, the qualification is selected from the ECSA database. In case 3.2.2 details are captured and confidence checks are performed (Country is a signatory, is qualification listed by signatory, completion year in range of validity, etc.). A status Provisional Educational Requirements Complete (ERC) is issued, with a disclaimer that the qualifications will be checked at a later stage.

In all cases, the applicant now uploads certified copies of degree certificate(s) and academic record(s)/transcript(s)/diploma supplements. If the qualification certificate or transcript is not in English or is not printed in western characters, a certified translation must be supplied. In cases 3.2.1 and 3.2.2, the parallel qualifications check process is launched for peer verification of the qualifications. In case 3.2.3, the details of qualifications are captured and the applicant is referred to the educational evaluation process. For the interim, for applicants with known other qualifications an Educational Development report will be required and evaluated as part of the registration competency assessment process.

An applicant for Professional Engineering Technician (PN) then enters the Training and Experience Summary (TES) information on-line. A simple check on the number of weeks at different levels is used to detect premature applicants. An applicant who is warned of the premature nature of application may re-enter when further information on further experience is available. For each period shown in the TES, the applicant must supply a Training and Experience Report in the format shown in **Appendix D**.

The PN applicant then nominates Referees who are notified directly by the system. (CN Applicants are not required to nominate Referees.) The Applicant must provide full details of Referees who are not registered with ECSA.

[1] Note: An applicant re-entering the system and choosing "Continue with my application" will be taken to the next piece of missing information.

In the next phase required documents are uploaded as required for the two types of applicant:

Candidate Technician Applicant	Professional Technician Applicant	Prescribed Format
	Engineering Report	Appendix G
	Academic Record	Appendix H
	Initial Professional Development Report	Appendix I
	Educational Development Report (Interim)	Appendix X
Proof of Voluntary Association Membership or Application (Optional)		-
Proof of Identity: Original copy of RSA ID book or Passport, certified by Commissioner of Oaths		-
Declaration, signed by applicant in presence of Commissioner of Oaths		-

Payment is completed online or electronic fund transfer (EFT) or by direct deposit. In the last two cases proof of payment must be uploaded.

The referees complete their reports and upload the reports using their logins.

The application, including the referee reports, is checked by a registration officer. Incomplete information must be supplied by the applicant via the Continue My Application option. When the application is judged complete, and the Education Check has returned an ERC and the referee reports have been completed, the application is marked as complete. The application is progressed to the next stage.

Note: **Figure 2 and 3** do not show the mechanisms for detecting when the completion of a step is incomplete and the notifications that are sent.

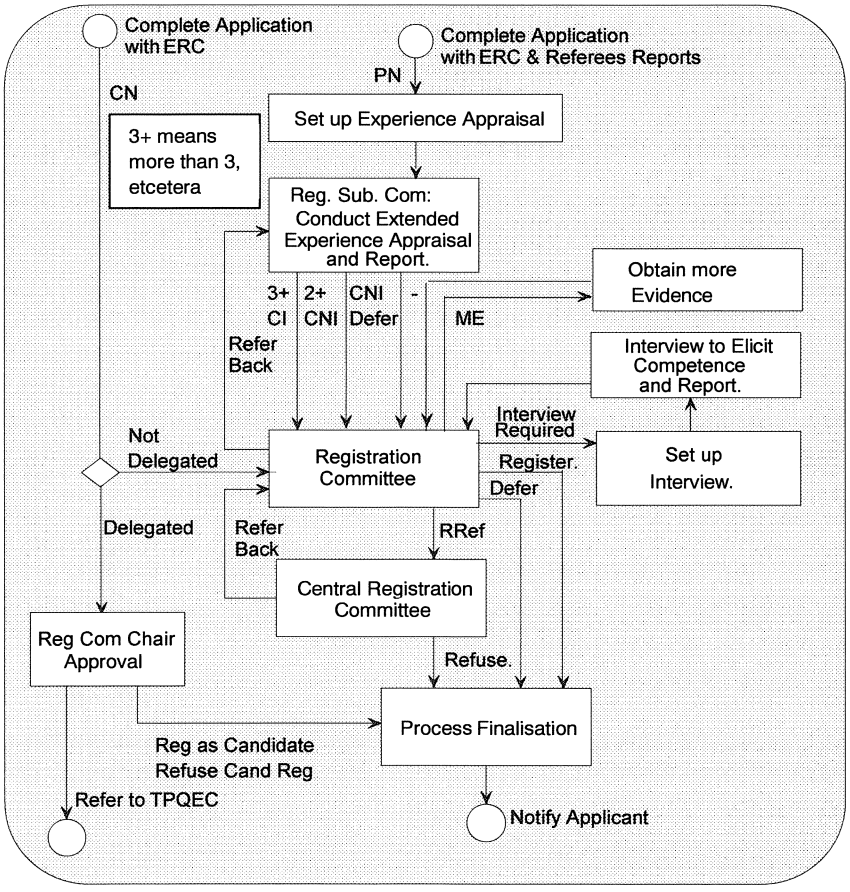

Figure 3: Assessment process for applications for Candidate and Professional Engineering Technicians

3.3 Core Process for Candidate and Professional Engineering Technician

The process in **Figure 3** gives effect to section 6 of the registration policy R-01-P in the case of Candidate and Professional Engineering Technicians. The Professional Engineering Technician Category has permission of Council to use the Extended Experience Appraisal method for assessing Applicants for registration. The process in **Figure 3** gives effect to section 6.12, 6.17 and 6.18 of the registration policy R-01-P.

3.3.1 Professional Engineering Technician Applicants

Once an application for professional registration is complete with education requirements fulfilled as determined in **Figure 2**, the evaluators for the Extended Experience Appraisal are selected and the appraisal starts. The evaluators perform individual evaluations on-line using the assessment form in **Appendix J**. The team leader of the sub-committee formulates a consensus recommendation for submission to the Registration Committee marking up his/her own **Appendix J** assessment form accordingly. In cases of Refusal, Interview, Deferral or More Evidence, the team leader also prepares a draft letter to the applicant reflecting the consensus assessment results. A template letter is used for this purpose to facilitate uniformity.

3.3.2 Professional Engineering Technician Applicants – Alternative Route

An interim arrangement for applicants not meeting the educational requirements will be applicable until ECSA examinations can be offered. An educational development experience appraisal will be done based on evidence submitted by the applicant in an Educational Development Report in the format shown in **Appendix X**.

The process flow is in accordance with the policy of R-01-P section 6 and contains the following main elements:

Experience Appraisal: is an assessment of the applicant's competence using the submitted documentation to determine whether the evidence submitted is *indicative* of competence against the standard

- If competence is indicated, proceed from Sub-committee to Registration Committee. This step is signed off by the chair of the Registration Committee.
- If competence is not indicated, refer to Registration Committee.

If the experience appraisal is not indicative of competency, the Registration Committee reviews the Sub-committee's recommendation and must adopt one of the following measures:

- If competence is not indicated with the information at hand, and it is felt that the applicant could remedy the deficiency / deficiencies by providing specific further information, select the recommendation to request more evidence (ME). Once the additional evidence is received, return to step 1 and/or:
- If competence is not indicated but further assessment is warranted, determine that an interview (I) is required. The team leader of the interview sub-committee prepares a report by marking up the consensus results from the original assessment on the assessment form **(Appendix J)**. The report is considered by the Registration Committee and the recommendation is either accepted or amended.
- Defer the application for up to 12 months to give the applicant the opportunity to gain experience to fulfill outstanding competency requirements subject to a maximum of two deferments. This step is signed off by the chair of the Registration Committee.

- If refusal is recommended. The recommendations are considered by both the Technicians Registration Committee and the Central Registration Committee.

Table 2: Forms and Documents

Ref	Appen	Components of Application	For Registration As	
			Candidate Engineering Technician	Professional Engineering Technician
		On-line application form	X	X
		Declaration signed by applicant and Commissioner of Oaths	X	X
		Proof of Identity (SA ID book or Passport)	X	X
TES	C	Summary of Training and Experience Reports		X
TER	D	Training and Experience Reports (Generally more than one) Individual Reports to be signed by supervisor. Training and Experience Outlines may be used where permitted. (Evidence of responsibility)		X
TEO	E	Training and Experience Outline for applicants with at least ten years of experience after ERC		X
ER	G	Engineering Report. (Evidence of competency).		X
AR	H	Academic Record/transcript (List of Subjects and Grades)		X
IPD	I	Record of IPD (Pre-registration CPD)		X
EDR	X	Interim Educational Development Report until ECSA examinations can be conducted for Alternate Route applicants only (Voluntary – evidence of development)		X
		Proof of Voluntary Association membership (Optional) (Copy of certificate or letter)	X	X
		Qualification Certificates (if not already submitted)	X	X
REF	F	Referee report, signed by referees (Three or more)		X

4. Evidence and Assessment for Registration as a Candidate Engineering Technician or Professional Engineering Technician

4.1 General Requirement

The assessment system for applicants for registration as Professional Engineering Technicians must implement the requirement laid down in the competency standard R-02-PN section 2.1:

> *Competence must be demonstrated within **well-defined** engineering activities, by integrated performance of the outcomes at the level defined for each outcome. Required contexts and functions may be specified in the applicable Discipline Specific Training Guides.* (See Tables A1 and A2, Appendix A)

The evidence used to demonstrate competency must therefore address the defined outcomes in the competency standard.

4.2 Information and Evidence of Competency to be provided

Table 2 lists the information and forms of evidence that the applicant for registration as a Candidate Engineering Technician or Professional Engineering Technician must provide.

4.3 Training and Experience Summary (TES, Appendix C)

The Training and Experience Summary (TES) is a factual record of distinct phases of training and work experience during the applicant's career up to the time of application. The TES must identify each phase of training and experience and the level of responsibility.

Periods during which the applicant is not engaged in activity that contributes to professional development must also be indicated, together with the reasons for inactivity.

A phase of training and experience corresponds to a period in which particular high level training objectives are to be fulfilled or a major task or project is completed. A phase typically ends when new training objectives are set, the type of work changes, the expected level of achievement changes, employment is terminated or engineering work is interrupted. See Table 4 for a list of events that demarcate a period of training and experience.

The nature of work and degrees of responsibility defined in document R-04-P *(Progression throughout the candidacy period)* are used here (and in the Training and Experience Reports):

Table 3: Nature of Engineering Work and Degrees of Responsibility

A: Being Exposed	B: Assisting	C: Participating	D: Contributing	E: Performing
Undergoes induction, observes processes, work of competent practitioners.	Performs specific processes, under close supervision.	Performs specific processes as directed with limited supervision.	Performs specific work with detailed approval of work outputs.	Works in team without supervision, recommends work outputs, responsible but not accountable
Responsible to supervisor	Limited responsibility for work output	Full responsibility for supervised work	Full responsibility to supervisor for immediate quality of work	Level of responsibility to supervisor is appropriate to a registered person, supervisor is accountable for applicant's decisions

Degree of responsibility E means performing at the level required for registration. This corresponds to the range statement in outcome 10 in the Competency Standard R-02-PN which requires that the applicant display the level of responsibility "for the outcomes of significant parts of one or more well-defined engineering activities". The applicant may however not assume accountability for the work.

