



CANDIDATE GUIDE

***UNDERTAKE
PROFESSIONAL
DEVELOPMENT ACTIVITIES***

OUTCOME 11



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CANDIDATE INFORMATION

Details	Please Complete details
Name of candidate	
Name of supervisor	
Work Unit	
Name of mentor	
Date started	
Date of completion & Assessment	

COMPETENCY STANDARD REQUIREMENTS

(Direct extract from SAIMEchE's Standard of Professional Competency)

LEARNING OUTCOME 11

Undertake professional development activities sufficient to maintain and extend his or her competence.

Assessment Criteria:

The Candidate manages his or her own professional development by typically:

1. Planning own professional development strategy
2. Selecting appropriate professional development activities
3. Keeping record of professional development strategy and activities
4. Displaying independent learning ability
5. Completing professional development activities

Range Statement:

A Candidate in a structured programme is expected to take ownership of the strategy.

K EYS TO ICONS

The following icons are used throughout the study guide to indicate specific functions:

	<p>DON'T FORGET/NOTE This icon indicates information of particular importance</p>
	<p>CANDIDATE GUIDE This refers to the learning material in this module which is aligned to the ECSA Standard</p>
	<p>EXERCISES Practical activities to do, either individually or in syndicate groups during the training process</p>
	<p>BOOKS AND WEBSITES Additional resource information for further reading and reference</p>
	<p>SELF TEST QUESTIONS Self-evaluation for candidates to test understanding of the learning material</p>
	<p>QUOTATIONS Quotations which offer interesting points of view and statements of wisdom and insight</p>
	<p>YOUR NOTE PAD Provided for candidate to document notes during presentation of training</p>

GENERAL GUIDELINES

PURPOSE

This module provides an introduction to the basic concepts that you will need to understand relating to the undertaking of professional development activities. Easy-to-follow steps based on the assessment criteria of the competency standard will equip you with the skills to:

1. Know the definitions and major concepts relating to the undertaking of professional development activities
2. Understand the meaning of competence
3. Introduce you to the process of independent learning activities
4. Follow the assessment criteria steps when managing your own development activities

This module introduces you to these management concepts and criteria. While it may be impossible and impractical to present in this module all the guidelines pertaining to engineering practice, certain issues of relevance will be highlighted and discussed. You, the candidate, are expected to expand your awareness of this process through workplace projects and further reading and learning.

Candidates will have the opportunity to discuss and debate management during the workshop, and thereby understand and be better equipped to use these concepts and processes in the workplace.

LEARNING OUTCOME AND RANGE OF LEARNING

This programme uses the basic structure of SAIMEchE's Competency Standard, and specifically the assessment criteria, to take you through the process of learning, as an understanding of the assessment criteria and the range of understanding required is fundamental to professional competence.

CANDIDATE SUPPORT

Resources	<p>Candidate Guide</p> 	<p>The Candidate Guide is a manual covering the theory of the comprehension and development of advanced knowledge, and provides guidance on practical exercises to meet the requirements of the assessment criteria</p>
	<p>Candidate Portfolio of Evidence Guide</p>	<p>This is a separate document which provides guidelines for Candidates on how to compile their portfolio of evidence, and a template to structure their practical task evidence into a file format for assessment by the mentor/referee</p>
	<p>Books and websites</p> 	<p>Refer to references at the end of the Candidate Guide</p>
	<p>Videos</p> 	<p>Refers to any videos that are regarded as relevant to the subject</p>
	<p>Folder enclosures</p> 	<p>This includes all handouts, checklists, etc. as well as SAIMEchE's Code of Conduct</p>

SECTION 1

UNDERTAKE PROFESSIONAL DEVELOPMENT ACTIVITIES

LEARNING OUTCOMES:

- Understand the concept of development activities
- Be aware of what is sufficient to maintain and extend competence
- Define and understand independent learning ability

1.0. AN INTRODUCTION TO UNDERTAKING PROFESSIONAL DEVELOPMENT ACTIVITIES SUFFICIENT TO MAINTAIN AND EXTEND ONE'S COMPETENCE

1.1. Competence

Competency has different meanings, and continues to remain one of the most diffuse terms in the management development sector, and in the organizational and occupational literature. An extract from one of many sources that have tried to summarise the term is as follows:

The process of competency development is a lifelong series of doing and reflecting. As competencies apply to careers as well as jobs, lifelong competency development is linked with personal development as a management concept. It requires a special environment, where the rules are necessary in order to introduce novices, but people at a more advanced level of competency will systematically break the rules if the situation requires it. This environment is synonymously described using terms such as learning organization, knowledge creation, self-organizing and empowerment.

