

***GUIDELINES FOR
PROFESSIONAL REGISTRATION
of CIVIL ENGINEERS***

Published by the **South African Institution of Civil Engineering (SAICE)**

In collaboration with the **Engineering Council of South Africa (ECSA)**



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SAICE Education and Training Committee
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CONTENTS

	<u>Page</u>
1. DEFINITIONS, TERMINOLOGY AND ABBREVIATIONS	1
2. OVERVIEW OF THE PROCESS AND FLOW CHART	3
3. STAGES OF THE PROCESS AND ACTIONS REQUIRED BY VARIOUS PARTIES	4
4. PRACTICAL TRAINING AND PROFESSIONAL DEVELOPMENT	9
5. CONTINUING PROFESSIONAL DEVELOPMENT (CPD)	11
6. GUIDANCE NOTES FOR PREPARATION OF REPORTS	14
7. ESSAYS	16

Preamble

The Registration Process described in these Guidelines became effective from 1 January 1998. Since this new process incorporates some principles that are new in South Africa, there will be a “settling in” period where finer details of the process may require revision as experience is gained. The principles adopted have, however, been in operation in other countries for some time and have proved successful and effective. A major reason for adopting this new process is to bring the South African processes into line with international trends.

This document as a 3rd Edition, will inevitably require refinement over time. Should you have any comments or suggestions, kindly address them to SAICE National Office at the address given on the flysheet.

These Guidelines, which are recommended to graduate engineers, mentors and reviewers, are to be read in conjunction with the following documents:

Published by the **Engineering Council of South Africa (ECSA)**:

- *Policy Statement R2/1A – Acceptable Engineering Work for Candidate Engineers for Registration as Professional Engineers*
- *Discipline Specific Guidelines: Civil Engineering*
- *ECSA Application Form for Registration as a Professional Engineer*

Published by the **SAICE**:

- *Guidelines for Mentors (Ref. No. - E&T 102)*

1. DEFINITIONS, TERMINOLOGY AND ABBREVIATIONS

The following definitions are given here in order to simplify and clarify the document. As acronyms are extensively used, it is considered useful to have these all in one section.