4.4 Training and Experience Reports

The Purpose of the Training and Experience Report (TER) is to provide a factual record of the main periods in the applicant's development from graduation to applying for registration and to identify the periods where the applicant took responsibility at the required level.

Two templates are available for reporting on the applicant's training and experience and their use depends on the length and nature of that training and experience.

4.4.1 In general, an applicant must complete and submit a Training and Experience Report (TER) for each phase of training and work experience from the time of meeting the education requirements (ERC) to application for registration. TER(s) with total duration covering at least one year working at the degree of engineering responsibility E (Performing) must be submitted. Such periods need not be contiguous and need not include the last period reported.

4.4.2 The requirement in 4.4.1 may be relaxed in the case of an applicant who has at least ten years training and experience after completing the educational requirement and reports a total duration of at least three years at degree of engineering responsibility E (Performing) in detail in the TER format that are signed by the supervisor. Such periods

need not be contiguous and need not include the last period reported. Such an applicant may submit Training and Experience Outlines (TEO) for the remaining periods or groups of related periods.

4.4.3 An applicant who completes the education requirement by assessment under section 3.4(iv) of document R-01-P must submit TERs for at least three years, including reports for a total duration of one year at responsibility E. Such periods need not be contiguous and need not include the last period reported. Periods of experience may predate completing the education requirement. TEOs may be submitted for other periods. In addition to the information on experiential requirements an applicant must, in the interim period until ECSA examinations can be written, provide evidence of educational development by completion of the Educational Development Report **(Appendix X)**

Any applicant whose training an experience history is shorter than three years, and has less than one year working at a degree of responsibility E (Performing) will be notified that the application is premature and invited to submit further TES entries and TERs as they become available.

Note: Where the person is registered as a candidate engineering technician with ECSA, the TES can and should be updated online and the corresponding TER uploaded by the candidate as each phase of training or work is completed. This may be done without initiating an application.

The information to be provided in the TER and TEO format is defined in **Table 4**.

Table 4: Information to be provided in Training and Experience Reports and Outlines

Aspect	Training and Experience Report (TER)	Training and Experience Outline (TEO)
Supervisor's signature	Required (indicates agreement with level of responsibility A-E inserted)	Required (indicates agreement with level of responsibility A-E inserted)
A period ends when:	• the work environment has changed, e.g. when a major training phase, task or ends; • the type of work has changed; • the responsibilities or level of function have changed (for instance, as in a promotion); • change of employer; • training or employment is interrupted (for instance by study, unemployment or prolonged illness).	• The level of responsibility changes from level B to C • the level of responsibility changes from level D to E • a promotion takes place • change of employment • training or employment is interrupted • nature of work changes significantly
Position in Organisation	• Supply an organogram, showing the names, position and registration (if any) and qualification (if not registered) of supervisor(s), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Always show the supervisor.	• Simplified organogram: Identify yourself, your supervisor and state the number and level of persons supervised
Reporting Format	• Write in the first person. Construct proper paragraphs dealing with key aspects from the list below	• Use bulleted format covering the items below

Topics to be covered: elements marked * are mandatory, others as applicable	• Nature of training or experience*	• Nature of the training or work phase or related phases*
	• Discipline of Engineering and Discipline Specific Fields*	• Discipline of Engineering and Discipline Specific Fields*
	• Nature of problem(s) addressed, method of analysis, solution development and evaluation*	• Nature of problem(s) addressed, method of analysis, solution development and evaluation*
		• Management responsibilities
	• Interaction with clients, stakeholders and other disciplines	• Interaction with clients, stakeholders and other disciplines
	• The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)*	• The applicant's contribution to the task* • Nature of the applicant's responsibility (in addition to level A-E)*
Length limit	280 words/TER, 3360 total for all TERs	11 bullet points per TEO

4.5 Engineering Report (See Appendix G)

Each applicant must submit an Engineering Report covering aspects of work at the Perform responsibility level E that demonstrates that the applicant has fulfilled the required outcomes.

While the report may be based on a major task, series of tasks or a project, it is a report in which the applicant reflects on his or her engineering activity that demonstrates the required level of competence.

The work drawn on for the report does not have to be project based. In an operational engineering work environment, problem solving and engineering management may provide evidence of performance against the required outcomes.

The report must be based on problem solving and activities at a ***well-defined*** level, applying technician level educational theory. Calculations at this level, done by the applicant, must be attached to the report.

The report should be reflective rather than purely narrative, covering:

- The engineering and contextual knowledge and understanding, both from the applicant's education and acquired subsequently, required for effective performance of the work;
- The theoretical and practical methods used to analyse and solve engineering problems encountered in the work.
- The planning, organising, leading and controlling of human and other resources required to achieve the goals of the engineering work.
- Handling of legislatory considerations, impacts of the work that were not necessarily covered by regulation and ethical issues, recognition of obligations to society, the profession and the environment.
- Risks and uncertainty associated with the work and its product.
- The recommendations, judgement calls and decisions that the applicant had to make, where the applicant's leadership skills were exercised.
- The nature of the responsibility carried by the author and identification of the persons to whom the author was responsible.

The report must be written in the first person (except when describing the actions of another person or agency), in a proper structure, style and English language. A template for the heading of the report is provided. The report body, including headings and subheadings,

must be in the range 2300 to 3000 words (100 words per criterion). The total file size is limited to 1 Mbyte. Diagrams, tables and pictures appropriate to the purpose defined above, not exceeding two A4 pages in total may be included (in addition to the word count). The report is a test of written communication ability both from a structure, style and language point of view as well as logical development.

4.6 Referee Report (See Appendix F)

The purpose of the Referee Report is to draw on observations of the applicant's performance in work conditions to obtain information on the applicant's competency. The referees are asked to identify periods in the applicant's career as itemised in the TES where the referee feels able to comment on the attributes of the applicant. In relation to these periods, the referee is asked to:

- To rate the applicant's problem analysis and solution synthesis abilities in relation to the desired level (well-defined engineering problems);
- To rate the applicant's knowledge of engineering principles and of the wider context of the engineering work;
- To comment on the applicant's engineering management ability, that is the ability to ensure the achievement of engineering results through management methods;
- To rate the applicant's communication ability;
- To comment on the applicant's abilities to handle the regulatory, economic, social and environmental issues arising from engineering activity at a well-defined level;
- To comment on the applicant's understanding of ethics and ethical behavior in relation to his engineering work;
- To rate the applicant's judgement in decision making and acceptance of responsibility for engineering work at a well-defined level;
- The applicant's willingness and capacity to accept responsibility for engineering work at a well-defined level;
- To comment on the applicant's commitment and attention to competency and career development.

4.7 Academic Record and IPD Reports (Appendices H and I respectively)

The Academic Record (AR) and Initial Professional Development (IPD) Report is a factual record that serves as evidence of proficiency development from academic base through CPD-type activities of Category 1 and other formal learning activities prior to registration, including in-house training. Reported activities do not require Continuing Professional Development (CPD) validation. **Appendix I** specifies the information required on each activity.

5. Process for Educational Evaluation

The blocks Capture and Analyse Qualifications and Education Check in **Figure 1** are expanded in more detail in **Figure 4**.

The education evaluation process is shown in **Figure 5**. This is a stand-alone process that may be entered from the menu in **Figure 1**. It requires documents to be uploaded and the evaluation fee to be paid.

The following documents must be uploaded by the applicant:

5.1 A curriculum analysis using the worksheet provided. This is an Excel worksheet where the applicant would enter data and upload a PDF version of the file.

5.2 Syllabi of the subjects studied. This would be scanned copies of relevant pages of the university handbook/rulebook or course descriptions as issued to the student.

5.3 Project report(s). These would be scanned copies.

5.4 Declaration and Proof of Identity.

The applicant must upload one set of items 1 to 3 for every qualification completed.

The applicant should be able to add documents relating to completion of learning of lesser extent than a full qualification. This would arise if an applicant completes further learning. This information is of the form:

5.5 Certification of completion of course/module and result achieved

5.6 Description of module including hours, breakdown of activity, syllabus, form of assessment

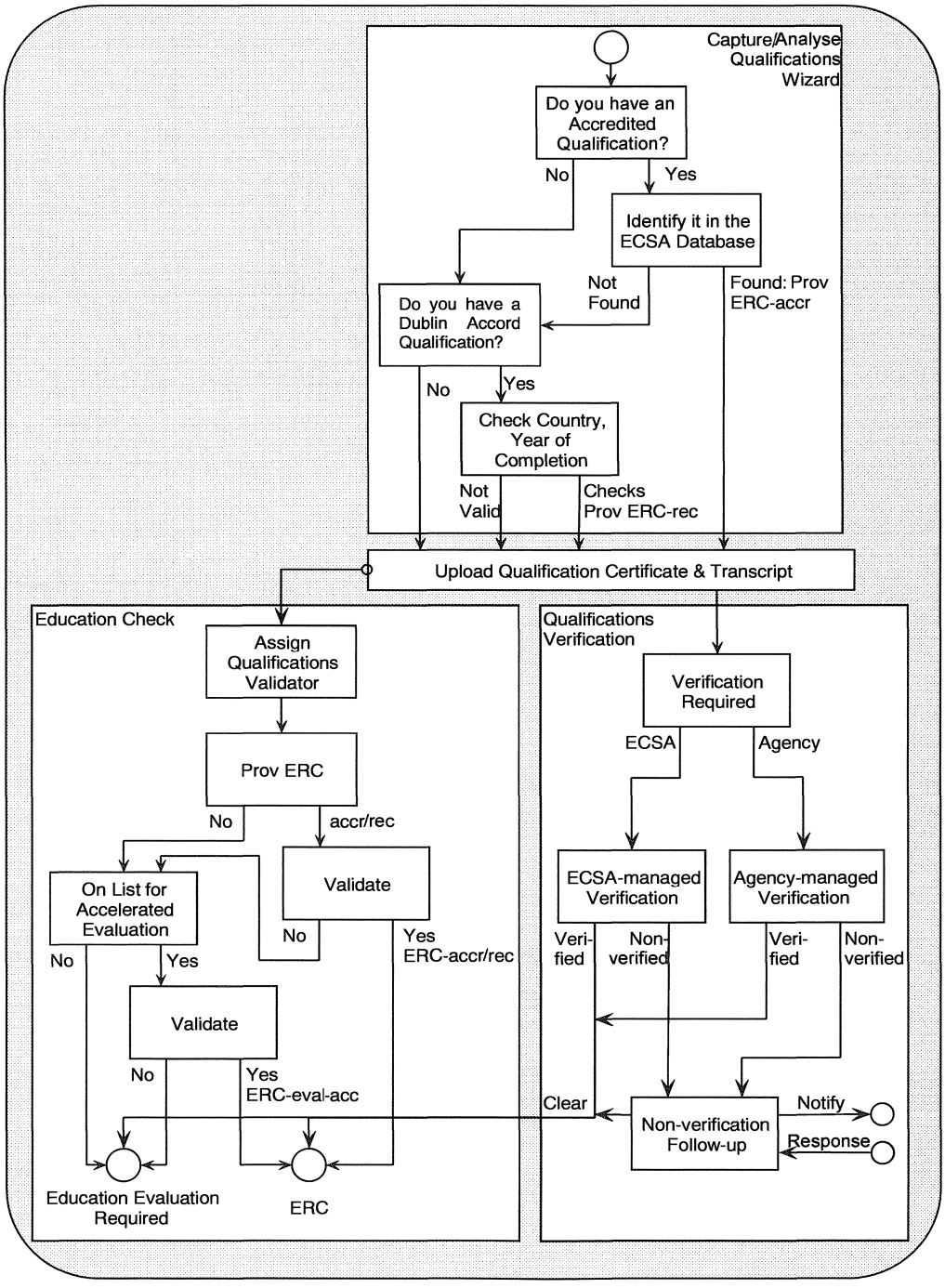

Figure 4: Detail of Capture/Analyse Qualification and Education Check in Figure 1