The role of the engineer will encompass two types of competence: technical and professional. It can be readily concluded in reviewing the 11 Outcomes addressed in this programme that the professional competencies are not discipline-specific. Not only do they apply to all engineering disciplines, but they can apply to any non-engineering activity where a professional performance is expected, e.g. medical, legal, accounting, teaching, etc. The engineer starts developing the technical competencies during the formal education process which follow the rules mentioned above.

After graduating and entering the workplace, the development of professional competencies begins with the semi-formalised structures of supervision, mentoring and peer interaction, where the engineer will not only start a lifelong process of technical competence development

related to the workplace experiences, but will begin to formally learn and practise the functions of professional performance. This continues until a stage is reached where assessment of the performance is able to confer the recognition of competence as a competent professional engineer.

1.2. Development Activities

Development activities can be regarded as commencing once the Candidate registers to participate in any programme that provides guidance, assistance, supervision and mentorship. This can be in any form the Candidate desires to pursue, but it will be evident to any Candidate that to be able to have the appropriate guidance and to be able to obtain the necessary assessment processes, an alignment with a structured programme will be beneficial. This programme is one such structured facility as it has had the advantage of the input and participation of many members of the profession who are active in the voluntary engineering associations.

The process then starts with recognising that continuing development of the engineer effectively takes place throughout the career of the engineer. No graduate should ever believe that the learning is over after the degree or diploma has been obtained. These qualifications constitute simply the bedrock on which both technical and professional competence is built. There is a pearl of wisdom that many engineers will share with new Graduates: keep the books and records you used at University. You will be surprised how often you will refer back to them over the years.

Once engaged with a facility that will assist with the development process, it is a requirement that the Candidate prepares a strategy for a continuous development programme. This activity is referred to as Interim Professional Development (IPD) during the candidacy phase, and Continuous Professional Development (CPD) once a Candidate has completed a competency development programme. It must in effect take on an almost formal appearance that entrenches a state of mind that learning after graduation in many ways has begun again, albeit

with a different focus. The advantage is that the Candidate is free to select the components of the programme.

The purpose of CPD, if the Candidate has registered with a statutory body, is not to simply gain the minimum credits to remain registered. The goal must be to keep abreast of the disciplines required to remain a competent professional engineer.

1.3. Professional Activities

Professional activities undertaken during the Candidacy phase are those that are contained in the curriculum of this Professional Development Programme, specially developed in this case by the SAIMEchE.

The process starts in the first year of the Candidate's training phase. Each year the same Outcome guidelines are followed in the annual series of 11 workshops and the workplace-based exercises. The principle is that the Candidate is in practice mode from Year One, repeating the exercises and projects by which competency is assessed, through progressive levels of responsibility in the workplace. The minimum period of this learning or practice process is three years. Once the Candidate has completed the programme to meet the criteria of SAIMEchE, the records (PoE) can then be used to apply for registration with any registration body that will accept the SAIMEchE Certificate of Competence, together with any additional documentation and activities that they may require.

Professional competence is not the same as technical competence. Professional competencies are generic whereas technical competencies are discipline-specific. Guidelines for technical competencies are given in 2.2.

During both the IPD and CPD stages, the Candidate is encouraged to include both professional and technical categories in his/her training records.

1.4. Sufficient To Maintain

The process of continuous professional development is recommended in this programme, as it will enable the competent professional engineer to maintain a level of both professional and technical competence that will enable him to keep up with developments in technological advances, and in this way maintain a standard of excellence in all the work that he does.

This will enable him to give the best possible service to clients, ensure that the latest, most cost-effective technology will be employed in ensuring the health and safety of the public, and in advancing the development of social, environmental and sustainable development strategies. It is not possible to leave the environment of any tertiary institution and to expect that the knowledge gained there will be sufficient to support a career as a competent professional engineer. On-going learning and skills development needs to take place to at least maintain a satisfactory level of professional competence.

1.5. And Extend

This process should, however, be taken even further. It should not be sufficient for the competent professional to be satisfied with just maintaining a specific standard, but to undertake a strategy of learning and development that continually extends the boundaries of knowledge and skills. This may be termed, for the sake of understanding, continuous professional growth. The competent professional should not be content to maintain only, and remain stagnant on that path, but to push the boundaries and extend his knowledge and skill into new areas.

1.6. Professional Competence

The first step in a professional approach is to ensure that you have the required competencies. Being competent in this context means “having the attributes necessary to perform the activities within the profession or occupation to the standard expected in independent practise” (IEA definition). The attributes necessary are clearly indicated and defined in this programme as those listed in the SAIMEchE Standard of Professional Competency. They are defined as the 11 Outcomes within this Standard. The Professional Development Programme (PDP) is designed to develop these competencies while a candidate is operating within a work environment, from which all projects will be selected and assessed by the Supervisors and the Mentors. An ability to perform these activities to the standard required by the assessment criteria will enable you to demonstrate a professional approach.



