Career Opportunities

The Electrical Engineering Program prepares students to operate in a wide selection of job areas. Some of the areas of career opportunities are:

Electric power generation sector.

- Transmission systems and substations for high and medium voltage.
- Load dispatch centers.
- Electrical complexes that are heavily dependent on electric power utilization.
- Safe and effective distribution and consumption of electric power in residential areas and in factories.
- Energy resource management, and programs for energy conservation.

Electrical Engineering Program

The Electrical Engineering (EE) Program was established in 2007. It offers a Bachelor of Science (B.Sc.) degree in Electrical Engineering. The Electrical Engineering Program produced its first graduates in the spring of 2013. In 2018, the program was approved by the Accreditation Board for Engineering and Technology (ABET). In Summer 2023, The Program was accredited from ETEC/NCAAA.

Mission

The Mission statement of the Electrical Engineering Program is: To prepare electrical engineering graduates that compete in the labor market, sustain self-learning and professional development, and contribute to scientific research and community service.

Prospective Employers

EE Program Graduates can hold positions in many different types of sectors, such as:

Industry:

- Petroleum industry,
- Chemical industry,
- Mining industry,
- Automotive industry,
- Paper industry, etc.

Services:

- All ministries,
- Hospitals,
- Consulting,
- Maintenance and operating institutions,
- Training, etc.

Defense :

- Army,
- Aviation,
- Marine, etc.

جامعة الحدود الشمالية
NORTHERN BORDER UNIVERSITY
كلية الهندسة

College of Engineering
Electrical Engineering Program

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Facilities of Electrical Engineering Program

The Electrical Engineering Program has already established 11-labs that support its educational and research activities. In addition to specialized equipment, all the labs are equipped with basic utilities such as DC and AC power mains, voltage regulators, function generators, oscilloscopes, analog and digital multi meters for measuring the basic quantities (voltage, current, and resistance).

Labs also have a number of integrated personal computer systems to run educational software. Every student has a good chance to have a hands-on experience and practice experimental work as the number of students per experimental station ranges from two to four only. These labs are:

1. Power System Laboratory
2. Electrical Machine Laboratory
3. Power Electronics Laboratory
4. Electrical and Electronics Measurements Laboratory
5. Basic Electrical Engineering Laboratory
6. Electronics Laboratory
7. Computers Sciences Laboratory
8. Communications Laboratory
9. Digital Systems Laboratory
10. Microprocessors and Microcontrollers Laboratory
11. Automatic Control Laboratory

Electrical Engineering Program Objectives

The Electrical Engineering Program at NBU expects the graduates within a few years after graduation to achieve the following objectives:

- **PO1**. Serve competently in the professional career and academia by demonstrating high-quality knowledge and skills in the Electrical Engineering field.
- **PO2**. Display self-learning, research, and critical thinking capability and take initiative in advancing their education and professional standing.
- **PO3**. Function as a team member with the capability for leadership and effective communication.
- **PO4**. Exhibit commitment to social responsibilities, ethical values, and meaningful community contributions.

Program Graduate Attributes

The Graduate Attributes of the Electrical Engineering Program (EEP) are prepared to develop:

- **GA1**: National identity
- **GA2**: Self-management
  : Critical thinking
- **GA3**: Digital culture
- **GA4**: Teamwork
- **GA5**: Entrepreneurship
- **GA6**: Communication skills

Electrical Engineering Program Learning Outcomes

The Electrical Engineering Program learning outcomes ensure that students have the knowledge, skills, and competences at the time of degree completion. Their statements are as follow:

- **K1** - Demonstrate a coherent and broad body of knowledge in basic sciences, mathematics, and concepts in the electrical engineering discipline.
- **S1 [ABERT SO1]-** Identify, formulate, and solve complex engineering problems by applying engineering, science, and mathematics principles.
- **S2 [ABERT SO2]**- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- **S3 [ABERT SO6]**- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to conclude.
- **S4 [ABERT SO3]**- Communicate effectively with a range of audiences.
- **V1 [ABERT SO4]**- Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- **V2 [ABERT SO5]**- Function effectively on a team whose members provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- **V3 [ABERT SO7]**- Acquire and apply new knowledge as needed, using appropriate learning strategies