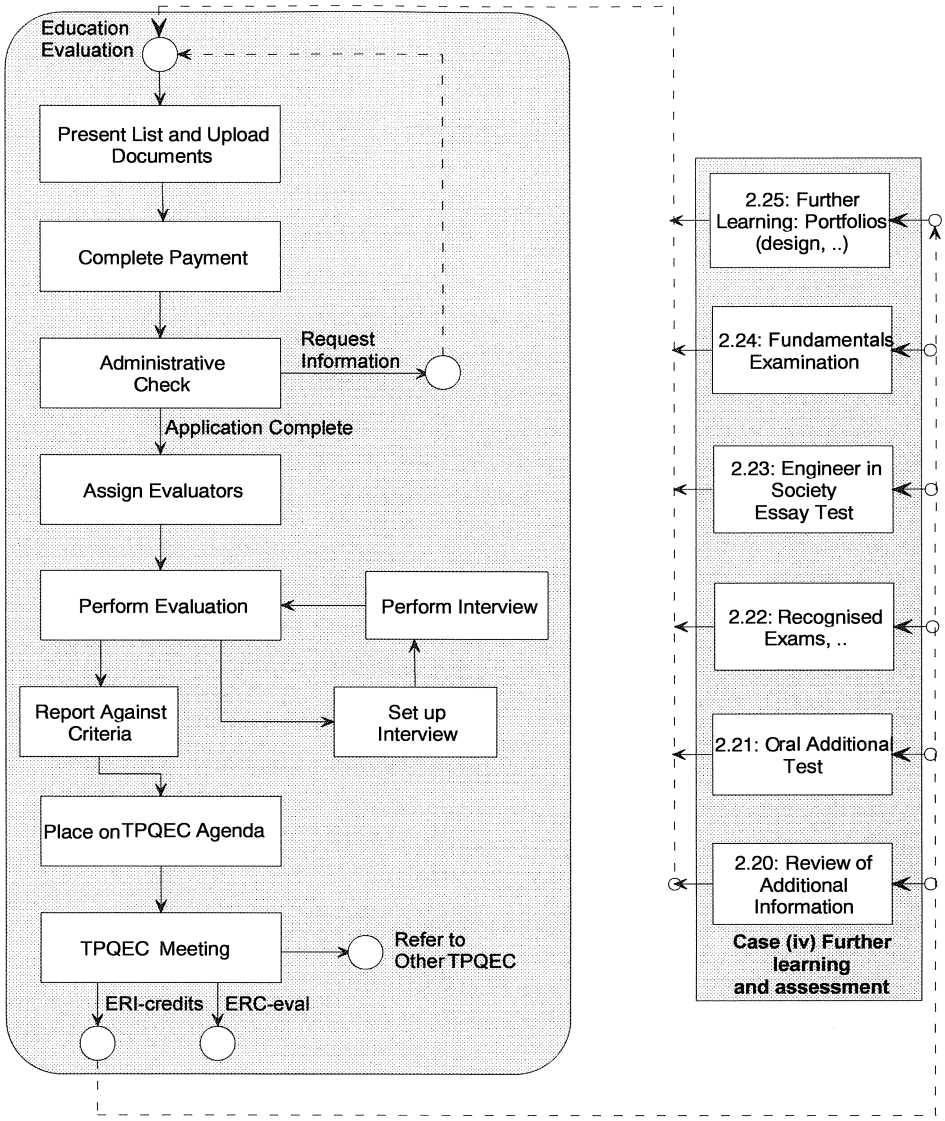

Figure 5: Education Evaluation process. The Further learning and assessment elements are shown for completeness: they do not form part of the Educational Evaluation process.

Appendix A: What Changes with the Introduction of Competency Standards?

Prior to the introduction of the competency standards, the requirements were expressed in terms of criteria for acceptable training in ECSA's policy document R2/1C. The requirements defined in section 5 of R2/1C are summarised in the first column of the following table. The outcomes embedded in the training requirements are extracted in column 2. The formal outcomes in R-02-PN are stated in column 3 while the level descriptor is in column 4. Table A1 relates to the Group A outcomes while table A2 relates to outcomes in Groups B, C and D.

Table A1: Transition from input-based training specifications to output-based competency specifications in Group A

<table>
<tr><th>1: R2/1C Essential Elements of Acceptable Practical Training</th><th>2: Outcomes Embedded in Training Elements in Column 1</th><th>3: Corresponding Competency Standard Outcome</th><th>4: Level descriptors for column 3</th></tr>
<tr><td colspan="2">Acceptable practical training must provide satisfactory experience to Candidates in the implementation of novel engineering technology in an innovative manner and must include the practical training elements as stated in clause 3.1 at the level of responsible competence stated. Outcomes expressed in criteria to be met, judged by peer evaluators.</td><td colspan="2">Requirement (R-02-PN Section 2.1):
Competence must be demonstrated within well-defined engineering activities, defined below, by integrated performance of the outcomes defined below at the level defined for each outcome.
Note: Attributes of a professional person defined in outcomes</td></tr>
<tr><td>Problem Investigation
Not covered by R2/1C</td><td>Not covered by R2/1C</td><td>Group A: Engineering Problem Solving
*1:- Define, investigate and analyse well-defined engineering problems.

3:- Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices.</td><td rowspan="2">Well-defined engineering problems have the following characteristics:
(a) can be solved mainly by practical engineering knowledge underpinned by related theory;
and one or more of:
(b) are largely defined but may require clarification;
(c) are discreet, focused tasks within engineering systems;
(d) are routine, frequently encountered, may be unfamiliar but in familiar context;
and one or more of:
(e) can be solved in standardized or prescribed ways;
(f) are encompassed by standards, codes and documented procedures; requires authorization to work outside limits;
(g) information is concrete and largely complete, but requires checking and possible supplementation;
(h) involve several issues but with few of these imposing conflicting constraints and a limited range of and interested and affected parties;
and one or both of:
(i) requires practical judgement in practice area in evaluating solutions, considering interfaces to other role-players;
(j) have consequences which are locally important but not far reaching (wider impacts are dealt with by others).</td></tr>
<tr><td>Problem Solution

3.3 (a) Application of known and novel technology. A variety of activities or functions to carry out engineering works within a specific discipline, sub-discipline or combination of disciplines of engineering and may include specialization.
(b) There are a variety of activities or functions, which candidate engineering technicians may carry out in the execution of engineering work. These include:
(i) Design and draughting, specifying, planning
3.4 (c) Problem solving requiring the use of fundamental principles, underlying techniques and calculations based on formulas</td><td>The applicant must demonstrate the ability to:
Develop the suggested solution to the problem through a process of synthesis and design;
(a) apply all information acquired during planning,
(b) communicate by but not limited to drawing up of known plans, detailed designs, reports, specifications,
(c) adjudicate tenders
(d) take into account all practical, economic, social, environmental, quality assurance, safety and statutory factors.</td><td>2:- Design or develop solutions to well-defined engineering problems.</td></tr>
</table>

Table A2: Transition ... in Groups B, C, D and E

Execution / Implementation 3.3 b) ii) Manufacturing, construction, installation, calibration, commissioning, operating, monitoring iii) Maintenance, modification, development iv) Operational management, economics and resource management 3.3 c) Social, economic, safety, health and environmental issues within engineering practice 3.4 g) Compliance with legislation	The applicant must demonstrate the ability to: a) Execute engineering tasks b) Make efficient use of people, materials, machines, equipment, funding c) Handle interactions d) Achieve end results within set parameters	**Group B: Managing Engineering Activities** **4:-** Manage part or all of one or more *well-defined engineering activities* **5:-** Communicate clearly with others in the course of his or her engineering activities **Group C: Impacts of Engineering Activity** **6:-** Recognise the reasonably foreseeable social, cultural and environmental effects of *well-defined* engineering activities. **7:-** Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her *well-defined* engineering activities.	*Well-defined Engineering Activities (WDEA):* are characterised by several or all of: a) *Scope* of practice area is defined by techniques applied; change by adopting new techniques into current practice; b) Practice area is located within a wider, complex *context*, with well-defined working relationships with other parties and disciplines; c) Work involves familiar, defined range of *resources* (including people, money, equipment, materials, technologies); d) Require resolution of *interactions* manifested between specific technical factors with limited impact on wider issues; e) Are *constrained* by operational context, defined work package, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws; f) Have *risks* and *consequences* that are locally important but are not generally far reaching.
Level of Responsibility 3.3 e) Independent work, teamwork supervision and management. f) Increasing responsibility and accountability for work 3.4 h) Compliance with the Code of Professional Conduct 3.3 Training must be developmental, building upon the knowledge and skill gained through the educational qualification. This is indicated through innovation in the application of technology, acquisition of knowledge through research, additional studies and continuing professional development, and increasing scope of work.	The applicant must demonstrate the ability to: a) Accept professional responsibility for taking engineering decisions. b) Ensure that sufficient cognisance is taken of economic considerations, social circumstances, environmental factors, quality assurance, safety and legal aspects c) Follow the code of professional conduct	**Group D: Exercise judgement, responsibility and act ethically** **8:-**Conduct engineering activities ethically **9:-**Exercise sound judgement in the course of *well-defined engineering activities.* **10:-** Be responsible for making decisions on part or all of *well-defined* engineering activities. **Group E: Manage Own Development** **11:-** Undertake professional development activities sufficient to maintain and extend his or her competence. *No direct counterpart in R2/1C work requirements	

Nomenclature Figures 1, 2, 3, 4 and 5:

AR	Academic Record
CI	Competency Indicated
CN	Candidate Engineering Technician
CNI	Competency Not Indicated
ED	Educational Development
ERC	Educational Requirements Complete
ERI	Educational Requirements Incomplete
ID	On-line user identification
IPD	Initial Professional Development
ME	More Evidence
P	Applicable to all professional categories
PN	Professional Engineering Technician
PW	On-line pass word
R	Registration
REF	Referee Report
RRef	Registration Refused
TEO	Training and Experience Outline
TER	Training and Experience Report
TES	Training and Experience Summary
TPQEC	Technology Programme Qualifications and Examinations Committee
VA	Voluntary Association

Appendix B: Sources of Evidence against Outcomes

Notes: 1. *Well-defined* is the level identifier defined for the Professional Technician category in document R-02-PN.

