CRITERION 3. STUDENT OUTCOMES

A. Student Outcomes

By participating in various academic programs in EESP, the students will attain the basic competency in the field of electrical engineering, and at least one of the following options:

Option 1: Electricity and Electrical Power Engineering

1. an ability to design and to analyse electricity systems both tecnically and economically
2. a mastery in power system generation, instalation, transmission and distribution, and power station operation
3. a mastery in electric machines applications, maintenance, control and operation.

Option 2: Telecomunication and Information System

4. a mastery in system management and control of network, hardware and multimedia software applications in telecommunication and information systems
5. an ability to anticipate, to formulate and to solve problems related to the network, hardware and multimedia software applications in telecommunication and information systems
6. an ability to participate in the science and technology development, especially in the area of telecommunication and information systems, and always being adaptive to the advancement of science and technology in this area

Option 3: Computer Engineering

7. an ability to utilize the computer software packages for modeling and simulation of various electrical engineering problems, and general engineering problems
8. a mastery in concepts, design and application of the digital computer hardware

Option 4: Control Engineering

9. a mastery in the basic control theory, both classical and modern control theory, and its application in the control systems analysis and design

Option 5: Electronic Engineering

10. a mastery on the knowhow of design and application of electronic devices, circuits and systems, and microelectronics, including the utilization of software packages for integrated circuit layout design

In addition to the specific student outcomes above, the following ABET criteria are also made as references:

General Enginering Criteria (ABET)

1. An ability to apply knowledge of mathematics, science, and engineering
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability

4. An ability to function on multi-disciplinary teams
5. An ability to identify, formulate, and solve engineering problems
6. An understanding of professional and ethical responsibility
7. An ability to communicate effectively
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
9. A recognition of the need for, and an ability to engage in life-long learning
10. A knowledge of contemporary issues
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Electrical Engineering Criteria (ABET)

1. Broad knowledge over all areas within electrical engineering (power engineering, telecommunication, control engineering, electronics and computer enginering)
2. Depth of knowledge in at least one area.
3. Knowledge of probability and statistics, including applications to electrical and computer systems
4. Knowledge of mathematics through differential and integral calculus
5. Knowledge of basic sciences, computer science, and engineering sciences necessary to analyze and design complex electrical and electronic devices, software, and systems containing hardware and software components
6. Knowledge of advanced mathematics, linear algebra, complex variables
7. Sufficient background for graduate study

B. Relationship of Student Outcomes to Program Educational Objectives

Not yet submitted for Readiness Review.