ECSA

ENGINEERING COUNCIL OF SOUTH AFRICA

An Effective Regulator Assuring Engineering Excellence

Training and Mentoring Guide for Specified Categories

R-04-T&M-GUIDE-SC

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DEFINITIONS

Accredited qualification: A qualification awarded on successful completion of an accredited programme.

Applicant: A person applying to the ECSA for registration in a specified category.

Benchmark Route: The normal process to attain registration consisting of completion of an accredited, recognised or evaluated substantial qualification and a well-structured and effectively executed programme of training and experience for the category of registration.

Candidate: A person who is registered with the ECSA in a Candidate Category of registration

Competency Standard: Statement of competency required for a defined purpose.

Competency indicator: The typifying guide to evidence indicating competence that is not normative.

Continuing Professional Development (CPD): The systematic, accountable maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for the execution of work throughout an engineering practitioner's career.

Engineering Practitioner: Engineers before or after professional registration in general are referred to as practitioners of engineering who invent, design, analyse, build and test the equipment's / machine's, complex systems, structures, components and material to fulfil the functional objective and requirements while considering the limitations imposed by practicality, regulation, safety and cost.

Engineering Problem: A problematic situation that is amenable to analysis and solution using engineering sciences and methods.

Engineering Science: A body of knowledge based on the natural sciences and using mathematical formulation where necessary that extends knowledge and develops models and methods to support its application, to solve problems and to provide the knowledge base for engineering specialisations.

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Generic baseline competency: The competence for a specified category defined in terms of outcomes, including the expected level of performance that can be demonstrated in a range of occupational and/or managerial contexts.

Initial Professional Development (IPD): Systematic participation in the activities typical of CPD but carried out prior to registration.

Integrated Performance: An overall satisfactory outcome of an activity that requires several outcomes to be satisfactorily attained, for example a design requires analysis, synthesis, analysis of impacts, checking of regulatory conformance and judgement in decisions.

Level Descriptor: A measure of performance demands at which outcomes must be demonstrated in accordance with Degree of Responsibilities (DoR). The level descriptor is applicable to the registration category defined within specifically defined engineering work/activities/tasks/projects.

Mentee: A person under the guidance of a mentor.

Mentor: A professionally registered person who guides the competence development of an applicant / mentee in an appropriate category.

Outcome: A statement of the performance that a person must demonstrate to be judged competent at the professional level.

Practice area: 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 and RPL followed.

Professional development: The continuing education and career training after a person has entered the workforce to help them develop new skills, stay up to date on current trends and advance their career.

Professional review: An integrative assessment of the applicant's competence, including professional attributes specified in the standard and sub-discipline specific requirements for the

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category and the sub-discipline via a comprehensive review of the applicant's evidence and an interview.

Referee: A professionally registered person who is willing to attest to the competence of a person applying for professional registration in a concomitant Category and Discipline, and thus eligible to sign off on evidentiary reports submitted by the applicant.

Refusal: When an application for registration as an SC Practitioner is refused.

Standard: In the educational context, see Qualification Standards in documents **E-02-PN** / **E-02-PT** / **E-05-PT** / **E-06-PN/E** / **E-07-SC** / **E-08-PN** / **E-09-PGDip** / **E-09-PT** / **E-21-PN** / **E-22-P** and in the registration context, see document Competency Standard **R-02-STA-SC**.

Specified category: A category of registration created for persons who must be registered through the Engineering Profession Act or a combination of the Engineering Profession Act and external legislation as having specific engineering competencies a minimum of NQF 5, trade test within the required scope of registration or better, related to an identified need to protect the public safety, health and interest of the environment, in relation to an engineering activity. It includes RPL for the specific scope or category.

Substantial Equivalence: Applied to educational programmes and means that two programmes, while not meeting a single set of criteria, are both acceptable for preparing their respective graduates to gain training and experience towards registration.

Supervisor: A person who oversees and controls engineering work performed by an applicant.

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ABBREVIATIONS

ECSA	Engineering Council of South Africa
EPA	Engineering Profession Act, 46 of 2000
C&U	Commitment and Undertaking
QE	Qualification Evaluation
IA	Individual Assessment
RPSC	Research, Policy and Standards Committee
R	Registration
SC	Specified category
TER	Training and Experience Report
TES	Training and Experience Summary
IPD	Initial Professional Development
CPD	Continuing Professional Development
DoR	Degrees of Responsibilities

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APPLICABLE DOCUMENTS

E-17-PRO-SC	SC Criteria and Process for the Recognition of Educational Qualifications for Specified Categories
R-01-POL-SC	Policy on Registration of Practitioners in Specified Categories
R-02-STA-SC	Competency Standard for Registration in a Specified Category
R-03-PRO-SC	Process for Processing of Application in Specified Category
R-04-TM-GUIDE-SC	Training and Mentoring Guide for Specified Categories
R-08-CS-GUIDE-SC	Guide to Competency Standards for Registration in Specified Category
E-07-SC	Qualification Standards for Higher Certificate in Engineering for Specified Categories: NQF Level 5

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BACKGROUND

The illustration below defines the documents that comprise the Engineering Council of South Africa (ECSA) system for registration in specified categories. The illustration also locates the current document.

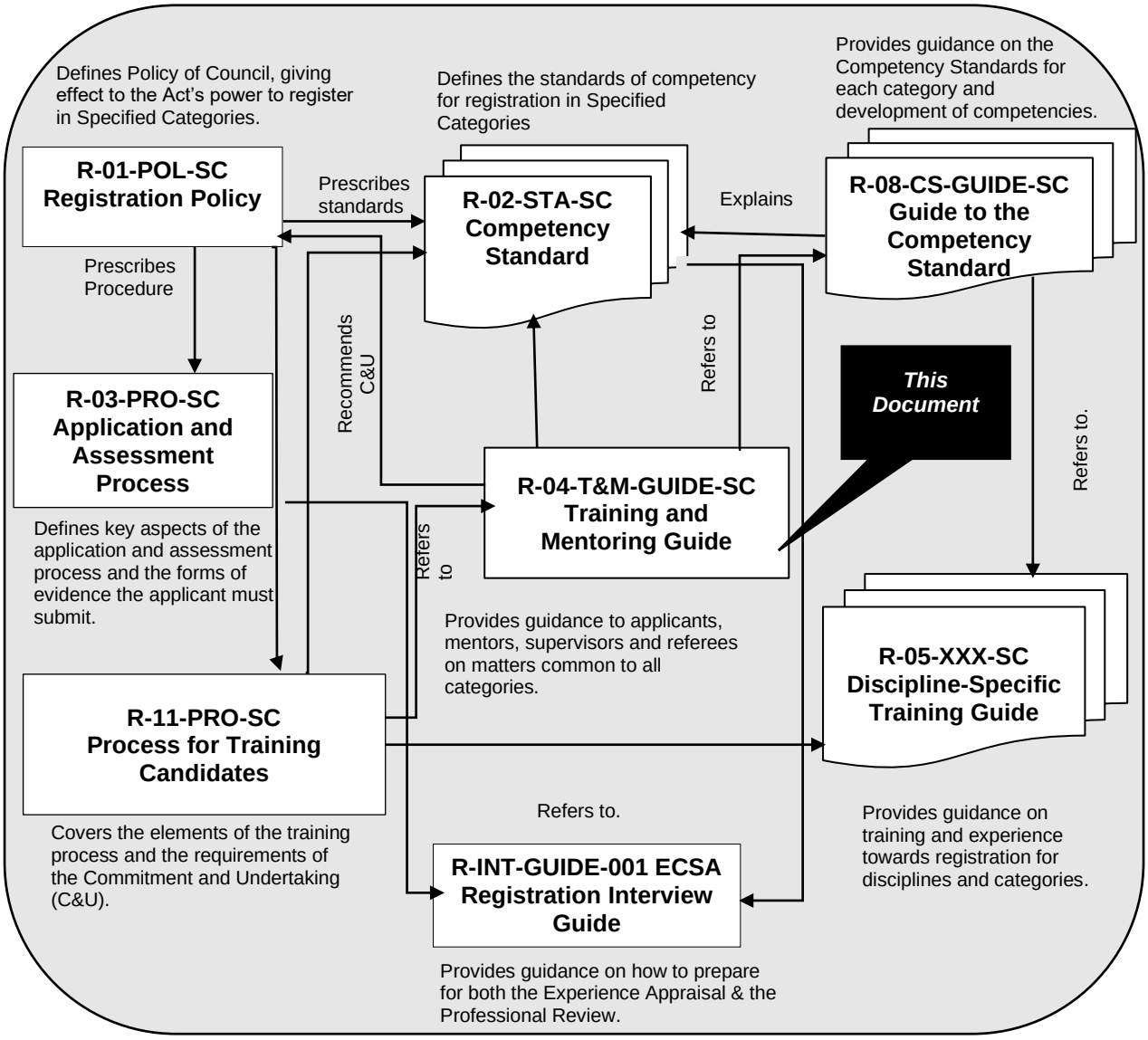

Figure 1: Documents defining the ECSA registration system for specified categories