1. Engineering Report claims are verified by the applicant's supervisor.

No	Outcome	Training and Experience Reports	Engineering Report Incl claim to competency	Referee Reports (3)	IPD Report		Discretionary Interview	
A1	Define, investigate and analyse *well-defined engineering problems*	Factual/ Verified	Factual/ Verified	Evaluative		**Information to the left is considered in the Experience Appraisal**	Evaluative/ Verified	**All information is used by Interview Panel when making their recommendation to the Registration Committee**
A2	Design or develop solutions to *well-defined engineering problems*	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
A3	Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices	Factual/ Verified	Factual/ Verified	Evaluative	Factual: Knowledge Enhancement		Evaluative/ Verified	
B4	Manage part or all of one or more *well-defined* engineering activities	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
B5	Communicate clearly with others in the course of his or her engineering activities	Tests Concise Writing.	Factual/ Verified	Evaluative			Evaluative/ Verified	
C6	Recognise and address the reasonably foreseeable … impacts of *well-defined* engineering activities.	May not be covered	Factual/ Verified	Evaluative			Evaluative/ Verified	
C7	Meet all legal and regulatory requirements and protect the health and safety of persons in the course of well-*defined* engineering activities.	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
D8	Conduct engineering activities ethically.	May not be covered	Factual/ Verified	Evaluative			Evaluative/ Verified	
D9	Exercise sound judgement in the course of *well-defined engineering activities.*	May not be covered	Factual/ Verified	Evaluative			Evaluative/ Verified	
D10	Be responsible for making decisions on part or all of *well-defined engineering activities.*	Factual/ Verified	Factual/ Verified	Evaluative			Evaluative/ Verified	
E11	Undertake professional development activities sufficient to maintain and extend his or her competence.		Factual/ Verified	Evaluative/ Verified (Commitment)	Factual		Evaluative/ Verified (Commitment)	

Appendix C:

This information will be held in an on-line form containing the elements shown. Links will be provided to Training and Experience Reports.

Engineering Council of South-Africa

Training and Experience Summary **Form R-03-TES-PN** (2014-02-17)

Surname and Initials:

First complete a Training and Experience Report Form R-03-TER-PN, or a Training and Experience Outline Form R-03-TEO-PN for each period.

No	From	To	Weeks	Work Details		Respon-sibility A-E	TER or TEO
1				Employed by:	Post held:		Link TER1 or TEO1
				Type of Work:			
2				Employed by:	Post held:		Link TER2 or TEO2
				Type of Work:			
3				Employed by:	Post held:		Link TER3 or TEO3
				Type of Work:			
4				Employed by:	Post held:		Link TER4 or TEO4
				Type of Work:			
5				Employed by:	Post held:		Link TER5 or TEO5
				Type of Work:			
6				Employed by:	Post held:		Link TER6 or TEO6
				Type of Work:			
7				Employed by:	Post held:		Link TER7 or TEO7
				Type of Work:			
8				Employed by:	Post held:		Link TER8 or TEO8
				Type of Work:			
9				Employed by:	Post held:		Link TER9 or TEO9
				Type of Work:			
n				Employed by:	Post held:		Link TERn or TEOn
				Type of Work:			

When an applicant is not engaged in training and experience towards registration, the period must be reflected as follows:

x				Employed by: ***Not active***	Post held:		Link TERx or TEOx
				Type of Work: ***Insert reason here***			
Total years, months:							

Signature of Applicant: _____ **Date:** _____

Appendix D:

Engineering Council of South Africa

Training and Experience Report **Form R-03-TER-PN** (2014-02-17)

As part of the Application for Registration as Professional Engineering Technician

Applicant's Name				**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position held:**		
Employer's Name and Address for this period: (This is the employer and site at which the work took place, e.g. the site the applicant has been seconded to).				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
				If yes, provide number of CU:	**No:**	
Supervisor's Name and Address: **ECSA Registration No. (If not registered, qualify):**				**Supervisor's Signature:** **Date:**		
Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)						
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc.)						

Organogram showing supervisor (person signing this report), co-workers and those you supervised (if any). Show two levels above and below, if these exist. Give names, positions, qualification and registration (if any)*. Please do not colour in blocks.

Report: (Write in proper paragraphs in the first person singular in less than 280 words)

Nature of training or experience (stated in 20-30 words)*

Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in 120- 150 words)*

Interaction with clients, stakeholders and other disciplines (stated in 40-50 words)

Describe role and responsibility (in 40-50 words)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Appendix E:

Engineering Council of South Africa

Training and Experience Outline **Form R-03-TEO-PN** (2014-02-17)

As part of the Application for Registration as Professional Engineering Technician

Applicant's Name				**Applicant's Signature**	**Date:**	
Period No:	**Start date:**	**End date:**	**No of weeks:**	**Position(s) held:**		
Employer's and Supervisor Name and Address:				**Did you train under a Commitment and Undertaking (CU)?**	**Yes** **No**	
ECSA Registration No. (If not registered, qualify):				**If yes, provide number of CU:**	**No:**	

Discipline of Engineering: (Aeronautical, Agricultural, Chemical, Civil, Electrical, Industrial, Mechanical, Metallurgical, Mining)	
Discipline Specific Field: (e.g. Power Transmission, Electronic Communication, Transportation, Structures, Automotive, Roads, etc)	

Organogram identifying yourself, your supervisor and persons supervised. Please do not colour in blocks*.

***Outline* Report: (Use bulleted form, using 8-11 bullets)**

Nature of training or experience in the period(s) stated in bulleted format*

Nature of problem(s) addressed in this period; method of analysis, developing solution and evaluation (stated in bulleted format)*

Management responsibilities (stated in bulleted format)

Interaction with clients, stakeholders and other disciplines (stated in bulleted format)*

Describe role and responsibility (stated in bulleted format)*	Degree of responsibility:	Tick one only*
	A. Being exposed, under full supervision	
	B. Assisting, responsibility limited	
	C. Participating, supervision limited	
	D. Contributing, performs work, detailed approval	
	E. Performing, limited guidance	

*Mandatory fields

Appendix F:

Engineering Council of South Africa **Referee Report on an Application for Registration as Professional Engineering Technician**						**Form R-03-REF-PN** (2014-02-17)
Applicant's Name						
Referee Name:		**ECSA Registration Category (e.g. PrTechniEng):**		**Registration Number:**		
Referee Employer:		**Referee Cell Phone No:**				
		Referee E-mail address:				
My personal knowledge of the applicant's achievements extends:		**From:**		**To:**		
My personal relationship with the applicant is: **(Mark one block)**		**Unrelated**		**By birth**		**By marriage**
My professional relationship with the applicant is, for the period shown: (Mark one block)		**Mentor**	**Supervisor**	**Employer**	**Colleague**	**Client**

Evaluation of the Applicant's Competence or state of Development

The level of competency required for registration as a Professional Engineering Technician is defined in the Competency Standards, document R-02-PN. Competency is defined in terms of eleven outcomes and two level definitions, namely *well-defined engineering problems* and *well-defined engineering activities*. The applicant is expected to have demonstrated performance at a degree of responsibility appropriate to a Professional Engineering Technician (E) for at least one year.

As a referee, you are requested to rate the applicant against the outcomes as well as make a holistic evaluation.
Please use the following scale:

CDC: The applicant consistently demonstrates competence
CDI: The applicant demonstrated competence but not consistently
CNDD: The applicant has not demonstrated competence but is developing
CND: The applicant has not demonstrated competence
X: I am unable to comment

Please enter your comments in the third column, giving your reasons for assigning the particular rating. When a rating CDI, CNDD, or CND is given, please clearly state the reason(s) for assigning this rating

Outcomes	Rating	Reason
Group A: Engineering Problem Solving		
1. Define, investigate and analyse well-defined engineering problems		
2. Design or develop solutions to well defined engineering problems		
3. Comprehend and apply the knowledge embodied in established engineering practices and knowledge specific to the jurisdiction in which he/she practices		
Group B: Management of Engineering Activities		
4, Manage part or all of one or more well-defined engineering activities		
5. Communicate clearly with others in the course of his or her engineering activities		
Group C: Impacts of Engineering Activity		
6. Recognise the reasonable foreseeable social, cultural and environmental effects of well-defined engineering activities		
7. Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her well-defined engineering activities		

8. Conduct engineering activities ethically		
Group D: Exercise judgement, take responsibility		
9. Exercise sound judgement in the course of well-defined engineering activities		
10. Be responsible for making decisions on part or all of well-defined engineering activities		
Group E: IPD		
11. Undertake professional development activities sufficient to maintain and extend his or her competence		

Optional: Further comments or additional information on the Applicant:

Viewed Holistically:		
The applicant has demonstrated competence to be registered as a **Professional Engineering Technician**		

Declaration by Referee: I declare that the information provided is correct to the best of my knowledge. I hereby confirm that I am conversant with the Council's requirements for registration as set out in the Competency Standards, document R-02-PN as well as the instructions on this referee report, and that I am prepared to substantiate my view expressed herein at an interview, should the Council require me to do so. I also confirm that I submit this information to ECSA on the understanding that it will be treated as confidential. I understand that the information will not be disclosed by ECSA unless required by law.

Name of Referee: **Title of Position held:**

Signature of Referee: _____ **Date:**

Please post to:

⇨ **The Chief Executive Officer ● Engineering Council of South Africa**
Private Bag X691 ● BRUMA ● 2026

Appendix G:

Engineering Council of South Africa **Form R-03-ER-PN** (2014-02-17)

Engineering Report

Use this form to report in about 100 words per criterion under Outcomes 1 to 11 below on a recent engineering task, part of a project or complete project to which you have made a significant contribution. The report may cover conceptualization, design and analysis, specification, tendering and adjudication, manufacturing, project and construction management, commissioning, maintenance, measurement and testing or planning at a well-defined level. Please also provide a sample relevant calculations and drawings as an addendum which is limited to two A4 pages.

