

# *Registration of Professional Engineering Technologists at ECSA – Alternative Route Outcomes 3,4 and 5*



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# *Introduction*

In the previous discussion held on the alternative route we discussed the requirements for outcomes 1 and 2.

In summary Outcome 1 is the understanding and ability to apply the fundamentals of engineering with the use of mathematics and natural science.

Outcome 2 is the display of proficiency in the engineering field chosen by yourself.

In today's discussion we will discuss the last three outcomes of the total of five.



## *Introduction (cont.)*

To refresh your memory for the characteristics for a broadly-defined engineering problem as stated on Form B18-EDR are:

a) Required coherent and detailed engineering knowledge underpinning the applicable area:

and one or more of:

b) Are ill-posed, under- or over specified, requiring identification and interpretation into the technology area:

c) Encompass systems within complex engineering systems;



## *Introduction (cont.)*

- d) Belong to families of problems which are solved in well-accepted but innovative ways;
- e) Can be solved by structured analysis techniques;
- f) May be partially outside standards and codes; must provide justification to operate outside;
- g) Require information from practice area and sources interfacing with practice area that is complex and incomplete
- h) Involves a variety of issues which may conflicting constraints: technical, engineering and interested or affected parties.



# *Outcome no. 3*

## **Exit level outcome 3**

The requirement in this outcome you must be able to demonstrate your competency in the use of engineering tools and Information Technology (IT).

Outcome no.3 has two sub-divisions.

Sub-division 3.1 is where you discuss your ability to use acceptable methods, skills or tools which can include computer programs to solve a broadly defined engineering problem



## *Outcome no. 3 (Cont.)*

Sub-division 3.2 is where you indicate how you applied the method, skill or tool to achieve the required result and how you confirmed the results as correct.

To summarise here you demonstrate your competency for the use of various methods inclusive of your skill with the various computer programs and tools to solve broadly-defined engineering activity and how you confirmed your results as correct.



# *Outcome no. 4*

## **Exit level outcome 4**

The requirement for this outcome is where you display your design competency in a properly structured approach of your project work for a broadly-defined engineering problem.

This outcome has four sub-divisions.

Sub-division 4.1 you describe how you developed the design problem and what process was followed for the development of the design problem

Sub-division 4.2 you must describe what needs for the user, legislation, standards and resources were captured and evaluated.



## *Outcome no. 4 (Cont.)*

Sub-division 4.3 here you demonstrate the ability to perform design task, selection of a preferred solution from your various alternatives taking into account the assumptions and limits.

Sub-division 4.4 Here you describe how you evaluated your selected design in relation to impacts and benefits and how this information was communicated in your engineering report.

In summary you must demonstrate your design competency in a broadly-defined engineering problem.





# *Outcome no. 5*

## **Exit level outcome 5**

The requirement for this outcome is where you display your competency in the methodology in experimental or investigative and information handling.

This outcome has four sub-divisions.

Sub-division 5.1 you describe how you planned your investigation and what information did you use

Sub-division 5.2 you describe the methodology you used to do the analysis and what equipment and/or software was selected and used.



## *Outcome no. 5 (Cont.)*

Sub-division 5.3 here you demonstrate your ability from data available how you extracted the information, analyzed this information critically and how the conclusions were reached based on your analysing of the information.

Sub-division 5.4 Here you describe the purpose, process and outcomes of the investigation are recorded in an engineering report.

In summary you must display your competency in collecting, analysing, using this information to form your basis of the conclusions to be recorded in an engineering report.



# *Summary of the Alternative Route Outcomes*

## Summary

Today we have discussed in briefly the exit outcomes 3,4 and 5 for the alternative route for registration as a Technologist at ECSA.

There are five outcomes for the alternative route and they are 1,2,3,,4 and 5 to be completed on Form B18-EDR.

The remainder outcomes 6,7,8,9,10 and 11 are to be competed on R-03-ER-PT.



# *Acknowledgement*

The presentation is based on the Engineering Council of South Africa (ECSA) Documents:

- R-02-STA-PE/PT/PCE/PN , Competency Standard for registration in Professional Categories as PE/PT/PCE/PN, Revision 1: 20 August 2020
- Form B18-EDR for Alternative Route application

***THANK YOU***



*The End*

- *Any Questions??*