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1. PURPOSE OF THIS DOCUMENT

This Training and Mentoring Guide describes the process of training mentees towards registration and the requirements that must be met for professional registration in the different specified categories and scope. It provides a guidance for developing a structured engineering training and mentoring programme that is set at appropriate levels as defined in the standards, as well as defining engineering activities necessary for proper development of the mentees that allow for an increase in responsibility and accountability during the training period.

The document additionally defines the roles and responsibilities of a mentee and mentor, and provides guidance for supervisors, mentors, referees and individuals intending to register with the ECSA within a specified category.

The ECSA places a high emphasis on applicants undergoing a structured training and mentoring programme as the preferred method for gaining experience and preparing for professional registration as well as applicant/mentee training under a Mentor. Applicants who have not undergone such a training and mentoring programme can however still apply for registration. Similarly, candidates/applicants who meet the required competencies and experience can register in any specified category and scope regardless of whether they have a Mentor, although having a Mentor is recommended.

This document also provides guidelines on how to structure a mentor–mentee agreement. It also proposes developing an effective **Training and Mentoring Programme Process** tool or technique to monitor training progress.

In each specified category (i.e., Lift Inspectors, Lifting Machinery Inspector, Medical Equipment Maintainers, Fire Protection System Practitioner, Fire Protection System Inspector, Civil Laboratory Technical Controller, Enterprise Integration Practitioner etc.), this document is supplemented by a C*ompetency Standard for Registration in a Specified Category* (document **R-02-STA-SC)** and a guide relating to the professional competencies for the category (document **R-08-CS-GUIDE-SC**). In addition, within a category, each discipline may provide further guidance on the training and registration requirements in the form of a Sub-d*iscipline specific Training Guide* (documents **R-05-XXX-SC**).

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2. ROLES AND STAKEHOLDERS

This document is directed towards prospective mentees (i.e., graduates, candidates and applicants) who wish to apply for professional registration, as well as for Mentors and Supervisors who support and guide the training of prospective applicants. This guideline is intended to facilitate the development and execution of a structured mentoring approach for prospective mentees to gain experience incorporating good practice elements.

Unless the context requires otherwise, the term candidate is used throughout this guide to define any engineering professional in training. After graduation, an unregistered person performing engineering work is referred to as a mentee (for those who have a mentor), a candidate for those who are registered under the Engineering Profession Act, 46 of 2000. When the unregistered person reaches the stage of readiness for application for registration under a specified category, the term applicant is used. For the sake of this document, the terms are used interchangeably to define an unregistered person undergoing training with the aim of registering as a professional engineering practitioner.

2.1 Overview of roles in training and or mentoring

The objective of this is Training and Mentoring Guide is to provide information to assist mentees to develop their competency to a level where they can consistently demonstrate competence at the required Level of Responsibility and to take responsibility for work performed. Three key players are involved in training a mentee to reach a desirable Level of Responsibility namely: supervisors, mentors and referees. The roles played by these key players in mentees' training are outlined in **Table 1** below. These roles are presented in a descriptive manner, as an individual may fulfil multiple functions.

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Table 1: Roles in training of mentees and supporting roles

Role	Supervisor	Mentor	Referee	Mentee
Function	• Supervises work of the mentee, directly or through an intermediary. • Takes responsibility for engineering work / activities / projects. • Supports mentee accelerated / fast-tracked career growth.	• Guides and facilitates the professional development of the mentee, and guides timing and preparation of application for registration. • Evaluates and advises on the mentee's identified list of industry projects that will better fit for exposure and experience to meet the ECSA competencies and outcomes. • Takes ownership of the training and mentoring programme via a signed mentor–mentee agreement. • Continuously reviews and rates mentee's progress using the *Effective Mentoring Programme Tracker / Tool*	• Gives opinion of applicant's competency against standards and integrity from knowledge of mentee's work performance, gives opinion of competency against standards and integrity. • Must have knowledge of the mentee's professional competencies over a reasonable period of time extending to sufficient duration as aligned with the professional descriptors.	• Takes ownership of the training and mentoring programme. • Keeps consistent records across the various periods and modes of training; if possible, retains the same mentor if the employer or mode of training changes. • Takes responsibility to achieve competence in the set of 11 outcomes at the level defined within complex / broadly defined / well-defined engineering activities with the guidance of the Supervisor and Mentor.

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Role	Supervisor	Mentor	Referee	Mentee
Reporting	Signs training reports (TEOs & TERs).	Together with mentee, signs mentor–mentee agreement. Updates mentoring programme.	Completes and signs Referee reports.	Completes TEOs & TERs. Signs complete mentor–mentee agreement. Updates Mentoring Programme Tracker.
Registration*	Supervisor registered in terms of s18(4) of the EPA. Intermediaries Preferably registered.	Must be registered.	Must be registered. See **Table 2**.	
Location	Employer organisation.	Employer organisation or external.	Employer organisation or external.	
Multiple roles	An individual may fulfil more than one role.			
* Registration of mentors, supervisors, referees in the category of the mentee unless otherwise agreed by ECSA				**Includes candidate & applicants*

2.2 Mentee

A mentee is a trainee, prospective applicant or candidate seeking guidance and support from an experienced registered professional practitioner (i.e., mentor) while working towards ECSA registration as an engineering professional. The roles of a mentee or protégé include but are not limited to the following:

- Being familiar with the latest ECSA *Policy* (**R-01-POL-SC**), *Competency Standards* (**R-02-STA-SC**), *Guide to Competency Standard* (**R-08-CS-GUIDE-SC**) and *Guide to Sub-discipline specific Competency Standard* (**R-05-XXX-SC**), etc.

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- Identifying an ECSA professional registered person to be the mentor, compile mentor–mentee agreement, acceptance and signing with mentor. The ECSA website has a list of mentors that may be considered by a mentee.
- Setting goals that align with the objectives of the training and mentorship programme and collaborating with mentor to establish SMART goals for professional development using an effective training and mentoring programme, process, tool or technique that meets the mentee's needs.
- Identifying industry projects the mentee will discuss with the mentor in search of a tailored exposure and experience that will help meet the ECSA competencies and outcomes.
- Activity tracking progress in accordance with ECSA competencies and outcomes.
- Working with mentor to seek resources for learning, identifying people and information that might be useful.
- Sharing with the mentor identifying skills, knowledge and/or goals the mentee aims to achieve.
- If the mentor is not the mentee's supervisor, mentees communicate the mentor-mentee agreement with their supervisors to ensure the work assigned to the mentees aligns with the objectives outlined in the training and mentoring programme and engineering work / activities / tasks / project.
- Actively engaging in the learning process, demonstrating a genuine commitment to engineering work / activities / tasks / project.
- Actively engaging in the learning process, demonstrating a genuine commitment to improving skills and knowledge.
- Maintaining open and effective communication with the mentor. This includes being receptive to feedback, asking questions and seeking clarification when needed.
- Participating in practical experiences and assignments related to the training and mentoring programme and seeking opportunities to apply gained knowledge in real-world scenarios.
- Seeking guidance and advice when facing challenges or uncertainties.
- Tracking activities and progress in accordance with ECSA competencies and outcomes and keeping consistent records across the various periods and modes of training.