Use Appendix A of the Discipline Specific Training Guide R-05-PN to assist in the interpretation of the criteria

Name of Applicant:

Designation of Work: (<15 words)	
Date of Work:	
Engineering brief and objective: (< 30 words)	
Environment: Industry; Laboratory; Theory; Simulation, etc. in <15 words)	
Short Summary: (State engineering problems; solutions in < 30 words)	
Budget: (<10 words)	

***Well-defined engineering problems** have the following characteristics:*

a) can be solved mainly by practical engineering knowledge, underpinned by related theory;
and one or more of:
b) are largely defined but may require clarification;
c) are discrete, focused tasks within engineering systems;
d) are routine, frequently encountered, may be unfamiliar but in familiar context;
and one or more of:
e) can be solved by standardised or prescribed ways;
f) are encompassed by standards, codes and documented procedures; requires authorisation to work outside limits;
g) information is concrete and largely complete, but requires checking and possible supplementation;
h) involve several issues but few of these imposing conflicting constraints and a limited range of interested and affected parties;
and one or both of:
i) requires practical judgement in practice area in evaluating solutions, considering interfaces to other role-players;
j) have consequences which are locally important but not far reaching (wider impact are dealt with by others).

Well-defined engineering activities (WDEA) have several of the following characteristics:

a) *Scope* of practice area is defined by techniques applied; change by adopting new techniques into current practice;
b) Practice area is located within a wider, complex *context,* with well-defined working relationships with other parties and disciplines;
c) Work involves familiar, defined range of *resources,* including people, money, equipment, materials, technologies;
d) Require resolution of *interactions* manifested between specific technical factors with limited impact on wider issues;
e) Are *constrained* by operational context, defined work package, time, finance, infrastructure, resources, facilities, standards and codes, applicable laws;
f) Have *risks* and *consequences* that are locally important but are generally not far reaching.

Outcomes and Criteria	
Outcome 1: Define, investigate and analyse well-defined engineering problems encountered in your work:	
1.1 State how you interpreted the work instruction received, checking with your client or supervisor if your interpretation is correct.	
1.2 Describe how you analysed, obtained and evaluated further clarifying information, and if the instruction was revised as a result.	
Outcome 2: Design or develop a solution to well-defined engineering problems encountered in your work:	
2.1 Describe how you designed or developed and analysed alternative approaches to do the work. Impacts checked. Calculations attached	
2.2 State what the final solution to perform the work was, client or your supervisor in agreement.	
Outcome 3: Comprehend and apply the knowledge in established engineering practices and knowledge specific within your practice area as applied in your task:	
3.1 State what NDip level engineering standard procedures and systems you used to execute the work, and how NDip level theory was applied to understand and/or verify these procedures.	
3.2 Give your own NDip level theoretical calculations and/or reasoning on why the application of this theory is considered to be correct (Actual examples).	
Outcome 4: Manage part or all of one or more well-defined engineering activities embodied in your work:	
4.1 State how you managed yourself, priorities, processes and resources in doing the work (e.g. bar chart).	
4.2 Describe your role and contribution in the work team.	
Outcome 5: Communicate clearly with others in the course of your engineering activities (well-defined engineering work):	
5.1 State how you presented your point of view and compiled reports after completion of the work.	
5.2 State how you compiled and issued instructions to entities working on the same task.	
Outcome 6: Recognise the reasonably foreseeable social, cultural and environmental effects of your well-defined engineering activity (task):	
6.1 Describe the social, cultural and environmental impact of this engineering activity.	
6.2 State how you communicated mitigating measures to affected parties and acquired stakeholder engagement.	
Outcome 7: Meet all legal and regulatory requirements and protect the health and safety of persons in the course of your well-defined engineering activity (task):	
7.1 List the major laws and regulations applicable to this particular	

activity and how health and safety matters were handled.	
7.2 State how you obtained advice in doing risk management for the work and elaborate on the risk management system applied.	
Outcome 8: Conduct engineering activities ethically in executing your work:	
8.1 State how you identified ethical issues and affected parties and their interest and what you did about it when a problem arose.	
8.2 Confirm that you are con-versant and in compliance with ECSA's Code of Conduct and why this is important in your work.	
Outcome 9: Exercise sound judgement in the course of well-defined engineering activities encountered in your work:	
9.1 State the factors applicable to the work, their interrelationship and how you applied the most important factors.	
9.2 Describe how you foresaw work consequences and evaluated situations in the absence of full evidence.	
Outcome 10: Be responsible for making decisions on part or all of well-defined engineering activities included in your work:	
10.1 Show how you used NDip theoretical calculations to justify decisions taken in doing engineering work. Attach actual calculations	
10.2 State how you took responsible advice on any matter falling outside your own education and experience.	
10.3 Describe how you took responsibility for your own work and evaluated any shortcoming in your output.	
Outcome 11: Undertake professional development activities sufficient to maintain and extend your competence.	
11.1 State what strategy you have independently adopted to enhance your own professional development.	
11.2 State the philosophy of your employer in regard to your professional development.	
Evidence of your competency development plan and independent learning ability must be given in the Initial Professional Development Report, Form R-03-IPD-PN (Appendix H).	

Signature of Applicant: _____ **Date:**

Signature of Mentor / Supervisor: _____

Name of Mentor/Supervisor printed: **Tel. No.:**

Appendix H: Academic Record

Engineering Council of South Africa **Form R-03-AR-PN** (2014-02-17)

Detailed information on

TERTIARY ENGINEERING QUALIFICATIONS

As part of the Application for Registration as a Professional Engineering Technician

Name of Applicant:

Name of Qualification:

All subjects passed	Year Obtained	Marks obtained *(if available)*
Extra subjects passed for incomplete qualifications		
	Total Credits	

Signature of Applicant **Date**

Appendix I: Initial Professional Development Report (IPD)

Engineering Council of South Africa **Form R-03-IPD-PN** (2014-02-17)

INITIAL PROFESSIONAL DEVELOPMENT REPORT (IPD)

As part of the Application for Registration as a Professional Engineering Technician

Name:

Discipline:

Itemise courses, workshops, conferences, symposia or congresses attended.
List these under the separate headings of engineering, management and computer courses.

Name or subject of item	Course Provider	Dates attended	SAQA NQF level if available	Duration in hours	Credits	For use of Assessor
Engineering Courses						
Management Courses						
Computer Courses						

Signature of Applicant **Date**

Appendix X: (Interim use for Alternative Route Applicants until ECSA examinations can be conducted)

Engineering Council of South Africa **Form R-03-EDR-PN** (2014-02-17)

EDUCATIONAL DEVELOPMENT REPORT

A	**1. INSTRUCTIONS** **1. Applicants not in possession of an ECSA accredited National Diploma in Engineering should complete this work based (experience) learning report. WRITE A REPORT IN ABOUT 100 WORDS ON EACH CRITERION LISTED.** **2. Reports must include reference to any *well-defined* practical examples in the work place demonstrating how the competencies were satisfied, and is not restricted to a single task or project. (Additional supporting evidence may be attached, if necessary – limited to two A4 pages).** **3. This information can be provided from education or experience, or a combination of both.** **4. The applicant must sign the completed report and also obtain a signature from his/her supervisor.** **5. The applicant may be invited to an interview to expand and/or confirm this report.**
	***Well-defined engineering problems** have the following characteristics:* a) can be solved mainly by practical engineering knowledge, underpinned by related theory; *and one or more of:* b) are largely defined but may require clarification; c) are discrete, focused tasks within engineering systems; d) are routine, frequently encountered, may be unfamiliar but in familiar context; *and one or more of:* e) can be solved by standardised or prescribed ways; f) are encompassed by standards, codes and documented procedures; requires authorisation to work outside limits; g) information is concrete and largely complete, but requires checking and possible supplementation; h) involve several issues but few of these imposing conflicting constraints and a limited range of interested and affected parties.

B.	**APPLICANT'S PERSONAL DETAILS**			
	Name:		**Technical Qualifications:**	

C.	**EDUCATIONAL DEVELOPMENT REPORT (OUTCOMES BASED, DURING WORK EXPERIENCE)**

Exit Level Outcome 1. The applicant displays understanding of and the ability to apply a coherent range of discipline specific fundamental principles in engineering science and technology supported by established mathematical formulas to solve *well-defined* engineering problems.

Item	Criteria	Development Report
1.1	State what mix of mathematical, natural science and engineering knowledge you applied in the solution of the *well-defined engineering problem.* State which principles and laws were used.	
1.2	Describe how you analysed the engineering materials, components, systems or processes used and provide the motivation for the specific selection.	
1.3	Describe the procedures applied for dealing with uncertainty and risk applicable to your own theoretical limitations and the use of specialists to do the work.	

Exit Level Outcome 2. The applicant displays proficiency in discipline specific engineering techniques at exit level.		
Item	**Criteria**	**Development Report**
2.1	Describe how you analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem.	
2.2	Describe how you generated possible solutions to the problem and how they were analysed and prioritised.	
2.3	State how you selected, formulated and presented the preferred solution.	

Exit Level Outcome 3. The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline for the solution of *well-defined* engineering problems.		
Item	**Criteria**	**Development Report**
3.1	Describe how you assess the method, skill or tool (including computer applications) for applicability to solving problems.	
3.2	Describe how you applied the method, skill or tool correctly to achieve the required result, and how this tested against the required results.	

Exit Learning Outcome 4. The applicant demonstrates procedural design proficiency through project work. The design problem meets the requirements of a *well-defined engineering problem* and the design approach is properly structured.		
Item	**Criteria**	**Development Report**
4.1	Describe how you formulated the design problem and how the design process was managed.	
4.2	Describe how user needs, legislation, standards and resources were acquired and evaluated.	
4.3	Describe how you performed the design task, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints.	
4.4	Describe how the selected design was evaluated in terms of impact and benefits and how this information was communicated in a technical report.	

Exit Level Outcome 5. The applicant displays proficiency in standardised experimental and research methodology		
Item	**Criteria**	**Development Report**
5.1	Describe the plan you devised to perform the investigation stating what information was used.	
5.2	Describe the methodology you used to perform the analysis stating the equipment and/or software used.	
5.3	From the data available, describe how information was derived, analysed and interpreted to reach conclusions.	
5.4	Describe how the purpose, process and outcomes of the investigation are recorded in a technical report.	

Exit Level Outcome 6. The applicant communicates in writing at the exit level of a Ndip programme
No entry required. Assessment will be done against evidence submitted in item 5 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 7. The applicant explains and analyses impacts of engineering activity addressing issues by defined procedures.
No entry required. Assessment will be done against evidence submitted in item 6 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 8. The applicant understands and commits to professional ethical principles in engineering.
No entry required. Assessment will be done against evidence submitted in item 8 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 9. Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a technical team and to manage projects.
No entry required. Assessment will be done against evidence submitted in item 4 of the Engineering Report (Form R-03-ER-PN).