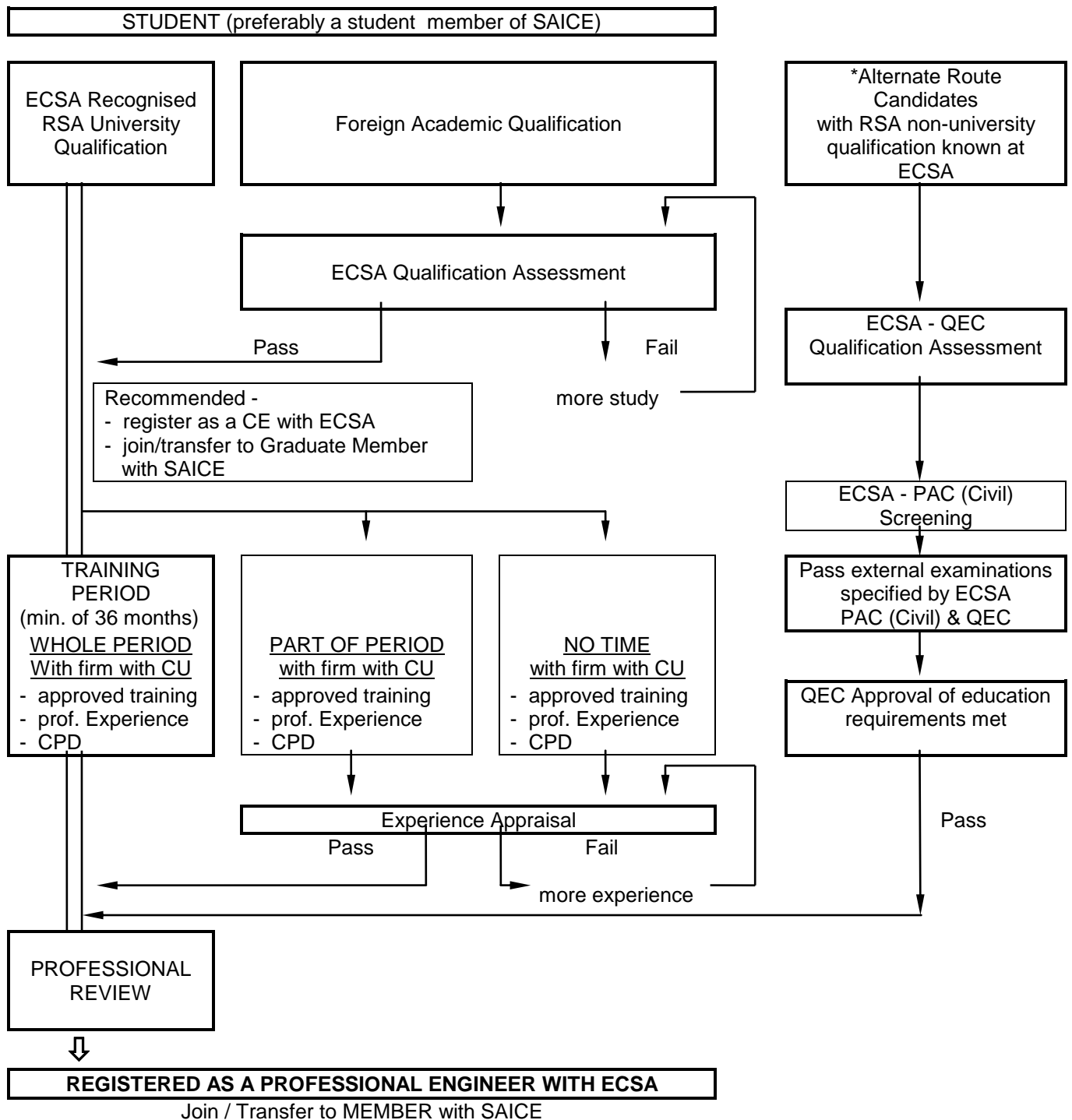
CPD	Continuing Professional Development - This term is preferred to others such as Continuing Engineering Education, Continuing Learning, etc. and may include courses, self-study, technical conferences, seminars, symposia, organised site visits, and meetings of professional bodies.
CPD Logbook	A booklet published by SAICE, which provides a convenient means of recording CPD activities done through a person's whole career.
CU	Commitment and Undertaking , is an agreement registered with ECSA by an employer to assist young engineers (Candidate Engineers) with their training in a structured manner so that ECSA's requirements can be met for registration as a professional engineer.
Candidate	Refers to any person applying to ECSA for registration as a professional engineer, and to SAICE for membership.
Candidate Engineer	Candidate Engineer who is registered as such with ECSA. This term replaces "Engineer-in-training" (EIT).
E&T	Education & Training . Covers a broad spectrum of activities spanning a person's whole career. It comprises career guidance, tertiary education, professional development up to the point of professional registration, and life-long professional development after registration.
EA	Experience Appraisal (described fully in the "Discipline Specific Guidelines: Civil Engineering" and paras 3.7 to 3.9 below)
ECSA	Engineering Council of South Africa
Mentor	<p>A person who guides and advises CEs through their training period to achieve maximum possible professional development and professional registration in the shortest possible time. A Mentor must be registered as a Professional Engineer. There can be Internal and/or External Mentors.</p> <p>An Internal Mentor is a person in the service of, and nominated by, a particular employer, having registered a CU with ECSA, and whose name is listed by ECSA against the particular CU.</p> <p>An External Mentor is a person not in the service of the employer concerned but whose services as a Mentor have been solicited by the employer. His/her name is listed by ECSA against a CU registered by the employer.</p>
PAC (Civils)	Professional Advisory Committee (Civil Engineering) . This is a Committee of ECSA dealing with all the aspects related to setting of standards, processing of applications, and approval or otherwise of applications in the branch of Civil Engineering.

PR	Professional Review (described fully in the “ <i>Discipline Specific Guidelines: Civil Engineering</i> ” and paras 3.10 – 3.15 below)
Referee	<p>Provides an opinion on an CE’s professionalism at any stage during his/her training and is not responsible directly for guiding CEs in their professional development. They should be persons who are well placed to express an opinion without necessarily having a holistic view of the CE's training.</p> <p>A Referee generally <u>must</u> be a Professional Engineer. ECSA requires at least two referees of whom at least one must be a professional engineer and the other one a person registered in terms of the Act (eg. Pr Tech Eng) or foreign equivalents.</p> <p>More information on the roles and responsibilities can be obtained from the “<i>Policy Statement R2/1A</i>” document.</p>
SAICE	South African Institution of Civil Engineering
SCE	Supervising Civil Engineer. This is a person the CE reports to directly and on a daily basis. CEs will probably have several SCEs during their training period as they move from one section of an organisation to another. The SCE need not necessarily be an engineer, but could be a professional technologist or professional technician. The SCE can also be a Mentor and vice versa.
Training Schedule	Schedule given in the “ <i>Discipline Specific Guidelines: Civil Engineering</i> ” published by ECSA (Form AC7). This gives the core elements and competency levels that must be achieved by candidates before they can be considered for registration.
Training Period	This is the period between graduation and application for Professional Registration. This period may not be less than 36 months.

2. OVERVIEW OF THE PROCESS AND FLOW CHART

The diagram below gives an overview of the process. These guidelines and other related documents provide more detail on the various steps in the process.