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- Taking responsibility to achieve competence in the 11 outcomes at the level descriptor applicable to the registration category defined within the specifically defined engineering work / activities / tasks / projects with the guidance of the supervisor and mentor.
- Developing an Initial Professional Development (IPD) Plan.
- Taking ownership of own learning journey and being proactive in seeking resources, attending training sessions and staying up to date with industry developments.
- Showing respect for the mentor's time, expertise and coaching, as well as maintaining a professional demeanour in all interactions.
- Being open to receiving constructive feedback / critique and using it as a tool for improvement, making efforts to implement suggested changes.

2.3 Mentor

A mentor is an experienced professional practitioner registered in an appropriate category (or in another category, if specifically agreed to by the ECSA in the particular case), who is willing to share with a mentee valuable knowledge about their own career path in a particular engineering specified category / level descriptor.

The mentor’s responsibility is to guide, coach and facilitate the professional development of the mentee. In agreeing to assist a mentee, the mentor commits to the following:

1. Participate in the planning and advising on the suitability of the training and mentoring programme process as part of the mentee’s training and experience.

2. Evaluate and advise on the mentee’s identified list of industry projects that will better fit for exposure and experience to meet the ECSA competencies and outcomes.

3. Plan training tasks and Degree of Responsibility (DoR) Levels to ensure that the mentee develops the competency required for registration in the applicable category.

4. Ensure the mentee is increasingly exposed to problem solving, management, risk assessment and impact with a mitigation plan, in addition to ethical issues, judgement and responsibility.

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5. Provide an oversight role of supporting and monitoring the mentee's completion of training and mentoring programme as agreed.

6. Review the outcomes achieved in view of the set objectives as presented in a report prepared by the mentee on completion of each agreed task or DoR Level.

7. Assist mentees in deciding when they are ready to apply for registration and thereafter, assisting with the application.

The responsibilities of a mentor include but are not limited to the following:

- Being familiar with the latest ECSA *Policy* (**R-01-POL-SC**), *Competency Standards* (**R-02-STA-SC**), *Guide to Competency Standard* (**R-08-CS-GUIDE-SC**) and *Guide to Sub discipline specific Competency Standard* (**R-05-XXX-SC**), etc.
- Agreeing to transfer valuable information to the mentee for the application process by signing a mentor–mentee agreement.
- Providing guidance on developing relevant working skills to achieve progression in levels of responsibility in engineering work activities / tasks / project and DoR as defined in this document's **Table 1** and ensuring that progress is reviewed and tracked.
- Aligning the mentee's professional development training and mentoring plan with an activity schedule tracking progress during the road to registration to achieve ECSA competencies and outcomes.
- Assisting the mentee to identify relevant industry projects that can facilitate development of competence for the mentee project list to gain experience and career growth on.
- Reviewing and advising the Mentee during the preparation of the IPD Plan.
- Providing the mentee with support and motivation.
- Advising the mentee on navigating the engineering industry ecosystem and networking to gain more experience and valuable source of knowledge for preparation to meeting engineering professional competency outcomes.
- Providing constructive feedback and unbiased opinion to the mentee.

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External Mentor

Should the services of an internal Mentor not be available within the organisation where the Mentee is working, the employer may use the services of an external ECSA Professional Registered Mentor through one of the relevant engineering institutions/institutes/bodies. The appointed External Mentors should therefore be accommodating of limitations that the Employer may set in the given situation.

2.4 Supervisor

Supervisors are responsible for overseeing and guiding the work of a Mentee. They provide mentorship, guidance and oversight to engineering practitioners in training as they work towards achieving their professional registration.

Supervisors direct and control the engineering work / activities / tasks / projects of the Mentee and take responsibility for the work in terms of section 18(4) of the EPA. In accordance with document **R-11-PRO-PC**, supervision that is not direct must be performed on an adequately informed base. Intermediaries between the Mentee and the Supervisor should preferably be professionally registered but if they are not, they must have adequate engineering competence. The Supervisor, together with the Mentor and Mentee, is expected to plan the training tasks to develop the Mentee's competence and thereafter monitor and review the achievements from each task.

Although ECSA prefers Mentors to be registered, a Supervisor does not have to be professionally registered.

Supervisor as a Mentor

A Supervisor who is professionally registered may also fulfil the role of a Mentor.

2.5 Candidate

A Candidate is a person who is registered in terms of section 19(2)(b) of Act 46, 2000. It is the Candidate's responsibility to ensure that the training received will culminate in the competency defined in the ECSA standards. The ECSA places emphasis on Candidates training under a

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professional registered Mentor and following a training programme under a structured training and mentoring programme that has been professionally registered as recommended by the ECSA in this document.

ECSA recommends that the Mentee registers as a Candidate in the relevant category in the early stage of the training process, preferably after graduation from an accredited or recognised educational programme. As discussed in section 6.2, which explains the registration process and Training and Mentoring Programme Process Stage 2, there are different routes of applying for registration so any Mentee can follow the training and mentoring programme. Refer to Document, **R-11-PRO** for detail on the Candidate training process under Commitment and Undertaking (C&U).

2.6 Referee

Referees are professional registered persons with first-hand experience of the mentee's engineering activities, particularly those that are indicative of the mentee's professional competency. Referees assess the mentee's competence as a professional and can confidently attest to their ethical analysis. The eligibility and preferred capacity of referees for mentees in various categories are shown in **Table 2**.

Through the *Referee Report*, referees provide the ECSA with their evaluation of a mentee's experience and capabilities based on their personal knowledge thereof. A referee must have knowledge of the mentee's professional competency over a reasonable period of time. referees can be a mentor, a colleague at a higher / senior or the same level involved in mentee's work, an immediate or indirect supervisor, an employer or client with personal knowledge of the mentee's professional performance and engineering experience. Referees must be registered with ECSA as a professional in the relevant category / descriptor. If a mentee has been trained under a C&U, one of the referees must be from a mentor who is registered against the C&U.

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Table 2: Referee requirements

Category	Number	Registration	Type of relations an applicant may obtain referees from
All Specified Categories	2	• Specified Category Practitioner • Engineer • Technologist • Certificated Engineer • Technician	• Mentor • Immediate supervisor • Indirect supervisor • Employer • Colleague at a higher level involved with applicant's work (not more than 1 out of 2 referees). • Colleague at a higher level not directly involved with applicant's work (not more than 1 out of 2

2.7 Mentee distinctive responsibilities of a mentor, mentee and supervisor

To meet Professional Competency Standards, an effective structured training and mentoring programme is vital, whereby a Mentor must have a distinctive role to play in the training and mentoring programme compared to the influential role of the Mentee's supervisor.

Characteristics of a mentor and benefits received by a mentee

A number of measures can be taken to ensure that the Mentee benefits from the effective training and mentoring programme to ensure the Mentor matches the required characteristics.

A Mentor's characteristics include but are not limited to:

- integrity, to ensure mentee that information will be confidential
- showing genuine interest in their protégé / mentee as a person
- sharing experience and insights (i.e., knowledge)
- asking open questions to encourage reflections (support)
- offering positive (constructive) feedback / critique (i.e., coaching)
- offering solicited advice (i.e., coaching & guidance)
- celebrating and acknowledging achievements (i.e., success).

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Mentee benefits include, but are not limited to:

- improved confidence
- increased motivation
- gaining experience and insights
- new perspective & knowledge
- learning from constructive feedback / critique
- fast tracked learning
- celebrating professional registration timely.

3. TRAINING AND EXPERIENCE

3.1 Process for mentoring as part of training and experience

Training is the process of attaining specific practical knowledge, skills, attitudes and values under the direction of competent persons / professionals. Training may be supported by formal courses and other learning activities.

Experience is the process of gaining competence by active involvement in the work environment. A major part of training involves Mentees spending time doing hands-on engineering work / activities / tasks / project to obtain proficiency, knowledge and skills to gain skill in a real-life working environment.

The process of training and experience generally consists of phases or substantial tasks that form convenient units for planning the training and assessing performance. The objective of training and experience is to develop competence as specified by the outcomes in the standard and the required level of performance.

3.2 Overview of competency outcomes for professional registration

The outcomes required for professional registration as outlined in the Competency Standard, document **R-02-STA-SC**, are summarised in Section **5.1**. The goal for training and experience is for the professional engineering practitioner's competence to be more than satisfying a linear list of outcomes. Section **5.2** summarises and groups the competencies that must be

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demonstrated in the assessment process when the mentee/applicant applies for registration. **Figure 2** presents the visualisation of how the set of 11 outcomes that are evidence of engineering competence and interconnected.

