

The tutorial exercise task on report writing

1. Carefully read the article given below until you comprehend it.
2. Re-produce the article and transform it into a technical report with the following:
 - i. suitable title
 - ii. abstract of suitable content and length
 - iii. broken up into suitable sections with section titles and paragraphs
 - iv. suitable conclusion
 - v. the numerical referencing method changed to the Havard system of referencing

The report is to be submitted to the tutor who will organise peer assessment and discussion of the errors and other feedback on report writing.

Students who enrol into the first year of study in the School of Electrical and Information Engineering at the University of the Witwatersrand Johannesburg, have wide ranging competencies as they come from diverse cultures, and educational backgrounds [1]. Most South African tertiary education institutions encounter the problem of enrolling some students that are under-prepared for tertiary education [2,3] and yet ironically some would have had very good passes at Matric. Common problems in such students include serious deficiencies in English language (important since the language of instruction at the University is English), communication skills, computer literacy, critical thinking and intrinsic motivation. A disturbingly big number of students either drop off during the course of the 1st year or fail and get excluded from the University at the end of the year. Some are those students that manage to scrape through the early engineering education years (1st and 2nd) but fail dismally in the senior years (3rd & 4th). This is because the early years could be regarded as an extension of the high school education as the focus is mainly on further strengthening basic science knowledge. Students thus comfortably continue with their high school learning and examination techniques characterised by memorisation and “spotting” [2]. In contrast in the senior years of study (3rd and 4th) however, students are supposed to demonstrate the Washington accord requirements for communication skills, independent problem-solving and life-long learning approach [1,4]. When the under-preparedness problem is not solved early enough, there will be increased failure rate in the 3rd and 4th years of study. The undesired consequences such as reduced throughput, increased average cost of education per student, loss of student bursary funding and the adverse psychological effects on students become major challenges for all stakeholders in the engineering education. In cognisance of these challenges the ELEN1001 course has evolved over the years in such a way that enables the students to be appropriately initiated into the university engineering curriculum. This is achieved through three key elements of the Course: Student mentorship; Critical thinking; and Engineering skills development. In the student mentorship programme students are offered opportunities to be nurtured and provided with moral support during the difficult transition period. Among others, issues such as wrong attitude, social and personal problems are attended to. In the Critical thinking component students are taught to think ‘out of the box’, read and comprehend effectively, communicate effectively as well as develop and deliver good arguments. In the Engineering design skills component students are introduced to the concept of engineering design through being tasked to tackle suitable design projects. These projects usually take the form of investigation tasks and the design, built and test projects. All the staff members and most of the senior post-graduate students in the School participate in this course as tutors/mentors. With such wonderful ingredients and recipe for success, it is very disappointing that a large number of 1st years still fail to pass and proceed to 2nd year. Could it be that some students, due to poor career guidance, wrongly choose to study electrical engineering yet they don’t have the right brains and attitude? Could it be that there are some students who are pre-destined for failure in life no matter what? Could it be that the high school education is so un-uniform across the country that some students are fooled into thinking that they are adequately prepared for university education and yet they are not? Could it be that the university education

standard is so high that there is a serious mismatch with high school education system? These and many other related questions continue to puzzle all the stakeholders in university engineering education and therefore is a popular subject of research by many academics. While one can be optimistic that total solutions will eventually be found, meanwhile the reality is that those students that fall victim may be adversely affected for life. It is therefore wished that while people may spend endless time and other resources pointing at this or that, apportioning blame from this and/or that etc, students shouldn't be among such people. They should instead realise that the 'ball is in their court' and therefore strive to succeed under all possible odds. This starts by doing, and doing correctly, everything that is supposed to be done – and this indeed includes this report writing task.

- 1] G. Gibbon, IR Jandrell and D. Rubin: *"Shifting the Responsibility of Learning in First-Year Electrical Engineering Students"*, Innovations 2006: World Innovations in Engineering Education and Research, Arlington, VA, USA, chap. 4, pp. 27-38.
 - [2] G. Gibbon, Ken Nixon and Mia Nixon: *"Analysing the raw material: Who are our first years"*, Proceedings of the 3rd African Regional Conference on Engineering Education, Pretoria, September 2006.
 - [3] D.M. Fraser: *"Coping with a diverse student body in engineering education"*, *Proceeding of the 1st African Regional Conference on Engineering Education and Sub-regional Workshop on new Engineering Curriculum*, Lagos, pp. 69-82
 - [4] <http://www.washingtonaccord.org/Washington-Accord/>, last accessed 19/01/2010
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