MAIN ROUTES TO REGISTRATION AS A PROFESSIONAL ENGINEER WITH ECSA AND CORPORATE MEMBERSHIP OF SAICE



* Alternate Route Candidates: This route, which is for RSA non University qualifications known at ECSA, is not detailed in this Guideline, but the basic process is given here. For more details contact ECSA.

3. STAGES OF THE PROCESS AND ACTIONS REQUIRED BY VARIOUS PARTIES

Checklists for CEs, SCEs and Mentors

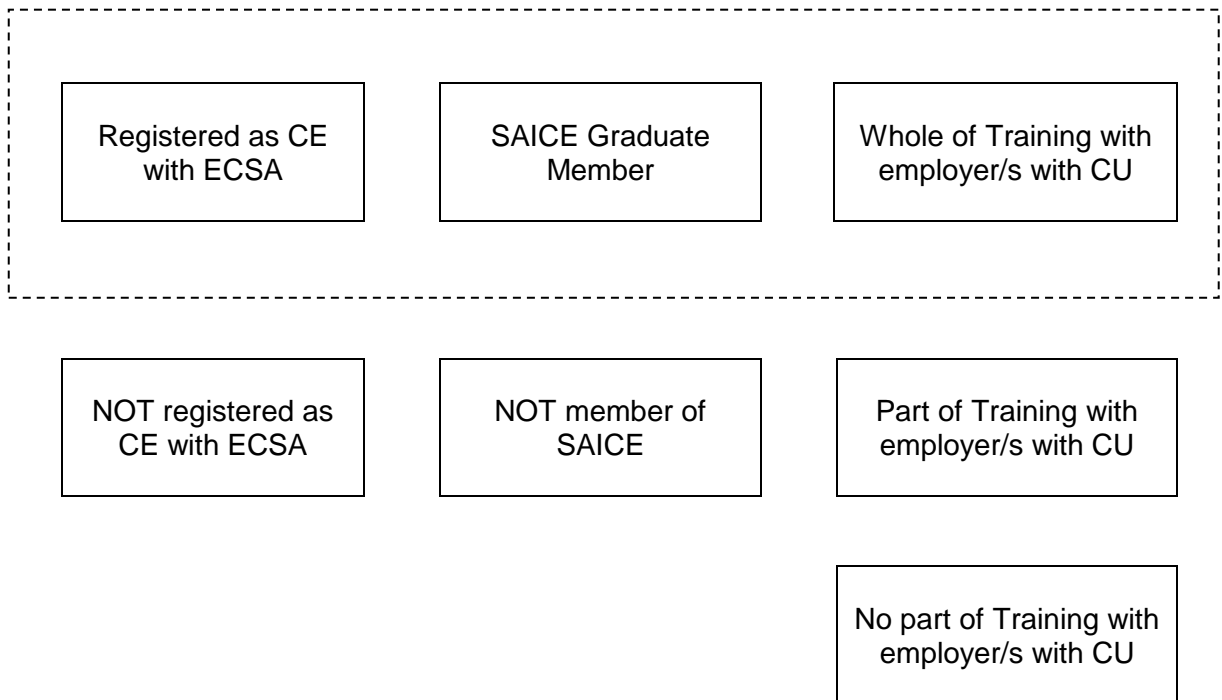
- 3.1 The checklists below provide some guidance on the responsibilities and actions to be taken by the main parties involved. More details regarding the required actions are provided in the sections following the checklists.

These checklists are GUIDES ONLY and should not be seen as exhaustive. It remains the personal responsibility of CEs, SCEs and Mentors to ensure that their individual responsibilities are carried out.

Actions required by the various parties will vary depending on several factors. These factors are

- is the trainee registered with ECSA as a CE or not?,
- is the trainee a member of SAICE or not?, and
- did the trainee obtain training at an employer who registered a CU with ECSA, or not?

These combinations or options can also be shown graphically as follows:



The recommended, and preferred, combination is outlined (in dotted lines), and trainee engineers are encouraged to follow this route. The checklists given below apply to this combination only, as it offers the maximum benefit to candidates. The checklists can be adapted to cater for other combinations and trainee engineers not following the preferred combination must make their own adaptations. Some notes regarding the combinations are:

CE or not - All trainee engineers are encouraged to register with ECSA as CEs. The benefit of registration is that one is kept informed on developments regarding registration and one receives any new information, as it becomes available.

SAICE member or not - All trainee engineers are encouraged to join SAICE. One can join directly as a Graduate Member or if already a Student Member transfer to Graduate Member. Benefits of membership are that one is kept informed on developments regarding registration as well as of the industry in general, and one would receive any new information that becomes available, for example information on courses, seminars, site visits, essay topics for the Professional Review, etc. In addition you would have the opportunity to participate in Branch and Division activities where you could become actively involved and hence would benefit by serving the Institution.