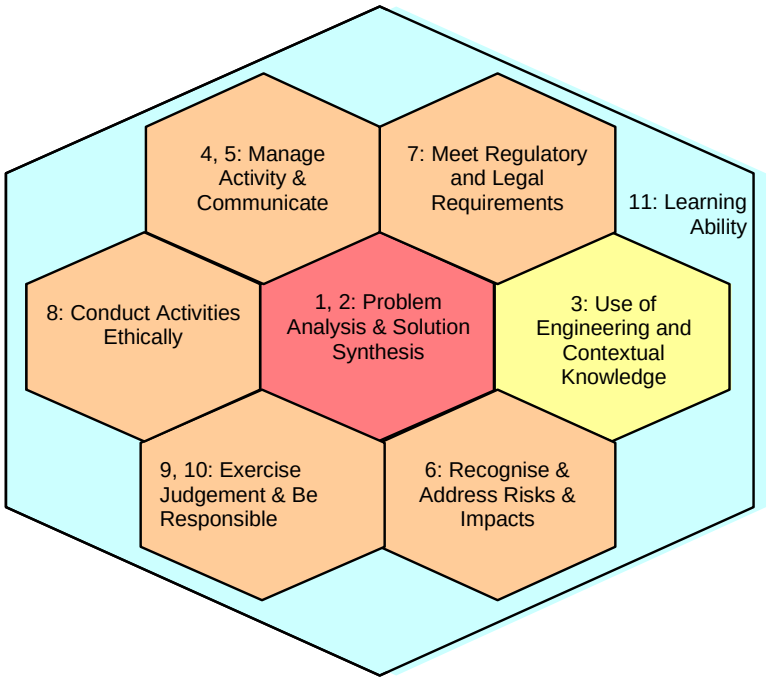

Figure 2: Interconnectedness of the outcomes that evidence engineering competence

Details on Competency Outcomes Requirements for each professional registration in specified category from Groups A to E can be found in document, **R-08-CS-SC**. The Competency Standards documents, **R-02-STA-SC**, describe the outcomes not as stand-alone elements but as performance of the outcomes that must be integrated successfully.

As depicted in **Figure 2**, problem-solving (analysis and synthesis) is seen in the central position, with competencies represented by other outcomes as supporting roles. The core activity of engineering is problem-solving, i.e., bringing about change from an initial state to a final state and overcoming the barriers involved to achieve a result that is useful to people, enterprises and society. During this process, knowledge based on Engineering Science and principles / methods / techniques is applied while accounting for the impacts of engineering activities, the legal and regulatory factors, and ethics. Responsible, judgement-based decision-making and

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management of the process are essential to achieve the engineering goals. Competent engineering practitioners underpin their activities by continuous learning, both formally and informally.

Problem solving also refers to the systematic process of identifying, analysing and finding solutions to technical challenges and issues encountered in the field of engineering. It is a fundamental aspect of engineering practice and is crucial for designing, developing and maintaining various systems, products, and processes. Some key elements of problem solving involve problem identification, analysis and understanding of the problem's underlying principles and factors, generation of alternative solutions that vary in terms of feasibility, safety, cost-effectiveness, legal and regulatory requirements, and ethics and performance evaluation. The most suitable option is selected through a process of responsible, judgement-based decision-making and management of the process. Designs are conducted using engineering knowledge and principles to produce engineering drawings, plans, specifications and processes.

Problem solving further involves testing and validation to ensure that the chosen solution meets the desired specifications and performance criteria.

3.3 ECSA documents defining the registration system

ECSA's registration system is defined in various documents, namely policies, standards and supporting documents. This document is a guide for persons who aspire to register as a candidate or a professional and who wish to apply for registration. The main applicable documents and their relationships are shown in **Figure 1**.

The registration policy applicable to all categories of registration and to all applicants who are proceeding by different routes is defined in the ECSA documents **R-01-POL-SC**. This policy governs the registration of professionals in specified categories and the corresponding candidate categories.

The competency standard applicable to the category must be consulted; these documents define the outcomes that applicants must demonstrate for registration and the level at which applicants must perform (documents **R-02-STA-SC**).

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The procedures for processing the registration applications of candidates and professionals are contained in document **R-03-PRO-SC**.

This training and mentoring guideline (document **R-04-T&M-GUIDE-SC)** provides guidance for persons who perform critical work of an engineering nature that has a direct impact on public safety and health but who are not registered as a professional.

Further guidelines for persons proceeding to registration in professional categories are available in documents **R-08-CS-GUIDE-SC**.

4. DEVELOPMENT PROCESS AND MENTORING STAGES OF ENGINEERING PROFESSIONALS

The development of professional engineering practitioners has three main stages (see **Figure** 3) namely:

- **Stage 1: ECSA Accredited Programme and DHET endorsed programmes per category** – Meeting standard for engineering education
- **Stage 2: Training and Experience** – Meeting professional competency requirements for registration
- **Stage 3: Practice** – Maintaining competency through Continuing Professional Development (CPD) and observing the code of conduct.

This *Training and Mentoring Guide* applies to Stage 2 of the development of a specified category, where professional competency is developed after graduation with an accredited or recognised qualification and before application for registration as a professional in an applicable category.

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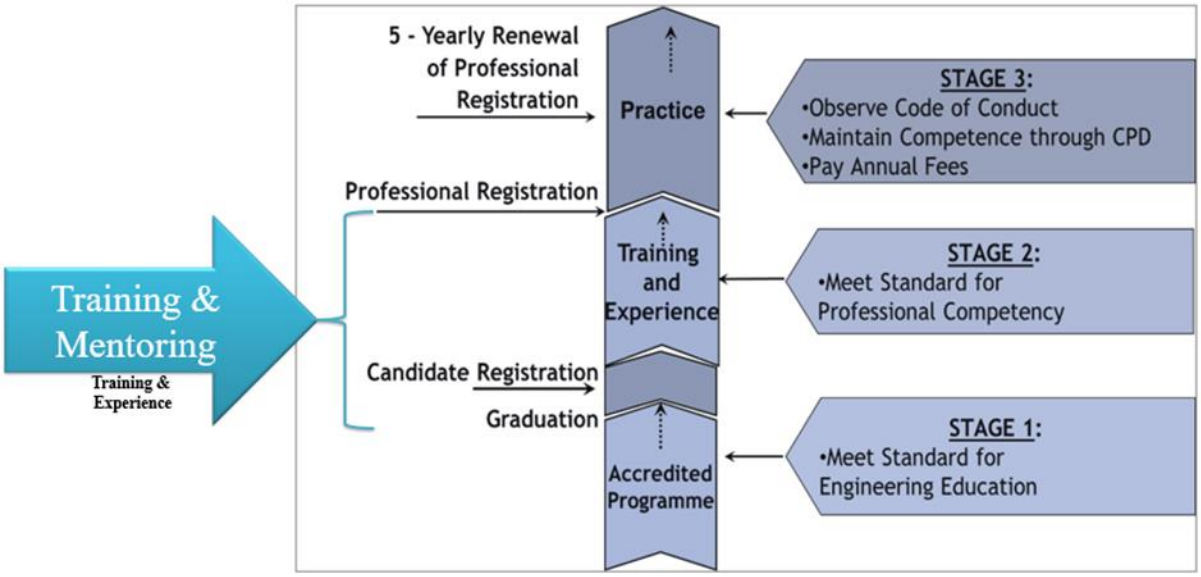

Figure 3: Engineering professional development stages

During **Stage 1**, a student/undergraduate undergoes training to meet the engineering educational requirements of an ECSA accredited programme or qualification. This is the first critical stage towards the development of the competency necessary for registration as a professional. Registration as a candidate in the relevant category is recommended after graduation (completion of Stage 1).

During **Stage 2**, a graduate begins gaining experience and develops competence by participating in engineering projects with a gradual increase in DoR. A programme of training and experience called a ***Training and Mentoring Programme*** is developed to guide the mentee through the relevant training and experience while achieving the required DoR levels. Although registration as a candidate is optional, training through a structured training programme is strongly advised as a method of developing competencies for registration. This document proposes a **Training and Mentoring Programme Process** aimed at guiding the mentees or applicants to meet the professional competency requirements for registration in Stage 2 of the development.

