1. Description of the Electrical Engineering Course

Innovations in Electrical Engineering have fundamentally transformed all aspects of our lives. Some of these are electrical power generation and transmission, analog- and digital-electronics, digital computers, the intelligence embedded into our home appliances and automobiles, healthcare technology, wired and wireless communications, and the internet. All of these innovations and technologies have solid roots in the engineering and sciences that are integral to the study of Electrical Engineering.

Electronic engineering is a specific concentration in electrical engineering study, encompasses all areas of research, development, design, and operation of electrical and electronic systems and their components, including software. Emphasis in such varied areas as bioengineering, circuit theory, communication sciences, computers and automation, control systems, electromagnetic fields, energy sources and systems, and materials and electronic devices is available.

The major in Electrical Engineering builds on foundations in math and physics. It prepares students for a broad set of career opportunities in information, systems and physical electronic technology and applied science. Electrical Engineering is where the physical world and the virtual world connect.

Fields of activities

Electrical engineers hold many unusual and challenging positions in the aerospace, chemical, nuclear, automotive, medical, metallurgical, textile, railway, petroleum, and other basically nonelectrical industries, as well as in computers, electronics, communications, power, and other electrical industries. Their activities span industrial activity, research, development, design, production, marketing, operation, field test, and maintenance of many types of equipment for industry, farm, government, and home.

Electrical Engineers typically do the following:

- Analyze customer needs and determine electrical system requirements, capacity, and cost to develop a system plan
- Design new methods to use electrical power to develop or improve products
- Design electronic circuit, products or systems for commercial, industrial, medical, military, or scientific applications
- Develop maintenance and testing procedures for electrical systems, electronic components and equipment
- Evaluate systems and recommend design modifications or equipment repair
- Inspect electronic equipment, instruments, and systems to make sure they meet safety standards and applicable regulations
- Plan and develop applications and modifications for electronic properties used in parts and systems to improve technical performance
- Investigate complaints from customers or the public, evaluate problems, and recommend solutions
- Work with project managers on production efforts to ensure that projects are completed satisfactorily, on time, and within budget

2. Qualification system in in Indonesia

2.1 General

IULI's bachelor's study program in Electrical Engineering can be completed after taking a minimum of 144 credit hours (Satuan Kredit Semester / SKS), offered in eight regular semesters.

An academic year at IULI consists of two regular semesters, plus optional short semester(s). The first regular semester starts in July and ends in December. The second semester starts in January and ends in June. The academic activities within a semester takes 16 weeks.

DAAD Federal Ministry of Education and Research
Coordinator TECHNISCHE UNIVERSITÄT ILMENAU
PO Box 150, BSD CPA 15330
Tel. +62 21 50588000
+62 852 12318000
info@iuli.ac.id; www.iuli.ac.id
IULI – Eco Campus, The Breeze
Jl. BSD Grand Boulevard
BSD City 15345
Island of Java

In a regular semester, 1 SKS of a course is equivalent to 1 hour lecturing, 1 hour structured learning (tutorial, homework or field trip) and 1 hour independent learning per week. Therefore, a student may enroll for between 20 and 24 SKS in each of semesters 1, 2, 3, 4, 5, and 7.

One semester is equivalent to 30 ECTS (European Credit Transfer System) or 1 SKS is approximately equivalent to 1,25 ECTS.

2.1. Scores (Refer to the Academic Regulations)

Grade Letter	Grade Wording	IULI	Indonesian Grade Points (GP)	Germany	Grade Description	Students represen-tation
A	Excellent	86-100	4	1	Outstanding performance	10%
B	Good	71 – 85	3,0 – 3,9	2	Performance is considerably higher than the average requirements	25%
C	Satisfactory	56 – 70	2,0 – 2,9	3	Performance meets the average requirements	30%
D	Poor	46 – 59	1,0 – 1,9	4	Performance is poor and likely to lead to failure	25%
F	Fail	< 45	0	5	Performance does not meet the minimum criteria. Considerable further work is required	10%

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