Exit Level Outcome 10. Engage in independent and life-long learning through well-developed learning skills.
No entry required. Assessment will be done against evidence submitted in item 11 of the Engineering Report (Form R-03-ER-PN and the Initial Professional Development Report (Form R-03-IPD-PN).

Signature of Applicant: _____Date:

Signature of Mentor / Supervisor: _____

Name of Mentor/Supervisor printed: **Tel. No.:**

Appendix J:

	ENGINEERING COUNCIL OF SOUTH AFRICA Assessment Form: Professional Engineering Technicians	Form R-03-AF-PN (2014-02-17)

1	**Applicant's Personal Details:**	Name:		Age:	
	Employer:		ECSA Ref No:		

2	**Qualifications and Development:**	Engineering 1:		Date obtained:		Discipline	
		Engineering 2:		Date obtained:		Discipline	
		Other:		Date obtained:		Discipline	
		Previous Reg:		Date registered:		Category:	

3	**Referee Reports: (R-03-REF-PN)**	**No:**	**Registered as:**	**Work Relationship[14]:**	**Evaluation[3]:**	**Remarks:** (e.g. contact details of referee.)		
		1:						
		2:						
		3:						
		Holistic Evaluation (cross applicable block)[3]		CDC	CDI	CNDD	CND	X

4	**Training and Experience Reports:** ✓ **if applicable** *(Periods 1 to 12, columns 4 to 8 only)*	**Period No:**	**Practically Defined[4]:** *(Artisan)*	**Specific-Defined[5]:** *(Spec. Cat)*	**Well-defined[6]:** *(Technician)*	**Broadly Defined[7]:** *(Technolog)*	**Degree of Responsibility Enter A to E[8]:**	**Duration in Years:** *(Enter years/months)* **Total**	**WR[9] > E**
		1							
		2							
		3							
		4							
		5							
		6							
		7							
		8							
		9							
		10							
		11							
		12							
		Experience Required (yrs.):				**With Responsibility E (yrs.):**			
		Actual Experience (yrs.):				**Actual Responsibility at E (yrs.):**			

5. Individual Experiential Assessment:[11]	**Name and Signature:**		**Date:**
Competence Indicated, register (CI):		**Request more evidence as indicated (ME):**	
An additional ECSA registered referee in a supervisory capacity required I:		**Defer and update Engineering Report R-03-ER-PN to address lacking evidence indicated (Dx): (x = 1 or 2)**	
Competence Not Indicated (CNI) on the criteria as shown, do not register:		**Interview to obtain evidence indicated (I):**	

6. Group Experiential Assessment:[12]	**Signature Chairperson:**		**Date:**
Group Members:			
Competence Indicated, register (CI):		**Request more evidence as indicated (ME):**	
An additional ECSA registered referee in a supervisory capacity required I:		**Defer and update Engineering Report R-03-ER-PN to address lacking evidence indicated (Dx): (x = 1 or 2)**	
Competence Not Indicated (CNI) on the criteria as shown, do not register:		**Interview to obtain evidence indicated (I):**	

7. Interview Experiential Assessment:[12]	**Signature Chairperson:**		**Date:**
Interview Team Members:			
Competence Indicated, register (CI):		**Request more evidence as indicated (ME):**	
An additional ECSA registered referee in a supervisory capacity required I:		**Defer and update Engineering Report R-03-ER-PN to address lacking evidence indicated (Dx): (x = 1 or 2)**	
Competence Not Indicated (CNI) on the criteria as shown, do not register:			

8.	**Chairperson Technician Committee (Experiential):**	Signed:	Date:

9. **Assessment Results All Applicants**: Score according to [4) – 7)] in Nomenclature below for Engineering Report or Interview						
Outcomes and Criteria	[11)]**Indiv. Assess**	**Group Assess**	**Inter-view**	**Weigh-ing**	**Final Result**[10)]	**Remarks**
Group A: Engineering problem solving:						
Outcome 1: Define, investigate and analyse well-defined engineering problems						
1.1 Interpret the problem given to solve				4		
1.2 Investigate and analyse further information obtained				3		
Outcome 2: Design or develop solutions to well-defined engineering problems						
2.1 Design or development of alternative solutions. Impacts				5		
2.2 Select of the best solution, agreed to by the recipient.				2		
Outcome 3: Comprehend and apply NDip theory						
3.1 NDip level procedures and systems used to solve problems				5		
3.2 Theoretical reasoning behind procedures & systems used				5		
Group B: Managing Engineering Activities:						
Outcome 4. Manage activity						
4.1 Manage self, priorities, processes, resources				2		
4.2 Participate in team-work. Role evident.				2		
Outcome 5. Communicate during the activity						
5.1 Present point of view, write reports correctly				2		
5.2 Compile and issue clear instructions				3		
Group C: Impacts of Engineering Activity:						
Outcome 6. Social, cultural and environmental impact of the activity						
6.1 Social and environmental impact of work realised				2		
6.2 Mitigating measures interacted with stakeholders				2		
Outcome 7. Legal, regulatory and health and safety requirements						
7.1 Major laws and regulations known and applied.				3		
7.2 Advice on risk management obtained and applied				2		
Group D: Exercise judgement, take responsibility and act ethically:						
Outcome 8. Conduct engineering activities ethically						
8.1 Ethical issues and affected parties noted and utilised				1		
8.2 ECSA's Code of Conduct identified and appreciated				1		
Outcome 9. Exercise sound judgement						
9.1 Factors applicable to the work and interrelationship applied				4		
9.2 Work consequences foreseen and situation evaluated				3		
Outcome 10. Take decisions responsibly						
10.1 Theory applied to justify decisions taken				4		
10.2 Advice taken on matters outside own ability.				3		
10.3 Take responsibility for own evaluated work				4		
Group E: Continued Professional Development:						
Outcome 11. Undertake learning activities						
11.1 Strategy independently adopted to enhance professional development evident. (IPD[1)] report)				2		
11.2 Awareness of philosophy of employer in regard to professional development evident.				4		
				SUB-TOTAL:		**TOTAL (÷2)**

10	**Comment and Instructions:**		
11	**Training Detail:**	Training under a C&U (Y/N)	
		Name of organisation training the applicant	
		ECSA Registered Mentor (Y/N)	

12. **Assessment Results Alternative Route Applicants:** Score according to [4)-7)] in Nomenclature for R-03-EDR-PN Report or Interview							
Outcomes and Criteria	[11)]Indiv. Assess	Group Assess	Inter-view	Weigh-ing	Final Result[10)]	Remarks
1. The applicant displays understanding of and the ability to apply a coherent range of discipline specific fundamentals principles in engineering science and technology supported by established mathematical formulas to solve well-defined problems.						
1.1 Mix of mathematical, natural science and engineering knowledge applied in the solution of the *well-defined engineering problem* stated. Principles and laws used, stated.				3		
1.2 How engineering materials, components, systems or processes used were analysed, stated, and the motivation for the specific selection provided.				2		
1.3 The procedures applied for dealing with uncertainty and risk applicable to own theoretical limitations and the use of specialists to do the work described.				1		
2 The applicant displays proficiency in discipline specific engineering techniques at the exit level.						
2.1 Analysed and defined a problem and identified the engineering knowledge and skills required for solving the problem.				1		
2.2 Generated possible solutions to the problem and how they were modelled, analysed and prioritised.				3		
2.3 Selected, formulated and presented the preferred solution.				1		
3. The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline for the solution of well-defined problems.						
3.1 How the method, skill or tool (including computer applications) was assessed for applicability to solving problems, described.				1		
3.2 How the method, skill or tool was applied correctly to achieve the required result described, and how this tested against the required results				1		
4. The applicant demonstrates procedural design proficiency through project work. The design problem meets the requirements of a well-defined engineering problem and the design approach is properly structured.						
4.1 How the design problem was formulated and how the design process was managed, described.				1		
4.2 How user needs, legislation, standards and resources were acquired and evaluated, described.				1		
4.3 How the design task was performed, selecting a preferred solution out of alternatives, subject to relevant premises, assumptions and constraints, described.				3		
4.4 How the selected design was evaluated in terms of impact and benefits described, and how this information was communicated in an engineering report.				1		
5. The applicant displays proficiency in standardised experimental or investigative and information handling methodology						
5.1 The plan devised to perform the investigation described, stating what information was used.				1		
5.2 The methodology used to perform the analysis described, stating the equipment and/or software used.				1		
5.3 How information was derived, critically analysed and interpreted from the data available to reach conclusions.				2		
5.4 How the purpose, process and outcomes of the investigation were recorded in an engineering report.				1		
6. The applicant communicates in writing at the exit level of a NDip programme. **(Use score from 9 above, 5.1 and 5.2)**						
6.1 Present point of view, write reports correctly				1		
6.2 Compile and issue clear instructions				1		
7. The applicant explains and analyses impacts of engineering activity addressing issues by defined procedures. **(Use score from 9 above, 6.1 and 6.2)**						
7.1 Social and environmental impact of work realised				1		
7.2 Mitigating measures interacted with stakeholders				1		
8. The applicant understands and commits to ethical principles in engineering. **(Use score from 9 above, 8.1 and 8.2)**						
8.1 Ethical issues and affected parties noted and utilised				1		
8.2 ECSA's Code of Conduct identified and appreciated				1		
9. Demonstrate knowledge and understanding of engineering management principles. **(Use score from 9 above, 4.1 and 4.2)**						
9.1 Manage self, priorities, processes, resources				1		
9.2 Participate in team-work. Role evident.				1		
10. Engage in independent lifelong learning through well-developed learning skills. **(Use score from 9 above, 11.1 and 11.2)**						
10 1 Strategy independently adopted to enhance professional development evident. (IPD[1)] report)				1		
10.2 Awareness of philosophy of employer in regard to professional development evident.)				1		
				TOTAL:		

13. Individual Educational Assessment:[11]	Name and Signature:		Date:	
Development to Ndip level evident (CI):		Request more evidence as indicated (ME):		
An additional ECSA registered referee in a supervisory capacity required I:		Defer and update R-03-EDR-PN Report to address lacking evidence indicated (Dx): (x = 1 or 2)		
Development to NDip level not evident, Competence Not Indicated (CNI):		Interview to obtain evidence indicated (I):		

14. Group Educational Assessment:[12]	Signature Chairperson:		Date:	
Group Members:				
Development to NDip level evident (CI):		Request more evidence as indicated (ME):		
An additional ECSA registered referee in a supervisory capacity required I:		Defer and update R-03-EDR-PN Report to address lacking evidence indicated (Dx): (x = 1 or 2)		
Development to NDip level not evident, Competence Not Indicated (CNI):		Interview to obtain evidence indicated (I):		

15. Interview Educational Assessment:[12]	Signature Chairperson:		Date:	
Interview Team Members:				
Development to NDip level evident (CI):		Request more evidence as indicated (ME):		
An additional ECSA registered referee in a supervisory capacity required I:		Defer and update R-03-EDR-PN Report to address lacking evidence indicated (Dx): (x = 1 or 2)		
Development to NDip level not evident, Competence Not Indicated (CNI):				