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During **Stage 3**, the engineering practitioner is now registered as a professional under a particular category. The requirement in this stage is that competency is maintained through CPD, and both the ECSA Code of Conduct and the Code of Practice are observed. Registered professionals pay annual fees, and renewal of professional registration occurs every 5 years.

5. SPECIFIED CATEGORY PRACTITIONER COMPETENCY AND COMPETENCY STANDARD FOR REGISTRATION

Specified category practitioner competence means having the attributes necessary to perform the activities within the profession to the standards expected in independent employment or practice. The ECSA registration process uses a competency-based approach to registration. EPA section 192(a)(1) stipulates that the ECSA '*must register applicants in a professional category who have demonstrated competency against standards determined by the Council for the category'.* This statement embodies the notion of standards of competency and demonstration of competency.

5.1 Competency standard definition

The competence of an engineering specified category practitioner is defined as having the necessary attributes to perform the activities within the category to the standards expected. The standard of competency, or simply the competency standard, defines the outcomes that a person must achieve. To be declared competent to register in a category, the outcomes must be achieved at the level stated. Eleven outcomes are defined, and these are conveniently grouped in five sets.

Group A: Engineering problem solving

- **Outcome 1:** Define, investigate and analyse specifically defined engineering problems (tasks).
- **Outcome 2:** Design, develop, plan or practise solutions to specifically defined engineering problems (tasks).

- **Outcome 3:** Comprehend and apply knowledge embodied in established specific engineering practices and knowledge specific to the field and scope in which he/she practises.

Group B: Manage engineering activities

- **Outcome 4:** Manage part or all of one or more specifically defined engineering activities.
- **Outcome 5:** Communicate clearly with others in the course of specifically defined engineering activities.

Group C: Impacts of Engineering Activity

- **Outcome 6:** Recognise the foreseeable social, cultural, environmental and sustainability effects of specifically defined engineering activities generally.
- **Outcome 7:** Meet all legal and regulatory requirements, protect the health and safety of persons and adhere to sustainable practices during specifically defined engineering activities.

Group D: Act ethically, exercise judgement and take responsibility

- **Outcome 8:** Conduct engineering activities ethically.
- **Outcome 9:** Exercise sound judgement in the course of specifically defined engineering activities.
- **Outcome 10:** Be responsible for making decisions on part or all of one or more specifically defined engineering activities.

Group E: Continuing professional development

- **Outcome 11:** Undertake independent learning activities sufficient to maintain and extend his or her competence.

Outcomes 1 and 2 require a level descriptor for the level of *problem solving*. This descriptor considers the knowledge required for analysis and design or development of solutions, the

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degree to which the problem is defined, factors that may make the solution difficult and the uncertainty and consequences of the problem and solution.

Outcomes 4, 6, 7, 9 and 10 require a level descriptor for the demands of the engineering activity for the relevant category. The competency indicators and range statements for all 11 outcomes for all the practitioner categories per level descriptor are defined in the competency standards **R-02-STA-SC**.

5.2 Demonstration of competency

According to **Figure 3**, the first stage towards demonstrating competency is the attainment of an educational qualification; this is an important foundation. During the training and experience phase, candidates progressively perform more demanding work and assume more responsibility. At Stage 2, mentees should be working at the level expected of a person who has newly graduated but is still under the supervision and control of a registered person.

While working at Stage 2, mentees undertake work that requires problem analysis and solution, accounting for impacts and regulation, managing processes to ensure that the engineering goals are met, behaving ethically, exercising judgement in decision-making, with the supervisor taking full responsibility for the work completed. Effective performance of this work is therefore evidence of competence. The mentee as an applicant must document this evidence for the registration application and must undergo documentary interactive assessment by a registered specified category practitioner who will evaluate the demonstrated competency against the defined standards.

Detailed guides are available regarding the competency standards for each specified category as per document **R-02-STA-SC**.

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6. GUIDE TO THE COMPETENCY STANDARDS FOR REGISTRATION IN A SPECIFIED CATEGORY

6.1 The categories for registration in specified category

ECSA is empowered by the Engineering Professions Act, 46 of 2000 to register practitioners in the following subdisciplines.

ECSA is further empowered to register persons as specified category practitioner in various Council approved subdisciplines:

- Lift inspectors
- Lifting machinery inspectors
- Medical equipment maintainers
- Fire protection system practitioner
- Fire protection system inspector
- Civil laboratory technical controller
- Enterprise integration practitioner
- Engineering management practitioner
- Road safety auditor
- Rational designer glazing specialist
- Glazing practitioner.

NOTE: The list will be updated as and when other specified categories are introduced.

6.2 Registration as a candidate

Each specified category and subdiscipline has a corresponding candidate category where the requirement for registration is that the educational requirements for the category must have been met for benchmark route

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Candidate specified category practitioner (see document R-03-PRO-SC)

Registration as a candidate is intended for persons who have completed their engineering education and are training toward registration. Registration as a candidate serves several purposes:

- It signals the person's intent to seek registration.
- It confirms that educational requirements have been met.
- It provides access to mentoring, information and advice.
- It provides the opportunity to incorporate discipline-specific requirements for registration in the training.
- It provides an environment for planning and monitoring the candidate's training and experience.
- It clarifies the position of the as yet unregistered person with respect to performing identified engineering work.

While most candidates are likely to have attained an accredited or recognised qualification, persons proceeding by other routes may find it useful to have formal recognition of meeting the educational requirements as soon as these can be fulfilled. Thereafter, registration as a candidate may benefit the person's training.

In the case of an applicant for registration as a professional or specified category practitioner who is not registered as a candidate, the educational standing of the applicant is evaluated within the registration process.

6.3 Common requirements for all applicants

In terms of Section 19(2)(b) of the EPA and policies laid out in ECSA document **R-01-POL-SC**, to attain registration with ECSA in a professional/specified category, applicants must, demonstrate that they:

- meet the educational requirements for the category
- demonstrate competent performance against the standards laid down for registration in the specified category

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- meet the subdiscipline-specific requirements detailed in the *Subdiscipline-specific Training Guide*, document **R-05-XXX-SC**.

The educational requirements may be met in the following ways:

- Holding an accredited qualification or engineering trade certificate where applicable.
- Holding a qualification or qualifications recognised under an international agreement.
- Holding a qualification or qualifications evaluated by ECSA as being substantially equivalent to an accredited qualification, or
- Being assessed by ECSA against criteria for substantial equivalence to an accredited qualification.

7. MEETING EDUCATIONAL REQUIREMENTS

The educational requirements are defined in the standard for the accredited qualification for specified categories (**E-07-SC**). In the case of recognised and evaluated qualifications, it is Council's policy that substantial rather than exact equivalence is required. Three routes to meeting the educational requirements are available.

7.1 ECSA-accredited qualifications

ECSA accredits engineering education programmes and the attached qualifications as meeting the educational requirements toward registration in candidate specified category and registered specified category practitioners.

Recognition of higher certificates in engineering is subject to confirmation of an acceptable combination of subjects in each case as prescribed by industry and in support of the discipline-specific requirements.

7.2 Educational evaluation

Meeting the educational requirements is the first step toward registration in that category and is the sole requirement for registration in a candidate category. Applicants for registration who do not hold a qualification from an accredited programme or who are not recognised through international agreements must have their educational achievement evaluated.

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ECSA's policy (**R-01-POL-SC**) on specified categories recognises relevant experience which is equated to NQF levels to meet the exact requirements for an ECSA-accredited qualification for the category but they must be substantially equivalent according to the criteria defined in document **E-17-PRO-SC**. Appropriately worded criteria for substantial equivalence of qualifications and individual achievement are defined for specified categories in Table 1 of document **E-17-PRO-SC**. The criteria broadly follow the criteria for the accredited qualification. Criteria that cannot readily be evaluated and that are covered at registration level are omitted.

Two cases are distinguished (numbered (iii) and (iv)) in the policy:

(iii) Holders of *qualifications evaluated* (QE) by ECSA as substantially equivalent to an accredited qualification, from both providers whose quality is known to ECSA, allowing an accelerated verification of the qualification, as well as providers where comprehensive evaluation is necessary.