Training under employer(s) with CU - All trainee engineers are encouraged to do their entire training with employers who have registered CUs with ECSA. Mentors play a crucial role in the training process, and in registering a CU, the employer undertakes to ensure their CEs are assigned to a Mentor. CEs are then much better placed to receive the best possible training to register as a professional engineer in the shortest possible time.

CEs working for employers who have NOT signed CUs should take special care, to ensure that they obtain the assistance of a Mentor. If CEs have not had a Mentor for certain periods, and if their training was not well structured, they should be especially careful to ensure that their training actually addresses all the required objectives and achievement levels. They should also ensure that this experience/training is sufficiently documented and substantiated. Applications from these CEs will go through the Experience Appraisal process.

3.1.1 Checklist for CEs

- Identify your Mentor.
- Discuss and agree on a training plan with your Mentor. This plan should include linking it to the Training Schedule as well as CPD activities to be undertaken.
- Ensure your SCE is aware of the plan.
- Initiate regular discussions with your Mentor, and record these on an Interview Record (Form AC8).
- Complete a Training/Experience Report (Form A2.1) on completion of each “training period” (or groupings of periods where work of a similar nature was performed), and get these signed off by your Mentor. (See the Information Sheet A2 for definition of training periods).
- Arrange and undertake CPD as planned. Record each CPD activity undertaken in your CPD logbook and get your Mentor’s approval and signature on completion of each activity.
- Ensure elements in the Training Schedule are monitored regularly and signed off by your Mentor when these are achieved.
- Review your training plan with your Mentor on a regular basis, record progress and any changes.
- In the last year of training, prepare for PR and essays (see §3.16).

3.1.2 Supervising Civil Engineers (SCEs)

(Depending on the circumstances, the SCE could also fulfil the role of a Mentor for CEs who do not have Mentors. Employers with a CU are obliged to provide a Mentor.)

- Where possible assist the CE to acquire a Mentor (internal or external).
- Be aware of the CE’s training plan developed with the help of the Mentor, or assist the CE in developing a plan if no Mentor is available.

- Assist the CE in developing the required levels of competency throughout the training period.
- Liaise with the Mentor as required.

3.1.3 Mentors

- Be aware of your roles and responsibilities as described in the “*Guidelines for Mentors*” published by SAICE.
- Ensure regular discussions with each CE under your supervision. (Although the CE should initiate these discussions, you should follow up with the CE if planned dates are not met).
- Assist and guide each CE in developing his/her own training plan. The plan must link into the Training Schedule and include CPD activities.
- Assist and guide each CE in reviewing his/her training plan throughout the training period to ensure the objectives and achievement levels in the Training Schedule are met.
- Liaise with the various SCEs to ensure the CE is afforded sufficient opportunity to develop the required levels of competency throughout the training period.
- Approve and sign each CE’s training reports, CPD logbook and interview records where appropriate.
- Write reports on each CE as necessary. It is important that a “Referee’s Report” (Form A4.1/2) be completed and returned directly to ECSA when requested by the CE.
- Assist each CE in his/her final stages of training to prepare for the PR and essays.

Transfers of Candidate Engineers

- 3.2 All parties involved with CEs should recognise and appreciate their own professional obligations. Prospective employers of CEs, and CEs themselves, should discuss the prospects of training under a CU at the earliest possible stage, even before a decision (to employ or to accept employment) is made. Employers who have registered a CU will be more likely to attract CEs than otherwise. Once employment has commenced (whether the employer has a CU or not) it is still the CE’s ultimate responsibility to ensure that provision has been made for their own training needs. However, they will have a clear advantage if their new employer has already registered a CU with ECSA, because this confirms that the employer is already committed to proper training. (Information on employers who have signed CUs is available from ECSA or SAICE National Office). If it is at all possible, CEs should attempt to retain the services of their previous mentor(s), especially where the new employer does not have a CU or an internal mentor.

Training Records: Monitoring and Completion

- 3.3 Training records form an essential part of monitoring progress and ensuring that the required competencies and standards are met. Each CE must keep the following training records up to date:
- Training Schedule (Form AC7) - to show progress on objectives and competencies achieved (including certification by the Mentor).

- Interview Record (Form AC8) - to record interviews held with the Mentor during the training period.
- Training/Experience Reports (Form A2.1) and Summary of Training/Experience Reports (Form A2.2) - to record the practical training received and experience gained.
- CPD Logbook - to show details of CPD activities undertaken (including certification by the Mentor).