16.	Chairperson Technician Committee (Educational):	Signed:	Date:

Nomenclature:

1) IPD – Initial Professional Development, CPD – Continued Professional Development
2) Y – Yes, N – No
3) Holistic Evaluation:
   - CDC The applicant consistently displays competence
   - CDI The applicant demonstrated competence but not consistently
   - CNDD The applicant has not demonstrated competence but is developing
   - CND The applicant has not demonstrated competence
   - X I am unable to comment
4) Practically Defined: Typically applicable to the engineering artisan categories Results 9 and 12, **SCORE=1**
5) Specifically Defined: Typically applicable to the engineering specified categories Results 9 and 12, **SCORE=2**
6) Well-defined: Typically applicable to professional engineering technicians Results 9 and 12, **SCORE=3**
7) Broadly-defined Typically applicable to engineering technologists Results 9 and 12 ,**SCORE=4**
8) Degree of Responsibility:
   - A – Being exposed, under full supervision
   - B – Assisting, responsibility limited
   - C – Participating, supervision limited
   - D – Contributing, performs work, detailed approval
   - E – Performing, limited guidance
9) Duration in years with responsibility – WR degree E
10) Final result: Multiply "Score" with the "Weight". **Note that if no evidence found, the score is 0, then Final Result=0**
11) Individual Assessment is the assessment done by a single assessor ("homework)
12) Group Assessment is done at by a sub-committee at a meeting or at an interview where a consensus decision is made which is confirmed by the chairperson of the sub-committee
13) Competence on Outcomes 6-10 is based on evidence in the Engineering Report (R-03-ER-PN) and the IPD Report (R-03-IPD-PN).
14) Work Relationship: Mentor; Supervisor; Employer; Colleague; Client

Technician Registration Committee 20130924

Revision History

Version	Date	Revised/Approved by	Nature of Revision
Rev 0: Concept A	28 March 2012	Erasmus	Initial attempt based on R-03-PE, technician forms incorporated
Rev 0: Concept B	5 April 2012	Revised by JIC	Technician forms revised as recommended
Rev 0: Concept C	12 May 2012	Revised by JIC	Technician forms revised as recommended
Rev 1.1	14 July 2013	Erasmus	Based on R-03-PE Rev 1.3 Draft A
Rev 1.2	24 September 2013	Revised by JIC Task Team	Improved alignment of Flow Diagrams and Annexures with R-03-PE Rev 1.3 Draft A
Rev 1.3	14 October 2013	Revised by Dr Stidworthy, Mr Moncur and Mr Erasmus	Further alignment with R-03-PE, but deviations confirmed and included. Inclusion of Annexure J for Technicians confirmed.
Rev 1.4	12 December 2013	Revised by Erasmus	Designation of Appendices updated in accordance with NRS Application Form.
Rev 1.5	21 December 2014	Revisions by JIC	Minor clarifications, editing and Annexure K added
Rev 1.6	17 February 2014	Approved by JIC	Minor editing – submit to TC and Council.
Rev 1-7	24 March 2014	Revisions by JIC	Removing Appendix K "Standard Letters" and part of Appendix J – Qualifications Table. Submit to TC, CRC and Council.
Rev 1.8	8 May 2014	Approved by JIC on 17 February 2014. Approved by TC on 5 May 2014. Approved by CRC on 8 May 2014.	Submit for approval to SAC (Stakeholder involvement), and Council (Provided stakeholder involvement is undertaken)
Rev 1.8	31 July 2014	Approved by Council	Not revised

ENGINEERING COUNCIL OF SOUTH AFRICA *Standards and Procedures System*			ECSA
Criteria and Processes for Recognition of Educational Qualifications for Professional Categories			
Status: Approved by Council			
Document : E-17-P	**Rev-1.1**	**17 March 2011**	

1. Purpose

1.1 This document defines the criteria and evaluation processes for recognition of educational qualifications and assessment of the level of educational achievement by applicants in candidate and professional categories. This document is structured as follows:

Section 2 reviews the statutory requirements and policy for educational achievement for registration and methods of satisfying the education requirements;

Section 3 expands on policy for holders of accredited qualifications or qualifications recognised under an international education agreement;

Section 4 details the evaluation of qualifications other than accredited or recognised qualifications and the evaluation of individual academic standing;

Section 5 describes practice in the case of applicants who do not meet the normal educational requirements.

1.2 This document does not cover the cases of applicants for registration via a mutual exemption agreement or an international register.

1.3 This policy supersedes "Recognition and Assessment of Academic Qualifications: Professional Engineers".

2. Background

2.1 The Engineering Profession Act (Act No. 46 of 2000) requires that applicants who desire to register in a professional category must satisfy Council that they have:

(a) demonstrated their competence as measured against standards determined by the Council for the relevant category of registration; and

(b) passed any additional examinations that may be determined by the Council.

The latter is referred to as the *educational requirement* for registration. The determination of standards by Council is embodied in the policy in document R-01-P. The various ways of meeting the educational requirements are summarised below.

2.2 The educational requirement for registration as a candidate or a professional is normally an accredited qualification or a qualification recognised under an international agreement. This policy provides further detail on meeting the requirements via accredited or recognised qualifications. The policy defines the mechanism for meeting the educational requirement for

registration as a candidate or professional by persons without accredited or recognised qualifications.

2.3 ECSA's policy on registration, document R-01-P, recognises four methods, denoted (i) to (iv), for meeting the educational requirement applicable in the category prior to applying for candidate or professional registration. In the first two, an applicant satisfies the educational requirement if he/she:

(i) holds an accredited qualification or acceptable combination of accredited qualifications prescribed for the category; or

(ii) holds a qualification or combination of qualifications recognised under an international academic agreement relevant to the category.

2.4 The third and fourth methods provide means for an applicant to demonstrate educational standing that is substantially equivalent to an accredited qualification for the category of candidate or professional registration by one or more of the following. The applicant:

(iii) holds a qualification or combination of qualifications that have been determined by case-by-case evaluation to satisfy criteria for substantial equivalence to an accredited qualification for the category by virtue of:

(a) the qualification(s) being awarded in a jurisdiction or by a provider that has a record of quality or a quality assurance system known to ECSA; or

(b) examination of detailed documentation on the qualification(s) reflecting substantial equivalence; or

(iv) presents a combination of evidence determined by Council for the category that indicates an *individual level of educational* achievement against criteria that is substantially equivalent to an accredited qualification; evidence may include:

(a) qualification(s) or credits towards qualifications not presented under (iii);

(b) completion of examinations or other forms of assessment set or prescribed by Council; or

(c) portfolio(s) of evidence of work and other outputs presented for assessment; or

(d) other evidence of prior learning presented for assessment.

2.7 Detailed requirements for the various methods of satisfying the educational requirements are laid out in subsequent sections.

3. Implementation of policy for methods (i) and (ii)

Method (i) Accredited Programme(s)

3.1 To satisfy the educational requirement by method (i), the applicant must hold an accredited qualification or acceptable combination of accredited qualifications prescribed for the category. Qualifications accredited by ECSA as meeting the education requirement for a category are listed in the documents referred to below. A graduate is recognised as meeting the education requirements for the category if he/she completed the programme in a year within the period of validity of the accreditation indicated on the list. This provision applies to:

3.1.1 All BEng-type programmes in Lists A and B of document E-20-PE for Candidate or Professional Engineer Applicants;

3.1.2 All National Diploma programmes listed in E-20-PN, subject to satisfying subject combinations specified in 3.2.1 for Candidate or Professional Engineering Technician applicants; and

3.1.3 All BTech programmes listed in E-20-PT subject to satisfying subject combinations specified in 3.2.2 for Candidate or Professional Engineering Technologist applicants.

3.2 Recognition of an accredited National Diploma as meeting the education requirements toward technician registration or BTech qualification as meeting the education requirements toward technologist registration is contingent on the subjects contained in the curriculum. The criteria for an acceptable curriculum are as follows:

3.2.1 **National Diploma:** As required under NATED 151, subject to variations permitted by the TPAC from time to time.

3.2.2 **BTech:** As required under NATED 151, with at least 0.625 NATED credits in engineering subjects relevant to the designation of the degree, subject to variations permitted by the TPAC from time to time.

Method (ii) Recognised Programme(s)

3.3 To satisfy the educational requirement, the applicant must hold a qualification or combination of qualifications recognised under:

3.3.1 the Washington Accord, the international academic agreement relevant to the categories of Candidate and Professional Engineer;

3.3.2 the Sydney Accord, the international academic agreement relevant to the categories of Candidate and Professional Engineering Technologist;

3.3.3 the Dublin Accord, the international academic agreement relevant to the categories of Candidate and Professional Engineering Technician.

3.4 The signatories to the various accords are identified on the International Engineering Alliance website (www.ieagreements.org). Each signatory maintains its list of accredited programmes. A graduate is recognised as meeting the education requirements if he/she completed the programme in a year within the period of validity of the accreditation after the admission date of the signatory to the relevant accord.

3.5 Programmes accredited by organisations holding provisional status in an Accord are not recognised by ECSA. Applicants holding such qualifications must follow the qualification or individual evaluation methods (iii) or (iv).

3.6 Where a qualification or combination of qualifications accredited by an accord signatory prior to the entry of the signatory to the accord is considered to be substantially equivalent to an accredited qualification, such qualifications must be listed as qualifications for accelerated processing provided for in section 4.9.1.

4. Process and Criteria for Applicants under Methods (iii) (Qualification Evaluation) and (iv) (Individual Assessment)

4.1 An applicant for candidate or professional registration in a category who does not hold an accredited qualification or a recognized qualification must apply for educational evaluation before applying for registration.

4.2 The criteria for substantial equivalence to an accredited qualification for the category are defined in:

4.2.1 Table 1 for the categories of Candidate and Professional Engineer;

4.2.2 Table 2 for the categories of Candidate and Professional Engineering Technologist;

4.2.3 Table 3 for the categories of Candidate and Professional Engineering Technician.

4.3 Recognition of educational achievement is granted for individual criteria for stated categories. Criteria may be satisfied either:

4.3.1 by demonstrating compliance of qualifications with qualifications evaluation (QE) criteria stated in Table 1, 2 or 3, column 2; or

4.3.2 assessment of the applicant against the individual assessment (IA) criteria stated in Table 1, 2 or 3, column 3.

4.4 After evaluation, a statement of full or partial recognition of educational achievement will be issued to the applicant stating the criteria satisfied and the category for which each criterion is satisfied.

4.5 An applicant who seeks to meet the educational requirement by method (i), (ii) or (iii) above and who provides evidence that he or she has been continuously in training and practice for ten years since graduation must be evaluated in terms of section 4.6 of R-01-P.