(iv) Persons who may have partial recognition for qualifications under (iii) and must undergo *individual assessment* (IA) to obtain the balance of their recognition of substantial equivalence. A variety of individual assessment processes are proposed for different purposes.

Processes for evaluation of qualifications (case (iii)) and assessment of individuals (case (iv)) are clearly demarcated and well-coordinated. The normal sequence is to first treat the application for qualifications evaluation. If an applicant's qualification does not meet all the criteria for substantial equivalence, individual assessment is invoked, with or without additional learning. This deals with most applicants requiring educational evaluation.

Where an applicant's qualifications do not meet criteria defined in **E-17-PRO-SC**, examinations appropriate to each category of registration may be used to fulfil requirements:

- *Engineering Fundamentals*, at the category level, examines knowledge in engineering fundamentals relevant to broad disciplinary groupings, with embedded assessment of essential mathematics and natural science underpinning fundamentals (Criteria 1.1 and 1.2).

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- *Specialist Engineering Sciences*, at the category level, evidenced by writing and passing a specified number of examinations at the exit level of an accredited qualification offered by an education provider whose programmes are accredited by ECSA for the category (Criteria 1.3 and 2).
- *Engineer in Society Essay Test* that assesses contextual knowledge (Criteria 7 and 8) and Communications (Criterion 6).

The remaining criteria (4 and 5) may be satisfied through a recognition of prior or workplace learning via design or investigation/research portfolios. A supporting document provides an overview of methods for meeting the educational requirements by methods (iii) and (iv).

This process is essentially an advisory service. There is no concept of refusal to recognise. Rather the applicant is advised of the criteria that have been satisfied for individual categories. Reasons for non-compliance with individual criteria are given. The applicant may provide further evidence, undertake further learning or undergo further assessment until the requirements for the category are fulfilled.

8. TRAINING THROUGH A CANDIDACY PROGRAMME

A candidacy programme normally commences when the trainee graduates from an accredited or recognised programme, registers as a candidate and enters employment with an employer who is committed to training persons toward registration. Candidacy programmes are typically at least 3 years in duration. The final level of competence must be that defined in the standard for the category.

The objective of the programme is, through training, experience and IPD, to attain the level of competence for registration and through work performance, provide evidence of that competence.

Note: IPD consists of activities identified as meeting the post-registration CPD requirements but carried out before registration.

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8.1 Process development through training and experience

Development through training and experience is the structured process of increasing individual or group skills, knowledge and competencies to improve performance and productivity. It is applied in a variety of contexts, including the workplace, formal or informal education and personal growth through peer learning.

This includes but is not limited to the following:

- **Soft skills:** These include communication, teamwork, leadership, time management and problem-solving abilities. Improving these skills can enhance interpersonal relationships and workplace effectiveness.
- **Technical skills:** These are specific to a particular job or industry, such as engineering work of a respective special category. Continuous learning and keeping up with industry trends and standards are critical.
- **Experience learning through work:** This is often referred to as experiential learning or on-the-job learning, and it involves gaining knowledge, skills and competencies directly in the workplace. This form of learning is practical and hands-on, allowing individuals to develop real-world experience and understanding that is often more difficult to acquire through formal education alone.

A graduate in training contracted with an employer (Training Academy) should register as a candidate in the relevant category as early as possible under the mentorship of a registered person.

The process of training and experience generally consists of phases or substantial tasks that form convenient units for planning the training and assessing performance.

Table 3

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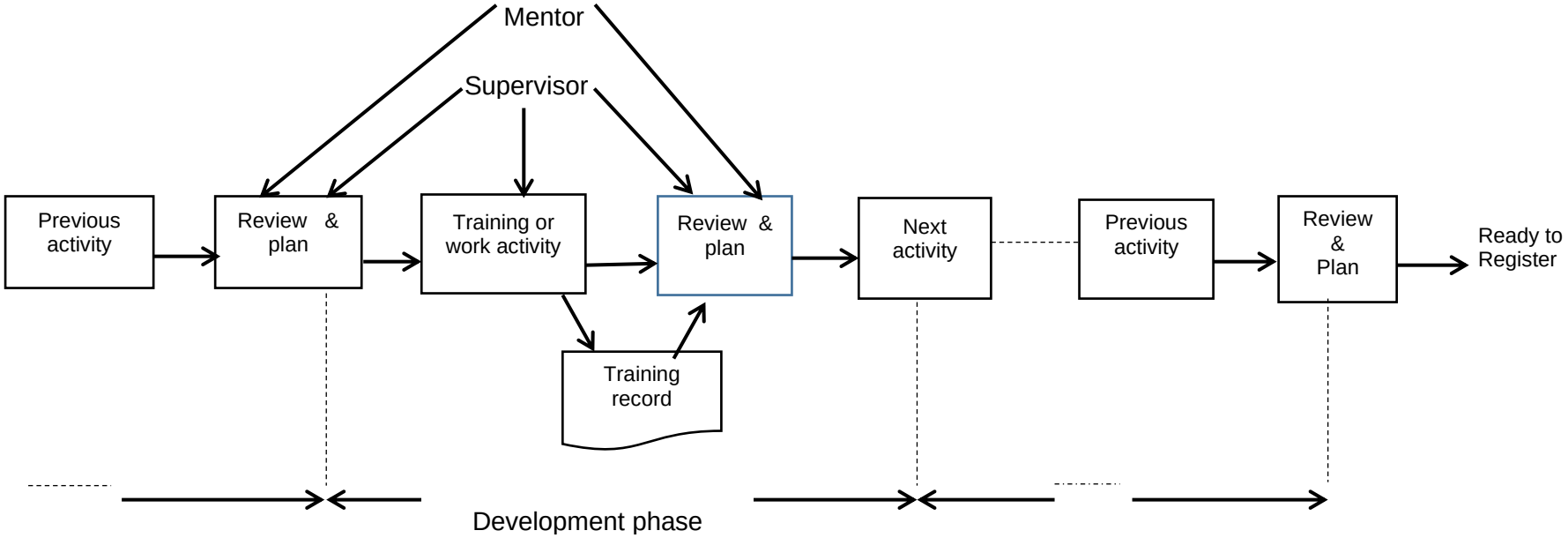

Figure 4: Main elements of the professional development process through a candidacy programme.

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8.2 Referee requirements

The referee requirements are as specified in **Table 2**.

8.3 Planning and managing the candidacy process

This section examines various things that would be of interest to someone who has committed to training toward registration in a specified category:

8.3.1 Types of programmes

These guidelines apply to candidates proceeding via candidacy programme. It is recognised that an individual candidate may experience a combination of training in and outside of a candidacy programme and that training may be carried out with different employers. The end result must always be the same: being able to perform at the level of competency, including the ability to be responsible for work performed, required for registration in the chosen subcategory. Mixed-mode training requires extra planning and management effort on the part of supervisors, mentors and the candidate. Three measures are recommended:

- The candidate's record keeping must be consistent across the various periods and modes of training.
- The candidate should, if possible, retain the same mentor if the employer or mode of training changes.
- In the final analysis, the candidate must take ownership of the training and negotiate with employers to ensure that the necessary competencies are attained.

8.3.2 Duration

The purpose of a training programme is to allow a person who has fulfilled the educational outcomes to attain the competence required for registration. It is unlikely that this competency can be developed in less than 3 years and demonstrated at the required level. **R-01-POL-SC** sets a minimum of 3 years of training and experience. During this period, the candidate's competency develops and must be demonstrated at the required level over a period. Mentors, candidates and employers must plan for a period of not less than 3 years.