Application for Registration

- 3.4 When submitting an application, the CE must ensure that all documentation has been completed, failing which, the application will not be considered by ECSA. Remember, this reflects on your professionalism!
- 3.5 More importantly, the CE must ensure that the required levels competence and professionalism for registration have been acquired and are adequately demonstrated in the documentation submitted. The onus remains solely with the CE to demonstrate that the requirements are met.
- 3.6 The documentation required is set out in Section 5.2 of the *"Discipline Specific Guidelines: Civil Engineering"*.

The Experience Appraisal (EA)

- 3.7 An overview of the purpose and process for an EA is covered in some detail in Chapter 7 of the *"Discipline Specific Guidelines: Civil Engineering"*, and is not repeated here.
- 3.8 EAs are applicable to all CEs who have not completed their entire training with employers who have signed a CU.
- 3.9 The EA is done by ECSA, and is essentially a "pre-screening" to assess whether a CE has achieved the required objectives, levels and professionalism necessary to qualify for professional review. It may even be necessary, at the EA stage, to conduct interviews with the CE, but this will not be a substitute for the PR. The decision to hold an interview is entirely at the discretion of ECSA.

The Professional Review (PR)

- 3.10 An overview of the purpose and process relating to a PR is covered in some detail in Chapter 6 of the *"Discipline Specific Guidelines: Civil Engineering"*, and is not repeated here.
- 3.11 Once an applicant is cleared by ECSA for the PR, SAICE will assume responsibility for arranging the PR.

- 3.12 SAICE will advise CEs of the exact date and location of the PR.
- 3.13 SAICE will send copies of all documents making up the application to the Reviewers, which are as follows:
- ECSA Application (Form A1.1 & 2);
 - Certified Copies of all Qualifications;
 - Documents relating to proof of Membership of Institutes;
 - Referee Reports (Form A4.1/2);
 - Training Schedule (Form AC7.1 to 8);
 - Interview Record (Form AC8);
 - Summary of Training/Experience Reports (Form A2.2);
 - Training/Experience Reports (Form A2.1) completed during the training period;
 - 4000 word project report;
 - Pages of the CPD Logbook containing details of CPD done and approved to date.

CEs may take to the PR any additional drawings or calculations relevant to the Project Report that were not included in their submission to ECSA.

- 3.14 PRs are compulsory for all CEs. The general rule is “Nobody registers as a professional engineer (Civil) unless he/she has passed the PR”. This rule also applies to alternate route candidates.
- 3.15 PRs will be held as and when required, generally in the major centres. Additional venues may be arranged, depending upon the availability of Reviewers and the number of candidates in a particular area.
- 3.16 When preparing for the PR, it may be prudent for CEs to form discussion groups and for CEs to arrange briefing sessions by Mentors, or other knowledgeable individuals.
- 3.17 Reviewers will send reports to SAICE for onward transmission to ECSA, and for final decision. ECSA will moderate the PR outcomes, decide and advise CEs of their review results as soon as possible. Under no circumstances will results be given prior to the final decision.
- 3.18 Successful candidates will be registered and a certificate of registration will be issued shortly afterwards. Unsuccessful candidates will be advised of the reasons for their failure and they will be required to repeat the entire PR, or any portion thereof. There is no limit to the number of times a CE may have to sit for a PR.

4. PRACTICAL TRAINING AND PROFESSIONAL DEVELOPMENT

- 4.1 It should by now be clear that each CE is strongly encouraged to undergo training with an employer who has registered a CU with ECSA. Details regarding a CU are given in Chapter 3 of the *“Discipline Specific Guidelines: Civil Engineering”* published by ECSA, as well as in the ECSA documents *“Policy Statement R2/1A”*.

The Training Schedule

- 4.2 The Training Schedule, which is part of the *“Discipline Specific Guidelines: Civil Engineering”* covers two critical development areas for CEs. These areas are Professional Attributes and Technical Competence.

Because of the diversity of Civil Engineering, it is not practical to list all the components of these two areas in which CEs must acquire and demonstrate competence. Critical components are, however, listed in the Training Schedule, which are to be used as guidelines when competence is assessed.

“Professional Attributes” involve an understanding of the ‘Professional Environment’ (critical components given in the Training Schedule), an ability to exercise ‘engineering judgement’, an ability to make ‘responsible decisions’ and to ‘communicate’ lucidly and accurately.

“Technical Competence” is described in more detail in the Training Schedule which covers the components ‘Developing an Engineering Brief’, ‘Designing a Solution’, ‘Documentation’ and ‘Implementation’. These components are intended to guide and assess the development of the CE’s ability to apply his/her academic knowledge and subsequent training to the solution of practical civil engineering problems of some complexity.

The Training Schedule is intended to provide the basis for more comprehensive in-house training programmes so that each CE achieves the level of competence required for registration. The schedule has been devised so that persons tending to specialize are catered for as well as those undertaking a more general career in civil engineering, and training programmes should follow this same approach.