GROUP DISCUSSION

Select from the topics below:

1. Discuss the concept of “lifelong learning”.
2. List and discuss various ways that a competent professional engineer can learn new things once the tertiary education phase is over.
3. Should the focus of further study be on getting more technical skills or professional competencies?
4. How much of the increase in knowledge and skills should come from the work environment and how much from external sources?

SECTION 2

A PRACTICAL PROFESSIONAL DEVELOPMENT MODEL

LEARNING OUTCOMES:

- Understand the practical steps to be taken when undertaking professional development activities
- Be competent in using the steps to undertake one's own development
- Be prepared to apply this learning process in the workplace on a regular and routine basis

2.0. A PRACTICAL DEVELOPMENT MODEL FOR PROFESSIONAL DEVELOPMENT ACTIVITIES

2.1. Introduction

This section will take you through the assessment criteria which form the basis of a practical model which can be effectively used on an on-going basis when undertaking professional development activities.

2.2 Steps in professional development

Step 1: Plan your own professional development strategy

The Candidate is required to prepare a strategy document that sets out the type of learning activity to be pursued. This needs to take into account the categories listed in Step 2 below. It should include a diary record of all the relevant activities undertaken, from the start of the candidacy phase. In addition to the categories in Step 2, the Candidate should include the following:

1. Each of the monthly Outcome workshops and a summary of what was learnt
2. Workplace training events, courses, in-house training sessions
3. Video-based training sessions, webinars, techno-group participation
4. Engineering journals that are regularly received and read

Accredited events will normally have certificates of attendance issued that record the number of credits that are awarded for the event. It would therefore be practical to keep a folder for certificates and to prepare a table with dates and credits awarded.

Step 2: Select appropriate professional development activities

During the period of candidacy training, the Candidate will be required to develop a strategy for the activity referred to as Interim Professional Development (IPD).

As a guide, the categories below may assist in the preparation of the Candidate's strategy. These are the activities that are recommended in the Continuous Professional Development (CPD) stage.

a. Developmental activities

These include conferences, congresses, large group workshops, lectures, seminars, refresher courses and colloquiums. Included, is the wide range of seminars and short courses that are given by the Voluntary Engineering Associations and which are all accredited as meeting the quality requirements for IPD and CPD.

b. Work-based activities

This category covers the time spent in the workplace performing engineering-related activities. It also includes any in-house skills training sessions, management functions and mentoring activities.

c. Individual activities

Some of the options that apply to the IPD phase are: membership of your Voluntary Engineering Association, lecturing and supervision of students, publication of technical articles, participation in technical and associated committees and self-study.

The Candidate will be able to include in the self-study category the reading and studying of the references that are identified in the appendices of the Outcomes curricula. The Candidate will also find the need to make reference to study material that supports work-related projects and record it in the Portfolio of Evidence (PoE).

Step 3: Keep record of professional development strategy and activities

It is highly recommended that a candidate keeps a record of all and any activities that can be considered either IPD or CPD activities from the very moment he has completed his tertiary education and embarks on an engineering career. This will enable a candidate to keep track of what he has done and is a vital discipline and practice that will be of great assistance when it comes to preparing an application to any registering authority once this programme has been completed.

This record may take the simple form of a specific book used for the process or a computer spread sheet, which is of course more flexible and easy to update.

Step 4: Display independent learning ability

As was made clear in the Introductory Workshop of the PDP, it is always the responsibility of Candidates to take charge of their own development towards competency. The programme provides a framework and gives guidance and structure through the material and the input of the Mentor, but the responsibility always lies with the Candidate to ensure that development takes place towards competency. This same principle holds when it comes to on-going development and the maintenance and extension of knowledge and skills.

This ability to plan a development strategy, select appropriate activities, keep records and complete the development activities is again the total responsibility of the competent professional engineer. If this ability is not displayed during the PDP, then it is unlikely that a Candidate will be able to complete the programme or maintain this discipline once the programme is over. In this regard you are “the captain of your own ship”.

Step 5: Complete professional development activities

It may seem an obvious thing to say, but starting and not completing any professional development activities would be counter-productive and result in a situation of no progress. Once a strategy has been established, and a plan set in place, every effort should be made to complete all activities identified as being of importance to the acquisition of knowledge and skills. This will also be critical if a competent professional has proceeded to register with any professional body and is required to demonstrate the acquisition of points towards the maintenance of such registration.



ASSESSMENT TEST

Complete the Assessment Test in Appendix 1 (30 minutes are allocated for this).



SMALL GROUP ACTIVITY

Split into two groups and refer to the discipline-specific case study in Appendix 2.