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8.3.3 Planning principles

Supervisors and mentors must follow three principles when planning a candidate's training:

1. The planning, execution and monitoring must focus on the competencies to be developed.
2. A variety of work activities is necessary for the proper development of a candidate. The object of having a variety of work is to broaden the candidate's experience and to ensure that all aspects of competency are developed and ultimately assessed. Variety may be obtained in different ways, singly or in combination:
    - The engineering activities of an individual are located at various stages in the lifecycle of an engineering activity: conception, planning, design (develop), construction/implementation/execution, operation and withdrawal.
    - Associated with this lifecycle are specific functions including commissioning, testing, improving and troubleshooting. The candidate should experience several stages in the lifecycle of a project or projects.
    - Variety may also involve different aspects of a discipline (or cross-disciplinary fields) The *Discipline-specific Training Requirements and Guidelines* give indications of acceptable variety of experience in different disciplines and may enlarge on training aspects appropriate to the discipline.
3. Increasing responsibility and accountability within the organisation must be imposed on and accepted by candidates until they are capable of accepting responsibility in making and executing engineering decisions at full registration level. The defined descriptors in Table 3 should be used to quantify the DoR.

8.3.4 Progression of training programme

During development from the graduate level to meeting the competency requirements for registration, candidates progress through levels of work capability until the required level for registration is attained. A useful scale of achievement over a candidacy programme is shown in **Table 3**. At each of the five degrees of responsibility, the table shows the nature of the candidate's work, ranging from being oriented in the engineering environment at degree A, to working at the DoR required for registration, namely E or Performing. The responsibility that

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should be placed on the candidate at each stage is in terms of the candidate's own responsibility and the extent of supervision and mentoring support.

More detailed information on progression – that is how this general definition would map into particular disciplinary contexts – may be included in the discipline-specific training requirements.

The main learning process is through working with competent engineering personnel. The trainee is under the direct or indirect supervision of an engineering practitioner. A mentor guides the trainee's development. The candidate is involved in engineering work of adequate variety and increasing demand and responsibility. The candidate first *assists* with engineering work, doing defined tasks under close supervision. The candidate progresses to making contributions individually and as a team member to the work. By the end of the training period, the candidate must perform individually and as a team member at the level of problem-solving and engineering activity required for registration and exhibit degree of responsibility Level E. This level of work provides evidence of competency against the standards. Over time, the emphasis on *training*, that is, learning through inputs of others, gives way to learning by doing engineering work and reflecting on observations and achievements, i.e., *experience.*

Table 3: Progression throughout the candidacy period

Degree of responsibility	Nature of work: the candidate	Responsibility of candidate to supervisor	Extent of supervisor/ mentor support
A: Being Exposed	Undergoes induction, observes processes, work of competent practitioners.	No responsibility, except to pay attention.	Mentor explains challenges and forms of solution.
B: Assisting	Performs specific processes under close direct supervision of the mentor.	Limited responsibility for work output, but mentor is accountable.	Supervisor/Mentor coaches, offers feedback.
C: Participating	Performs specific processes as directed with limited supervision by the mentor but under close direct observation of the mentor.	Full responsibility for supervised work, but the mentor is accountable.	Supervisor progressively reduces support but remains under the close direct supervision of the mentor.

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Degree of responsibility	Nature of work: the candidate	Responsibility of candidate to supervisor	Extent of supervisor/ mentor support
D: Contributing	Performs specific work with detailed approval of work outputs under the close direct observation of the mentor.	Full responsibility to supervisor for immediate quality of work, but mentor is accountable.	Candidate articulates own reasoning and compares it with those of supervisor and mentor.
E: Performing	Works in team without supervision, under the direct observation of the mentor.	Level of responsibility to supervisor is appropriate to a registered person; i.e., they are responsible but not accountable.	Candidate takes on problem solving without support, at most limited guidance,

8.3.5 Documenting training and experience

Phase-by-phase planning and review of the candidate's training must be supported by documentation, both for the immediate purpose of managing training and for compiling evidence when the candidate comes to apply for registration.

Training and experience are generally arranged in discrete activities, tasks or phases as shown in

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Figure 4: Main elements of the professional development process through a candidacy programme.

. Each phase of activity is designed to develop specific aspects of competency (outcomes) at an agreed level of problem-solving and engineering activity with an appropriate DoR. Such a unit typically ranges from several weeks to several months in duration. For each task or phase, the candidate, together with the supervisor and mentor, should use a suitable format for recording the planned outcomes and level to be achieved and the results of the previous phase. A suitable template is, for example, the Training and Experience Report (TER) form for specified category applicants. This form allows particular aspects of competency to be identified as being amenable to development in this task or phase. In addition, the level at which competency is to be demonstrated is identified as well as the nature of the candidate's responsibility.

When the task or phase is complete, the candidate, supervisor and mentor must assess the level of competence learned and displayed. Level descriptors for problem solving and the demands of engineering work should be consulted to determine progress to the exit level. Such achievement (or shortfall) may influence the planning for subsequent tasks or phases. This assessment is also recorded on the TER form. The assessment at the end of one phase should form an input to the planning of the next or future phases. The process continues until the candidate is working at the level required for registration against individual outcomes and as a whole.

When the candidate applies for registration, each task or phase must be summarised in the Training and Experience Summary (TES) document and reported in a TER. Each activity is described in company and generic terms. Company terms include the names of specific plants, processes, sites etc. while generic descriptions would include terms such as design (development), trouble shooting, construction and commissioning. The TES and TER are required in the application for registration. It is therefore advisable for the candidate to complete the TER and update the TES at the same time.

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As the programme progresses, the candidate's competency must develop towards that required for registration. Supervisors and mentors should be alert to the candidate arriving at this level of competence.

8.4 Demonstrating responsibility

The competency standards require not only the demonstration of technical and engineering management proficiency but also the ability to assume responsibility for engineering decisions. An important outcome that applicants for registration must demonstrate is Learning Outcome 10**,** namely, to be responsible for making decisions on part or all of engineering activities at the level expected for the category. The requirement that candidates demonstrate being able to take responsibility for the engineering work performed requires careful management by the supervisor. This section outlines the legal constraints on candidates taking responsibility for engineering work and ways of allowing candidates to display responsibility.

8.4.1 Legal constraints

A candidate is not allowed under the EPA to take accountability for the work. Various sections of the EPA require registration for particular aspects of work. Section 18(2) requires a person to be registered to be able to practise in a specified 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.

Furthermore, EPA Section 26 provides for the identification of the type of engineering work that may be performed by persons registered in any of the categories, including work that may fall within the scope of any other profession regulated by the Professions' Acts referred to in the Council for the Built Environment Act, 2000. While the regulations identifying engineering work / activities / tasks / projects have not yet been promulgated, they should be used as prudential guidelines for whether particular work falls into the 'identified' category.

Registration as a candidate corresponding to a specified category provides a mechanism for persons to perform work under supervision that would otherwise be reserved for registered persons and thereby demonstrate competency for registration. Such work must be performed

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under the supervision and control of a registered person who must take responsibility for the work.

8.4.2 Managing conflict

Within the training process, it is necessary to manage the conflicting requirements between candidates not being allowed to take responsibility but nevertheless being required to show that they can perform engineering work and take responsibility at registration level.

It is helpful to identify two aspects of responsibility:

- Taking *due care* to ensure that the objectives of engineering work are achieved and that impacts and risks are addressed.
- Addressing impacts of engineering work / activities / tasks / project and risks;
- Being *accountable* for the work, in particular that due care was taken to deal with risks.

Supervisors and mentors must implement strategies to ensure that candidates can demonstrate the ability to exercise *due care* without having to make decisions that require accountability; the supervisor must be accountable. Taking due care requires candidates to exercise the defined competencies: problem solving, management, impact identification and mitigation, ethical behaviour, acting responsibly and applying judgement. Working within the limits of those competencies is a clear requirement. In such a mode of working, candidates would be required by the supervisor to express judgements and propose decisions and recommendations; these may be at the level that a registered person would normally perform. Candidates, while not carrying any legal accountability, are responsible internally within the employer organisation. Supervisors must check the judgements, decisions and recommendations as they bear ultimate accountability for the work.

8.4.3 Diversity of engineering

It is recognised that the scope of engineering is too wide for definitive training guides. Engineering education, training and work is generally partitioned according to disciplines/ subdisciplines as well as industry sectors: consulting, contracting, construction, manufacture, mining, process industries, services, utilities and infrastructure. Within a sector or discipline, an

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engineering practitioner may be concerned with systems, processes, components or materials. The competency standards identify the generic outcomes for competent practitioners, irrespective of discipline or industry sector; for example, identify and analyse problems and synthesise solutions. These represent the fundamental, transferable competencies. Rather than formulating complex requirements for all functions, the system relies on engineering peers for training and assessment. Peers are persons who are engineering practitioners in the same discipline and are registered in the category the candidate aspires to.