- 4.3 The components have been selected so that:

- they cover some of the important and common elements of civil engineering work; and
- they are competency based, and so do not depend on “time serving” as a measure of achievement; and
- the stated achievement criteria are, as far as possible, capable of objective assessment.

- 4.4 The components listed in the Training Schedule have been expanded to a certain extent and achievement levels are given for each of the expanded elements. The achievement levels represent the minimum level of competence or ability required for each objective. It follows that, if competence is achieved for all individual elements, overall competence should be the desired outcome (i.e. the competence or ability to produce holistic, realistic and practical solutions to civil engineering problems).

The Training Period

- 4.5 The training period is specified as a minimum of three years, as it is not considered possible for an CE to acquire the required range of competencies, and each to the required level, in a shorter period of time. It is anticipated that it will generally take longer than 36 months for an CE to acquire the necessary competencies. Only CEs with very well developed, managed and implemented training programs will reach the requirements in the minimum period. Spending time on a particular element of training without a qualitative objective will not in itself ensure achievement of the required level of competency for that element.

The Training Programme

- 4.6 The underlying philosophy of the whole process is to achieve specific outcomes. The Training Programme serves as a structured mechanism for achieving these outcomes. This is nothing more than a detailed “home-grown” management tool to provide a specific implementation plan by an organisation to achieve an outcome which happens to coincide with ECSA’s requirements for registration.
- 4.7 Employers who registered a CU have committed themselves to the profession, and are morally bound to develop their own training programmes so that competent and well-rounded engineers are produced. In so doing these employers play a significant role in ensuring the ongoing development and sustainability of the profession.
- 4.8 It does not follow, however, that employers who have not registered a CU are not committed to the same objectives as those who registered a CU. The difference is that they have not declared their commitment to the profession. In this case their CE employees will expect them to develop and implement an appropriate in-house training programme and the profession will be in full support of these CEs.
- 4.9 Training programmes must provide for the development of professional attributes and core competencies common to all CEs, regardless of the type of work undertaken or the specific direction in which their interests take them. Each employer should cater for the common themes as well as the specific types of work done in the organisation. Larger employers with separate functional departments (e.g. water, geotechnical, structural, etc) may find it necessary to have separately tailored training programmes for each functional department.
- 4.10 The training programmes should be designed so that they follow the pattern established in the Training Schedule, especially in terms of the objectives and the related achievement levels. This will facilitate the process of reviewing an individual’s training against the Training Schedule.
- 4.11 In order to ensure that comprehensive and well-rounded training is provided, the training programme should cover all relevant activities of that organisation. These may include administrative, financial, management and/or other applicable activities.
- 4.12 It is strongly recommended that the appointed Mentor(s) in an organisation be made responsible for drawing up and monitoring the implementation of a training programme. Where more than one training programme exists, more than one Mentor would presumably carry responsibility for the individual programmes and they should collectively take responsibility for ensuring implementation and consistency of content and standard.

5. CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

What is CPD?

- 5.1 SAICE defines CPD as “the systematic 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 engineer’s career”.

Why CPD?

- 5.2 CPD is aimed at enhancing personal growth, which, in turn, will enhance corporate performance. The benefits are, therefore, symbiotic and self-supporting. In other words, the more an employer supports an individual’s CPD, the better the individual becomes, and the better the work produced for the employer. From the employee’s perspective, the more an individual participates in CPD, the better his/her performance, thus increasing the likelihood that the employer will recognise improved performance.

In the rapidly changing environment, CPD is considered essential for each engineer so that he/she may stay abreast of current developments and progress in the industry. This contributes to a high standard of service to clients or employers, and promotes the status of civil engineers in society.

What constitutes CPD?

- 5.3 Any combination of the activities listed below will constitute CPD:

- Attending courses, seminars, congresses and technical meetings organised by SAICE, universities, other professional bodies and course providers.
- Actively participating in conferences, serving on technical or professional committees and working groups.
- Undertaking structured self-study (i.e. using textbooks with examples).
- Studying technical literature (e.g. journals, magazines)
- Taking correspondence courses and studying other supervised study packages.
- Taking in-house courses provided by employers.
- Enrolling for formal post-graduate studies (a maximum credit of 15 days will be allowed).
- Writing technical papers or presenting lectures at an organised event.
- Participating in organised site visits by SAICE, universities or other professional bodies.

How much CPD is required before registration?

- 5.4 SAICE recommends that 30 days of approved CPD should be acquired during the training period. The 30 days is not compulsory, and is given as a guide in order that a well-balanced program may be achieved. Ideally the 30 days should be made up of:
- 10 days spent on technical subjects,
 - 10 days on managerial and/or professional and ethical subjects and,
 - 10 days on either of the above types, or any other types of CPD.

