

**UNIVERSITY OF SWAZILAND**  
**MAIN EXAMINATION, SECOND SEMESTER MAY 2012**

**FACULTY OF SCIENCE**

**DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING**

**TITLE OF PAPER: PROFESSIONAL PRACTICE**

**COURSE CODE: EE411**

**TIME ALLOWED: THREE HOURS**

**INSTRUCTIONS:**

1. There are seven questions in this paper. Answer Question 1 and any  
FOUR questions
2. Each question carries 20 marks.

**THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION  
HAS BEEN GIVEN BY THE INVIGILATOR**

**THIS PAPER CONTAINS THREE (3) PAGES INCLUDING THIS PAGE**

**QUESTION ONE - COMPULSORY** (20 marks)

Briefly answer the following questions within the context of professional engineering practice:

- (a) What is a professional engineer? How does an engineering graduate become a professional engineer?
- (b) What is a contract? Why is a contract important in governing the relationship between an engineer and a client?
- (c) Stakeholders have proposed that Swaziland should have an “Engineering Council”  
What is an Engineering council? List three of its main functions.
- (d) An engineer can be charged for misconduct, negligence or incompetence. For any two of these charges, give an example of the type of incident which would lead to each of these charges.

**QUESTION TWO**

What are the attributes of a profession? Explain why engineering is called a profession?

*(20 marks)*

**QUESTION THREE**

Sustainable development involves balancing social, economic and environmental issues. Explain how economic issues are interrelated with social and environmental issues.

*(20 marks)*

**QUESTION FOUR**

Why should sustainable energy matter to an engineer? How can an engineer contribute to sustainable energy?

*(20 marks)*

**QUESTION FIVE**

Discuss the role of engineers in the development of any society.

*(20 marks)*

**QUESTION SIX**

- (a) What is Intellectual Property?
- (b) Describe two ways in which an engineer can protect his/her Intellectual Property.
- (c) Does protection of intellectual property discourage innovation? What do you think?

*(20 marks)*

**QUESTION SEVEN**

**Engineer's Dispute With A Client Over Design**

Client hires Engineer A to design a particular project. Engineer A develops what he believes to be the best design and meets with the Client to discuss the design. After discussing the design and specifications, the Client and Engineer A are involved in a dispute concerning the ultimate success of the project.

The Client believes Engineer A's design is too large and complex and seeks a simpler solution to the project. Engineer A believes a simpler solution will not achieve the result and could actually endanger the public.

The client demands that Engineer A delivers over to him the work he did so that it can be presented to Engineer B to assist Engineer B in completing the project to his (client's) liking.

The client is willing to pay for the work done by Engineer A but will not do so until Engineer A delivers over what he has done.

Engineer A refuses to deliver the drawings.

**Question:** Would it be ethical for Engineer A to deliver over the work to the client? Discuss from all points of view (i.e Engineer A's, Engineer B's, Client's, Profession's, Society's point of view).