4.6 An applicant for educational evaluation who satisfies all criteria for candidate or professional registration in a category may apply for registration in that category, provided that assessment against the following criteria may be deferred to the assessment of professional competence when applying for professional registration in the relevant category;

4.6.1 In the case of an applicant for Candidate and Professional Engineering Technologist criteria 7 and 8 in Table 2;

4.6.2 In the case of an applicant for Candidate and Professional Engineering Technician criteria 7 and 8 in Table 3;

4.7 An applicant retains credit for those criteria that have been satisfied in particular categories for three years after the last day on which recognition of one or more credit is notified to the applicant.

4.8 An applicant for educational evaluation may undertake further learning and assessment to satisfy the outstanding criteria to obtain recognition in a category. Such an applicant must submit a proposal for the form of learning and assessment to be undertaken for approval.

4.9 The following mechanisms may be applied for qualifications evaluation as appropriate to individual cases:

4.9.1 An accelerated procedure is available for evaluating a fully documented qualification whose quality is known to ECSA and listed for accelerated processing. Here the applicant is required to supply only certified copies of the qualification certificate(s) and academic transcript(s). The evaluation process verifies that the qualification is of the listed type and that the subjects completed are consistent with being an engineering qualification. Such qualifications would normally be accredited by a

body which is not a signatory to one of the above Accords or come from an education system or institution known to ECSA to have substantially equivalent standards.

4.9.2 A fully documented qualification that does not conform to a listed known type may also be considered for substantial equivalence according to the criteria in the applicable Table 1, 2 or 3. In this case, the applicant must provide full information listed in Annexure 1.

4.10 The following mechanisms may be applied for individual assessment as appropriate to individual cases:

4.10.1 Written examination(s), set or prescribed by ECSA, in the fundamentals of the discipline relevant to the category, with embedded assessment of mathematics and underpinning natural sciences;

4.10.2 Written essay-type examination, set or prescribed by ECSA, on social, environmental, professional and ethical issues, with integral assessment of written communication ability relevant to the category;

4.10.3 Examinations at the exit level of accredited qualifications set by higher education providers or professional examining bodies in engineering specialist areas;

4.10.4 Oral examinations, provided that this is not the sole mechanism used;

4.10.5 Assessment of evidence presented by the applicant of prior learning against criteria in Tables 1, 2 or 3 as appropriate.

4.10.6 Evidence of work experience against criteria in Tables 1, 2 or 3 as appropriate.

4.11 Qualifications evaluation mechanisms 4.9.1 and 4.9.2 are normally applied first before invoking individual assessment mechanisms 4.10.1 to 4.10.6.

4.12 Applicants proceeding under Methods (iii) or (iv) may be interviewed to establish more information about the qualification. This form of interview is not an examination.

4.13 Evaluation of an applicant's qualification and individual evaluation of an applicant's educational standing by ECSA is an advisory service.

4.14 Applications must be prepared in the English language and all interviews and assessments will be conducted in English.

4.15 An applicant whose educational achievement is found to be deficient against particular criteria may within thirty days of notification submit further evidence for a review of the evaluation.

Table 1: Criteria for substantial equivalence of a qualification and individual performance to a qualification accredited as meeting the educational requirements for Candidate and Professional Engineer.

	Qualifications Evaluation Criteria	Individual Assessment Criteria[1]
1.1	The programme covers fundamentals of mathematics and natural science appropriate to the discipline. The programme contains the equivalent of at least one semester of mathematical sciences and one semester of natural sciences; and	The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected discipline together with the underpinning fundamentals of mathematics and natural science.
1.2	The programme adequately covers the engineering fundamentals appropriate to the discipline;	
1.3	The programme contains engineering studies related to current practice in the selected field.	The applicant displays proficiency in engineering specialist fields at the exit level
2	The level of problem solving demanded at the exit level corresponds to *complex engineering problems defined* in ECSA document E-02-PE.	
3	The programme contains a selection of engineering tools and IT support appropriate to the discipline	The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline.
4	The curriculum has the requirement for a major design exercise. The design problem meets the requirements of a *complex engineering problems* and the design approach is properly structured	The applicant demonstrates design proficiency is demonstrated through substantial project work. The design problem meets the requirements of a *complex engineering problems* and the design approach is properly structured
5	The curriculum requires experimental work and research methodology	The applicant demonstrates proficiency in experimental and research methodology
6	The curriculum requires oral and written communication at the level expected of a graduate	The applicant communicates in writing at the exit level of a BEng programme
7	The curriculum contains elements that give an understanding of the impact of engineering activity	The applicant explains and analyses impacts of engineering activity
8	The curriculum contains elements that give an understanding of ethics and engineering professionalism	The applicant explains ethical principles and analyses ethical issues

Table 2: Criteria for substantial equivalence of a qualification and individual performance to a qualification accredited as meeting the educational requirements for Candidate and Professional Engineering technologist.

	Qualifications Evaluation Criteria	**Individual Assessment Criteria[2]**

[1] These criteria will be elaborated in the detailed specification for each form of assessment.
[2] These criteria will be elaborated in the detailed specification for each form of assessment.

1.1	The programme has a fundamental treatment of mathematics and natural science appropriate to an engineering sub-discipline with at the equivalent of at least three quarters of a semester of mathematical sciences and one half of a semester of natural sciences	The applicant displays understanding of and the ability to apply the fundamentals of engineering in a selected sub-discipline together with the underpinning fundamentals of mathematics and natural science.
1.2	The programme adequately covers the engineering fundamentals appropriate to the sub-discipline	
1.3	The programme contains studies of the engineering technologies relevant to the sub-discipline	The applicant displays proficiency in engineering specialist fields of a selected engineering sub-discipline at the exit level
2	The level of problem solving demanded at the exit level corresponds to *broadly-defined engineering problems defined* in ECSA document E-02-PT	
3	The programme contains a selection of engineering tools and IT support appropriate to the sub-discipline	The applicant displays proficiency in the use of engineering tools and IT support appropriate to the sub-discipline.
4	Design proficiency is demonstrated through substantial project work. The design problem meets the requirements of a *broadly-defined engineering problems* and the design approach is properly structured	The applicant demonstrates design proficiency through substantial project work. The design problem meets the requirements of a *broadly-defined engineering problems* and the design approach is properly structured
5	The programme contains experimental or investigative work and information-handling methodology	The applicant demonstrates proficiency in experimental or investigative and information-handling methodology
6	The curriculum requires oral and written communication at the level expected of a technology graduate	The applicant communicates in writing at the exit level of a BTech programme
7	The curriculum contains elements that give an understanding of the impact of the engineering technologies of the sub-discipline	The applicant explains and analyses impacts of engineering technologies of the sub-discipline
8	The curriculum contains elements that give an understanding of ethics and engineering professionalism	The applicant explains ethical principles and analyses ethical issues

Table 3: Criteria for substantial equivalence of a qualification and individual performance to a qualification accredited as meeting the educational requirements for candidate and professional engineering technician.

	Qualifications Evaluation Criteria	Individual Assessment Criteria[3]
1.1	The programme covers fundamentals of mathematics and natural science appropriate to a sub-discipline with at least the equivalent of one half of a semester of mathematical sciences and one third of a semester of natural sciences	The applicant displays understanding of and the ability to apply a coherent range of discipline specific fundamental principles in engineering science and technology supported by established mathematical formulas to solve *well-defined* engineering problems.
1.2	The programme adequately covers the engineering fundamentals appropriate to the sub-discipline	
1.3	The programme contains studies of the engineering technologies relevant to the sub-discipline	The applicant displays proficiency in discipline specific engineering techniques at exit level.
2	The level of problem solving demand at the exit level corresponds to *well-defined engineering problems defined* in ECSA document E-02-PN	
3	The programme contains a selection of engineering tools and IT support appropriate to the sub-discipline	The applicant displays proficiency in the use of engineering tools and IT support appropriate to the discipline for the solution of *well-defined* engineering problems.
4	Design proficiency is demonstrated through project work. The design problem meets the requirements of a *well-defined engineering problems* and the design approach is properly structured	The applicant demonstrates procedural design proficiency through project work. The design problem meets the requirements of a *well defined* engineering problem and the design approach is properly structured
5	Proficiency in experimental procedures and data-handling methodology is demonstrated	The applicant demonstrates proficiency in standardised experimental and research methodology
6	The curriculum requires oral and written communication using prescribed formats	The applicant communicates in writing at the exit level of a NDip programme
7	The curriculum contains elements that give an understanding of the impact of the engineering procedures of the sub-discipline	The applicant explains and analyses impacts of engineering activity addressing issues by defined procedures.
8	The curriculum contains elements that give an understanding of ethics and engineering professionalism	The applicant understands and commits to professional ethical principles in engineering.

[3] These criteria will be elaborated in the detailed specification for each form of assessment.

5. Case of Applicants who do not meet requirements

5.1 The general practice will be to inform the applicant that he/she has not met the educational requirements and list the criteria that were not satisfied. The applicant is then free to take remedial action and return for evaluation. In general, applications will not be refused outright; only in rare cases will a decision of no recognition possible be returned. Refusals therefore need not be referred to the Central Registration Committee for a final decision.

6. Composition of Interview and Oral Examination Panel

6.1 An interview in terms of section 4.12 or an oral examination in terms of section 4.10.4 must be conducted by at least two academics who are currently active in conducting accredited programmes in or related to the discipline of the applicant and one practitioner registered in a relevant category.

7. Definitions

Engineering Discipline: a generally-recognised, major subdivision of engineering such as the traditional *disciplines* of Chemical, Civil, or Electrical Engineering, or a cross-disciplinary field of comparable breadth including combinations of engineering fields, for example Mechatronics, and the application of engineering in other fields, for example Bio-Medical Engineering.

Subdiscipline: a generally-recognised practice area or major subdivision within an engineering discipline, for example Structural and Geotechnical Engineering within Civil Engineering.

Substantial Equivalence: applied to educational programmes means that two programmes, while not meeting a single set of criteria in detail, provide their respective graduates with knowledge and abilities to enable the graduates to undertake the same work and professional development.

Annexure 1: Information for applicants for evaluation of qualifications, individual evaluation or proceeding by methods (iii) or (iv)

A person proceeding via the qualification evaluation route method (iii) or (iv) must provide at least the following evidence of educational achievement:

- Certified copies of all qualifications
- Full academic transcripts
- If the type of programme does not appear on the list of programmes whose graduates are eligible for consideration under case (iii), the following material must be supplied:
  - A curriculum analysis using the worksheet provided with as much details as possible
  - Syllabi of the subjects studied
  - Project report(s)

Revision History

Version	Date	Status/Authorised by	Nature of Revision
Rev 1.0	25 Nov 2010	Approved by Council	Implementation Plan to follow
Rev 1.1	17 Mar 2011	Approved by Council	Minor editorial changes

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