Other requirements that should be met are:

- At least one day on safety issues should be included as part of the overall program.
- No single course or activity may count for more than five days of the program, except for post-graduate studies where 15 days maximum are allowed.

In the initial stages of training, the emphasis should be on technical and practical aspects. In the later stages the emphasis should move on to managerial/professional/ethical aspects.

Who selects CPD?

- 5.5 Ultimately the responsibility rests with the CE. The Mentor should however give guidance throughout the training period.

Each CE will have to decide, within the framework of a career plan, what particular activities will benefit him/her or best assist to achieve his/her goals. There are no “approved or compulsory” CPD events. CPD is personal to each individual and should comprise an integral part of his/her Personal Development Plan. It is recommended that the CE and the Mentor draw up a Personal Development Plan at the beginning of the Training Period. This plan should then be reviewed on a regular basis.

Career planning and professional development is a personal matter, and careful selection of CPD activities will go a long way towards assisting CEs in reaching their full potential.

Who measures and/or certifies CPD?

- 5.6 The Mentor is responsible for assessing whether a CPD activity is relevant and/or acceptable, as well as the number of days credit which should be allowed. The Mentor must initial each entry in the CE’s logbook, thus indicating his/her satisfaction with the relevance and days credited for the particular entry.

CEs who do not have a Mentor must make their own arrangements for satisfying the CPD requirements.

How is the quantity of CPD assessed?

- 5.7 THE FINAL ASSESSMENT OF THE NUMBER OF CPD DAYS CREDITED FOR EACH ACTIVITY WILL REST WITH THE MENTOR.

As a guide, one CPD day could be six hours of any of the activities listed in §5.3 above.

How should CPD be recorded?

- 5.8 SAICE publishes a CPD Logbook, which is a convenient means of recording CPD. It has been designed to accommodate all types of CPD activities, which could be undertaken during the training period, as well as throughout the person's whole career.

A record of CPD is required when applying for registration, and a photocopy of the relevant pages is a convenient means of providing the necessary information. The logbook has been designed with this in mind, and copies from the logbook will be accepted by ECSA.

It is recommended that every engineer continues with CPD throughout his/her career and maintains a record thereof. The logbook allows for this and it is recommended that five days of CPD be achieved during each year after registration.

Where can information on CPD be found?

- 5.9 To assist with identification of suitable courses, SAICE publishes on its website, <http://www.civils.org.za/events>, an events database, which contains information about available courses listed by region and topic. Other information about the Institution and its Branch and Division Committees can also be accessed on the website.

6. GUIDANCE NOTES FOR PREPARATION OF REPORTS

Training/Experience Reports (Form A2.1)

- 6.1 A Training/Experience Report must be completed for each training period on the prescribed form (Form A2.1). CEs should especially take note of how training periods are defined and what constitutes a training period. Details are provided on the Information Sheet (Sheet A2) which forms part of the ECSA application form.

All training reports must be typewritten and the combined reports should not exceed 2000 words.

Each report should set out the CE's training and practical experience and should explain clearly the position they occupied, together with the degree of responsibility assigned to them. Each report should indicate which of the training objectives on the Training Schedule were covered, and the extent thereof.

CEs should expand on any special problems they encountered during each period and on any areas where they obtained extensive experience. Where appropriate, some indication of the size and costs of the works should be given. CEs should emphasize their personal experience, bringing out the principal lessons learnt, and avoid extensive job specifications and descriptions. Reports must not be a mere inventory of work prepared and executed.

Summary of Training/Experience Reports (Form A2.2)

- 6.2 All Training/Experience Reports completed during their training period must be summarised on the prescribed form (Form A2.2).

Interview Records (Form AC8)

- 6.3 All interviews with the Mentor must be recorded on the prescribed form (Forms AC8). It is also recommended that CEs keep their own notes of interviews as a record of the discussions. These notes may be of assistance when preparing for the Professional Review.

Project Report

- 6.4 The purpose of the 4000 word typewritten project report is to demonstrate the CE's technical, professional and communication competence. It is not a repeat of the information given in the experience/training reports.

The report should describe an engineering project or projects, which have been significant in the development of the candidate. Whilst it is preferable that the report should be confined to one project or part of a project, it is appreciated that various constraints during the training period could mitigate against this. In such cases the report may cover up to but no more than three projects. The emphasis, however, must be on the candidate's own contribution and should indicate an overall understanding of the relevance of this contribution to the project.

Candidates should therefore indicate the depth of their roles in the development of the projects and give the background to any important decisions for which they were responsible.

