Professional Development Plan

by

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for

IPI 410

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1 Purpose

The purpose of this plan is to ensure that all requirements in terms of ECSA outcomes are met, in the minimum amount of time of five years, by future candidate engineer Mr Pierre Le Roux (13112262) which will be referred to in this paper as FCE. The plan will cover the following:

1. Registering at ECSA as a Professional Industrial Engineer
2. Completing one five year cycle of Continuous Professional Development (CPD)

This plan isn't perfect and as circumstances change the plan will be rescheduled accordingly while still ensure that the FCE achieves said outcomes.

2 Directions

During the FCE's studies automation, simulation, operations research, processes and production automation peaks his interest. The FCE's final year project , Improving FlySafair's Crew Scheduling, is an operations research project which combines programming, heuristics and modelling to create a more automated system the insures to generate a more optimal schedule for FlySafair.

3 Commitments

The FCE's has not commitments to a third party in terms of completing his B.Ing. degree. While it is fortunate that the FCE doesn't have any contractual requirement in terms of employment, but on the other hand the FCE will need to find employment to ensure he can complete the requirements in terms of the eleven ECSA outcomes and completing activities for CPD credits - Developmental, work-based and individual.

4 CDP To Achieve Professional Registration

If the FCE passes all his module this year he will graduate at the end of 2016. The FCE hopes that FlySafair would provide work for him based on the results of his final year project. Concerning the FCE's interests the following directions, but not limited to, are available:

1. **Automation and Control** in decision support mechanisms
2. **Operations Research** in logistics
3. **Processes** in service industries
4. **Robotics and Production** in manufacturing industries

Development in any of the above field is acceptable according to CITE(ECSA 2013a) as it is specific to the industrial engineering field. With FlySafair **Automation and Control** and **Operations Research** will be developed over a period of 36 months to comply with outcomes as stated in CITE(ECSA 2012).

4.1 ECSA's Eleven Competency Standards

In figure 1, ECSA's eleven outcomes are summaries as stated in R-08-PE. Theses consists of five main groups:

Group A: Knowledge-based Engineering Problem Solving (Outcomes 1, 2, 3)

Group B: Managing Engineering Activities (Outcomes 4, 5)

Group C: Risk and Impact Mitigation (Outcomes 6, 7)

Group D: Exercising Judgement and Taking Responsibility (Outcomes 8, 9, 10)

Group E: Developing Own Competency (Outcome 11)

Essential Activities of Professional Engineers	Using Enabling Knowledge	Taking Account of Consequences	Exercising Personal Attributes	Maintaining and Extending Competence
1: Define, investigate and analyse *complex* engineering problems. **2:** Design or develop solutions to *complex* engineering problems.	**3:** Comprehend and apply advanced knowledge of the widely-applied principles underpinning good engineering practice, specialist knowledge and knowledge specific to the jurisdiction and local conditions.	**6:** Recognise and address the reasonably foreseeable social, cultural and environmental effects of *complex* engineering activities. **7:** Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his or her *complex* engineering activities.	**8:** Conduct engineering activities ethically. **9:** Exercise sound judgement in the course of *complex* engineering activities. **10:** Be responsible for making decisions on part or all of *complex* engineering activities.	**11:** Undertake professional development activities sufficient to maintain and extend his or her competence.
4: Manage part or all of one or more *complex* engineering activities. **5:** Communicate clearly with others in the course of his or her engineering activities.				

Figure 1: Nested ECSA Outcomes for Registration as a Professional Engineer

https://www.ecsa.co.za/RegisterDocuments/R-02-PE.pdf
https : *//www.ecsa.co.za/ECSADocuments/ECSA*
https : *//www.ecsa.co.za/ECSADocuments/ECSA*
https://www.ecsa.co.za/maintainregistration/MaintainReg/CPD$_{P}olicy.pdf$
https://www.ecsa.co.za/regulation/RegulationDocs/2014$_{C}ode_{o}f_{C}onduct.pdf$
https://www.saiie.co.za/cms/category/53-approved-courses
https://www.saiie.co.za/cms/section/8-

5 Full CPD Cycle as a Registered Professional Engineer

6 What are the risks?