CLASS DISCUSSION

Discuss Case Studies (Appendix 2) and Programme administration. As this is the last of the 11 Outcomes, this workshop can be used to deal with any outstanding issues. It can be used to look at additional case studies, or work on specific aspects of any of the other Outcomes that may need additional attention. This serves as a reminder that the Outcomes are not meant to be used in isolation, but as a total system informing the competent professional engineer at every stage of his daily activities.

SECTION 3

***GENERIC GUIDING
PRINCIPLES***

GENERIC GUIDING PRINCIPLES

1. Competency Standard

The SAIMechE Competency Standard is the fundamental document underpinning the journey to Professional Competence. It is the foundation document informing all aspects of the training programme that relates the requirements of competency to the working environment of the developing engineer. It is the standard of practice against which all activities of a competent and professional engineer are measured.

2. Outcomes

The eleven outcomes are the fundamental building blocks on the path to competency. A demonstration of understanding of these outcomes as they relate to the day-to-day working environment will indicate that a level of competency has been reached which will enable the candidate to function at a professional level within the commercial and business environment.

3. Assessment Criteria

The assessment criteria are the requirements against which the candidate is evaluated in order to determine understanding and competency. These are objective criteria which will ensure capability and transparency and set a standard that ensures a proficient level of competency and professionalism as required by industry and in the interests of public health and safety.

4. Range Statements

The range statements set the boundaries of the requirements of each outcome, and determine the limits of competency as required for professional practice.

APPENDICES

APPENDIX 1

ASSESSMENTS/TESTS

INITIAL TEST (SECTION 1)

1. Describe what is meant by “professional development”.

2. Who is responsible for a candidate’s development of additional knowledge and skills?

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3. Within the context of this Professional Development Programme, describe what is meant by “professional competency”.

4. What activities do you think would be relevant to professional development?

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5. Why do you think it is important to maintain and extend professional competency?

6. What is meant by “technical competence”?

7. How much professional development takes place within your daily work environment?
Explain your answer.

ASSESSMENT TEST (SECTION 2)

1. List, in your own words, the five steps of the practical development model.

2. Explain what is meant by “professional development strategy”.

3. What would be involved in “planning your strategy”?

4. What would you consider “appropriate development activities”?

5. How would you go about keeping a record of your professional development activities?

6. Who is responsible to ensure professional development takes place? Elaborate your answer by describing the personal qualities required by the responsible person.

7. Why is it important to complete all development activities?

8. What, in your opinion, is the point of on-going professional development?

APPENDIX 2: CASE STUDIES

R EFERENCES



Websites:

Definition

http://en.wikipedia.org/wiki/Continuing_professional_development

ECSA

http://www.saimeche.org.za/general/recommended_links.asp

http://www.ecsa.co.za/documents/CPD_RenewalRegistrationRules_2008.pdf

Other Professions

<http://www.jobs.ac.uk/careers-advice/managing-your-career/1318/what-is-continuing-professional-development-cpd>

<http://www.cpdjournals.co.za/>

<http://www.ecpd.co.za/>

<http://www.accountancysa.org.za/resources/ShowItemArticle.asp?ArticleId=2305&Issue=1109>

RECORDING OF REPORTS



Formats for recording the portfolio of evidence

During the course of the candidate phase training, the Candidate will accumulate a portfolio of evidence comprising the reports supporting the various exercises covered in these guidelines for each Outcome.

Note that the PDP Administration will provide a web site document system that will allow the candidate to store all the PDP documents created as a back-up facility and will enable the candidate to allow access by the Mentor for any reviews that are required.

ASSSESSMENT PROCESS

Guide to the Candidate

You will be assessed against Outcome 11.

In order to determine your level of competence you will be tested by:

- Tests done during the workshop and evaluated by fellow candidates and your mentor
- Written assignments (practical tasks given to demonstrate understanding of this Outcome through application in a work setting)
- Knowledge assessment and presentation (i.e. 10 minutes oral presentation using Power Point). Please Note: Oral presentations may need to be taped for moderation and re-assessment procedures.

You will need to prepare yourself in the following ways:

- Familiarise yourself with the contents of this guideline
- Familiarise yourself with the reporting formats required
- Familiarise yourself with the references listed
- Do the written assignments as required by this workshop
- For oral presentations of reports, a ten minute presentation is required to summarise the exercise performed



Note:

A detailed briefing on the exact requirements was given to you by the Mentor/Assessor at the Introductory Workshop in order for you to prepare for the assessment process.

The evidence you will be judged on includes:

- Your proven competence in all areas questioned in the presentation (Competent or Not Yet Competent)
- The practical tasks compiled in your Portfolio of Evidence

Good luck, and remember, the mentor/assessor is there to help you.