Where appropriate the report should incorporate analyses, drawings and/or other illustrations, which are necessary or beneficial for an appreciation of the candidate's contribution to the project. Similarly cost data may be included to show that the candidate has an adequate understanding of the financial implications of decisions taken.

It is noted that candidates should use the subject of the project report as their presentation during the professional review. The project report forms a major basis on which they are initially assessed both for the experience appraisal and later for the professional review, hence it is suggested that the selection of the project report subject should be discussed with their mentors. CEs should use this opportunity through the Project Report and the presentation at the Review to promote themselves as eligible for registration as professional engineers.

General

- 6.5 Mentors, SCEs or persons to whom the CE was responsible should certify the accuracy of the CE's reports as soon as possible after it was performed.
- 6.6 Reports must bear the name and signature of the CE.

7. ESSAYS

Introduction

- 7.1 Reference is made to para 6.5 on page 9 of the “*Discipline Specific Guidelines: Civil Engineering*”, which outlines the need for essays and the selection thereof.
- 7.2 A list of topics for one of the essays required is published by SAICE in April of each year for the following calendar year (ie January to December). The topics are reviewed and amended as necessary before each publication.

Guidelines on Preparation for Essays

- 7.3 In preparing for the essay portion of the professional review, CEs should note that the essays will perform three important functions:
- They are a test of the CE’s ability to communicate and his/her knowledge of the language used.
 - They test the CE’s ability to marshal thoughts and express them on paper in a clear and concise manner.
 - They are a further opportunity for the CE to display his/her technical and professional knowledge of a particular subject.

Where CEs are required to express opinions, they will not be penalised should their opinions not agree with those of the Reviewers, provided that the arguments supporting these opinions are logical.

- 7.4 CEs will be expected to demonstrate:
- that they can write clearly and concisely so as to render their communication intelligible to the intended audience;
 - that they have sufficient understanding of the role of the engineer in the community to be able to form a view of the social value of their own work and uphold that view in discussions with any member of the community, and
 - that they have sufficient knowledge of management concepts to be able to operate effectively as potential leaders in the civil engineering industry.
- 7.5 The essays should follow an ordered structure, displaying an awareness of the importance of division into suitable paragraphs. CEs are encouraged to include references to their sources of information in the text of their essays. Rough notes should be written on the inside back cover of the essay book designated for that purpose, not on separate sheets. A dictionary may be used, but no other books or notes are allowed at CEs’ desks. Ninety minutes (1.5 hours) are allowed for each essay, from the commencement of reading of the topic to the collection of the script. Reviewers will assess and grade the essays against the criteria as given below. The finished essays are not required to be polished articles, but the standard should be consistent with that of a tidy first draft.

Assessment and Grading of Essays

Reviewers will consider the following aspects when assessing essays:

7.6 Knowledge of the subject and relevance of answers to the topics set.

- Does the CE exhibit a reasonable (depth and breadth of) knowledge of the topic, bearing in mind their experience as demonstrated by the submitted documents and the interviews?
- Has the CE augmented his/her experience by sufficient reading on the subjects?
- Has the CE understood the subjects?
- Do the essays cover the whole subject set, or only parts of them?
- Do the essays keep to the point, or do they tend to wander from it?
- Has the CE refrained from “padding” the essays with irrelevant or repetitive material?
- Are the essays of reasonable and acceptable length taking into account their content?

7.7 Grammar and syntax.

- Does every sentence contain a finite verb and are the tenses correct?
- Is there agreement between nouns and verbs with regard to singular and plural cases?
- Is the spelling and punctuation reasonably correct?
- Has the CE avoided jargon and the use of catch phrases, acronyms or apparently meaningless abbreviations? (Acronyms and abbreviations when first used should be accompanied by a full spelling).
- Are most sentences easy to understand?
- Are the sentences constructed correctly?

7.8 Clarity of argument and presentation.

- Does the CE have a good vocabulary and is the phraseology sufficiently mature for a person of their age?
- Are the ideas expressed in a logical manner?
- Is it easy to grasp the CE’s arguments?
- Do the essays have a discernible framework or pattern?
- Are paragraph divisions sensibly chosen?
- Is the presentation reasonably tidy, is the handwriting legible and are the essays a pleasure to read?

7.9 Each essay will be graded as follows:

KNOWLEDGE & RELEVANCE

- A Very Good
- B Satisfactory
- C Unsatisfactory
- D Very Bad

GRAMMAR & SYNTAX

- A Very Good
- B Satisfactory
- C Unsatisfactory
- D Very Bad

CLARITY & PRESENTATION

- A Very Good
- B Satisfactory
- C Unsatisfactory
- D Very Bad

7.10 CEs may fail the essay component of the Professional Review if they obtain two or more C grades, or one D grade out of the total of six marks for the two essays.