8.5 Competency-focused planning and monitoring of candidacy programmes

The objective of training and experience in a candidacy programme is to develop the competencies that must be demonstrated to be registered. Training and work experience must therefore be planned, executed and evaluated to ensure that this goal is attained.

8.5.1 Goals of training and experience

Section 3 summarises and groups the competencies that must be demonstrated in the assessment process when candidates apply for registration. Engineering practitioner competence is more than satisfying a linear list of outcomes. Error! Reference source not found. depicts the interconnectedness of the outcomes that are evidence of engineering competence.

The core activity of engineering is problem-solving, that is, bringing about change from an initial state to final state overcoming barriers on the way to achieve a result useful for people, enterprises or society. Engineering science-based knowledge is brought to bear while taking into account impacts, regulatory factors and ethics. Responsible, judgement-based decision-making and management of the process are essential to achieve the engineering goals. Competent engineering practitioners underpin their activities by learning continually, both formally and informally.

Candidates, supervisors and mentors must focus at all times on the goal of training, namely the development of competence as specified by the outcomes in the relevant standard and the required level of performance viewed in an integrated way. The latter has two principal parts: the *level of engineering activities* within which the candidate operates and the *level of problem-solving*.

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8.5.2 Relating the competency standards to specific work

The generic competencies, problem solving, management, impact analysis and taking responsibility, manifest themselves in particular forms of activity, for example, design (development), investigation, troubleshooting, improvement and research. Each of these forms of activity expands further. For example, design includes the preparation of a brief. At a company-specific level, the functions are performed in relation to specific plant, operations and business activities.

Candidates should think of both the specific requirements of a task or phase of work and in terms of the generic competencies required for the work. For example, the actual work may be troubleshooting poor performance at the No. 4 Acid Plant at the Northern Works. The candidate and colleagues are performing an investigation that may lead to a design review and a redesign of aspects of the plant. Generically, the candidate and colleagues are identifying and analysing problems, synthesising solutions and using their knowledge in the process. They also must examine and deal with regulatory, environmental and economic impacts.

Additional subdiscipline-specific registration requirements for each specified category are detailed in document **R-05-XXX-SC**, where **"XXX"** represents the specific specified category applicable.

8.5.3 Evidence-based system

Evidence of competent performance has two essential requirements: first, a capability to *perform a number of defined actions* must be demonstrated, and second, the performance must be at or exceed a *specified level of demand*. The defined actions are the outcomes and typifying actions that reflect acceptable performance contained in the assessment criteria. The level is defined by a specification for the demands of the engineering activities and the nature of problem-solving. In a specified category field, evidence of competent performance is obtained from the competent performance of specific engineering tasks by the person being assessed. Typical tasks provide evidence of several outcomes and assessment must be holistic.

The 11 outcomes defined for specified category practitioners represent different aspects of holistic performance and specific attributes. The outcomes fall conveniently into five groups: the

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first relates to problem-solving, the next three to engineering practice and specific attributes and the last to the ability to maintain and develop competence.

While competence is specified by 11 outcomes to be demonstrated at a particular level, applicants for registration must demonstrate integrated performance against outcomes. This reflects the reality that an engineering task or function is unlikely to require only one outcome, for example, problem analysis seldom stands alone; it requires the use of knowledge, the analysis of impacts and must lead seamlessly into the solution phase. One possible visualisation for engineering competence is shown in Error! Reference source not found..

Engineering problem-solving, made up of analysis and synthesis is central to all engineering activity including design (development), investigation and management. Problem-solving is supported by a number of capabilities, corresponding to outcomes 3 to 10. Outcome 11, CPD, better expressed as the maintenance and extension of competency, provides a platform for the performance of outcomes 1 to 10.

Different engineering functions and assignments have different demand mixes. Applicants for registration must provide evidence of working at the required level of problem-solving in engineering activities at the specified level of demand as part of the application for registration.

8.6 Advanced study while a candidate

In a competency-based system, a variety of means can be used to enhance competency and present evidence of competency. Advanced study may contribute to learning towards and providing evidence against the registration outcomes (and educational outcomes for persons without accredited or recognised qualifications). For example, design of novel equipment during an advanced certificate may be considered as evidence against problem-solving outcomes 1 and 2. Because the assessment for registration is competency-focused, the previous policy of considering a reduction in the length of the candidacy falls away.

Where credit is sought against a registration-level outcome, the aspect of further study should be documented using a TER form.

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9. ADDITIONAL INFORMATION FOR EXPERIENCED APPLICANTS

9.1 Mature applicants for specified category practitioner registration

Within the category of specified category practitioner registration, documentation requirements differ between applicants with considerable experience after graduation and at the level required for registration and those who do not. Specific documentation requirements for the category are defined in document **R-03-PRO-SC**.

9.2 Process for persons already registered in a professional category

Applicants who are already registered in a professional category and wish to register in a specified category as well must meet both the educational and competency requirements for the specified category. In most cases, for an additional specified category registration, the additional category has less demanding education and competency requirements, but additional subdiscipline-specific registration requirements must be met (refer to the relevant **R-05-XXX-SC**). A person wishing to pursue this route is advised to become familiar with the educational requirements, the specified category competency standards and the subdiscipline-specific requirements for the additional category.

The educational requirements can be met by formal study in an accredited programme or other means. Document **E-17-PRO-SC** defines the criteria for meeting the educational requirements other than accredited or recognised degrees. A supporting document outlines various practical means for meeting the individual criteria. The education requirements may be satisfied at any time before applying for registration.

Specified category practitioner competencies must be developed through work to the level required for the additional category. The level of problem-solving must be adapted to the required level within engineering activities that satisfy the specific level descriptor.

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REVISION HISTORY

+	Revision date	Revision details	Approved by
Concept A	1 November 2015	R-04-P adapted to suit Specified Categories and providing for registration requirements in the SDSTGs. Submitted to JIC for comments on 23 November 2015.	JIC Working Document
Concept B	15 December 2015	Minor editing by JIC members incorporated.	Approved by JIC for submission to TC
Concept C	8 February 2016	Hyperlinks checked.	Finally approved by JIC for submission to TC
Rev 1	24 March 2016	No amendments.	Approved by Council
Rev 2 draft A	01 Sept 2020	Alignment to the Policy and Standards Framework on ECSA Policies. Hyperlinks removed and replaced by table of contents for consistency with other regulatory documents, reference to international agreement removed as ECSA does not have agreement in the specified category space.	Working Group
Rev 2 draft B	21 August 2020	Review by Registration Business Unit	Registration BU
Rev 2	02 Oct 2020	Review by the Executive	EL Nxumalo
Rev 2	15 Oct 2020	Approval	RPSC
Rev. 3 Draft A	03 Sept 2024	The document has been revised to ensure alignment with changes on R-02-STA-SC and R-01-POL-SC and to ensure consistency and seamless training. Section 2 roles and stakeholders have been added to overview of the roles in training and mentoring roles of mentee and mentors to indicate what is expected of external mentors and ECSA professional registered mentors.	RI BU and WG

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+	Revision date	Revision details	Approved by
		The document further indicates the distinctive responsibilities of a mentor, mentee and supervisor. Figure 3 Engineering Professional Development Stages has been added. Table 1: Roles in training of mentees and supporting roles revised and improved.	
Rev. 3 Draft B	03 Sept 2024	Document reviewed with WG and RI BU.	RI BU and WG
Rev. 3 Draft C	11 Sept 2024	Document sent to Registration BU for inputs and comments.	Registration BU
Rev. 3 Draft D	11 Oct 2024	Reviewed and checked.	Executive: RSIR
Rev. 3	23 Oct 2024	Approval.	RPSC

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The Guide for:

Training and Mentoring for Specified Categories

Revision 3 dated 23 October 2024 and consisting 49 pages reviewed for adequacy by the Business Unit Manager and is approved by the Executive: Regulatory Services & International Relations (**ERSIR**).

..... 2 December 2024.....

Business Unit Manager Date

..... 2024/12/02.....

Executive: **RSIR** Date

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

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