Yarmouk University

Hijjawi Faculty for Engineering Technology

Electrical Power Engineering Department

Bachelor of Electrical Power Engineering

Program Overview

Brief introduction

The Electrical Power Engineering program is one of the most prominent engineering programs offered by the Hijjawi Faculty for Engineering Technology at Yarmouk University. The program aims to prepare engineers specializing in the design, operation, and maintenance of power systems, including transmission and distribution networks and power generation stations and . It strives to graduate engineers capable of effectively contributing to the development of the energy sector and supporting national and global efforts to achieve sustainable development.

Academic and practical goals

• Equipping students with theoretical knowledge and practical skills to understand the operation of power systems and their components.

• Preparing students to design efficient and sustainable energy systems that meet society's growing energy needs.

• Training graduates to work in the design and operation of power generation, transmission, and distribution networks.

• Enhancing students' ability to solve engineering problems using scientific methodologies and modern technologies.

• Supporting innovation and scientific research in the fields of energy and electricity.

• Graduating engineers with high professional ethics and leadership skills, enabling them to contribute to societal development.

Importance of the program and its role in the job market

The Electrical Power Engineering program plays a vital role in meeting the demands of the local, regional, and international job markets. It is a cornerstone for producing professionals who address critical energy challenges, foster sustainable development, and contribute significantly to the evolving job market.

Its importance and contributions can be summarized as follows:

1. Addressing Market Needs

2. Supporting Jordan's Energy Sector

3. Global Relevance

4. Contributing to Renewable Energy Initiatives

5. Enhancing Industrial Growth

6. Broad Career Opportunities

7. Developing Problem-Solving Skills

8. Supporting Innovation and Research

Career Opportunities

Available job opportunities

The program offers graduates exceptional opportunities to work in:

- Power generation, transmission, and distribution companies.
- Electrical and electronic industries.
- The renewable energy sector (e.g., solar and wind energy).
- Engineering design and consultancy firms.
- Academic research and educational institutions.

Sectors where graduates can work

Graduates of an Electrical Power Engineering department have a wide range of career opportunities across various sectors. Some key sectors include:

1. Power Generation
2. Transmission and Distribution
3. Energy Systems and Automation
4. Consulting and Design
5. Manufacturing
6. Utilities
7. Research and Development
8. Construction and Infrastructure
9. Government and Regulatory Bodies
10. Education and Training
11. IT and Software for Energy

Graduates may also find opportunities in interdisciplinary fields such as artificial intelligence in energy systems, energy economics, and sustainable development.

Success stories of graduates

The Electrical Power Engineering program at Yarmouk University has produced numerous successful graduates who have excelled in various fields locally, regionally, and internationally. Below are examples of common success stories and areas where graduates have made a significant impact:

1. Leadership in Power and Energy Companies

• Managing large-scale projects in Jordanian Electric Power Company (JEPCO), Electricity distribution Company (EDCO) and Irbid Distribution Electrical Company (IDECO)

• Leading roles in multinational energy firms such as Siemens, ABB, and Schneider Electric.

2. Entrepreneurship in Renewable Energy

Some graduates have founded successful renewable energy companies, focusing on solar and wind power projects. Their ventures have supported the growing demand for sustainable energy in Jordan and the Middle East.

3. Academic Excellence

Alumni have pursued advanced degrees at prestigious universities worldwide, becoming professors, researchers, and innovators in energy systems, automation, and emerging technologies.

4. Contributions to National Projects

Graduates have played key roles in:

• Jordan's Renewable Energy Program, including designing and implementing solar power projects in remote areas.

• Enhancing the efficiency of national power grids, integrating renewable energy sources, and introducing smart grid technologies.

5. Global Engineering Careers

With international recognition of the program (e.g., ABET accreditation), alumni have secured positions in:

• International engineering firms.

• Power plant operations in the Gulf region.

• Renewable energy initiatives in Europe and North America.

6. Innovation in Technology and Automation

Some graduates have excelled in automation and smart technologies, contributing to the development of industrial control systems and intelligent energy solutions.

7. Recognition in Professional Organizations

Alumni have received awards and recognition from professional bodies like IEEE, Jordan Engineers Association, and international engineering competitions for their innovative work.

8. Contributions to Government and Policy

Graduates have held significant positions in governmental bodies, influencing energy policies, regulations, and sustainable development plans in Jordan and neighboring countries.

Learning Environment and Facilities

Laboratories and facilities

- Electrical Circuits Laboratory
- DC Circuits Laboratory
- Automatic Control Systems Laboratory
- Power Electronics Laboratory
- Instruments and Measurements Laboratory
- Electrical Machines Laboratory
- Computer Applications in Power Systems Laboratory
- Electrical Protection Laboratory

Overview of the Study Plan

The program covers a wide range of topics, including:

- Electrical and electronic circuits.
- Power systems.
- Electrical machines.
- Industrial control systems.
- Renewable energy and energy efficiency.
- Analysis, design, and protection of power networks

The study plan consists of 167 credit hours distributed across four main components:

1. University Requirements (27 Credit Hours):

A set of courses aimed at developing general and cognitive skills, such as:

Communication skills in Arabic, language and Islamic culture, basic computer skills and humanities and social sciences.

2. College Core Requirements (30 Credit Hours):

Courses that build a solid foundation in engineering, including:

- General Physics.
- General Chemistry.
- Engineering Mathematics.
- Fundamentals of Computer Programming.
- Engineering Drawing.
- Introduction to Engineering.

3. Compulsory Major Requirements (101 Credit Hours):

These specialized courses cover both theoretical and practical aspects of power engineering, including:

- Fundamentals of electrical circuit analysis.
- Electrical machines.
- Design and analysis of transmission and distribution networks.
- Theoretical and practical principles of automatic control systems.
- Applications of electronic components in power systems.
- Protection of transmission and distribution networks from electrical faults.
- Graduation projects and practical training.

4. Elective Major Requirements (9 Credit Hours):

These courses allow students to deepen their knowledge in advanced or diverse topics based on their professional and academic interests, such as quality and design of power systems.

Accreditation and Quality

Academic accreditations

The department has several academic accreditations that enhance the quality of its educational program and grant its degree wide recognition both locally and internationally. These accreditations include:

1. Local Accreditation

- Accredited by the Jordanian Ministry of Higher Education and Scientific Research.
- Complies with the standards of the Accreditation and Quality Assurance Commission for Higher Education Institutions in Jordan.

2. International Accreditation

- The department is accredited by the Accreditation Board for Engineering and Technology (ABET), a significant international accreditation that ensures the quality of engineering programs and aligns with global standards.

3. Professional Accreditations or Memberships

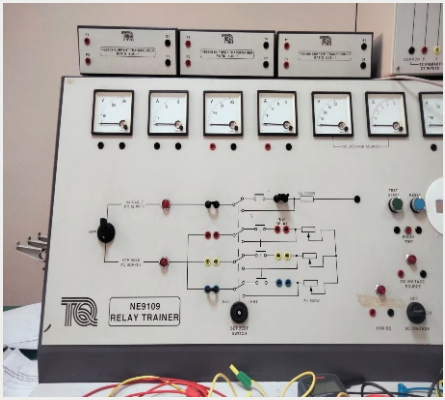
- Partnerships with the Jordan Engineers Association (JEA) to ensure the program meets the association's requirements and facilitates graduates' registration as engineers.
- Collaborations with professional organizations such as IEEE to support student activities and connect with the global engineering community.

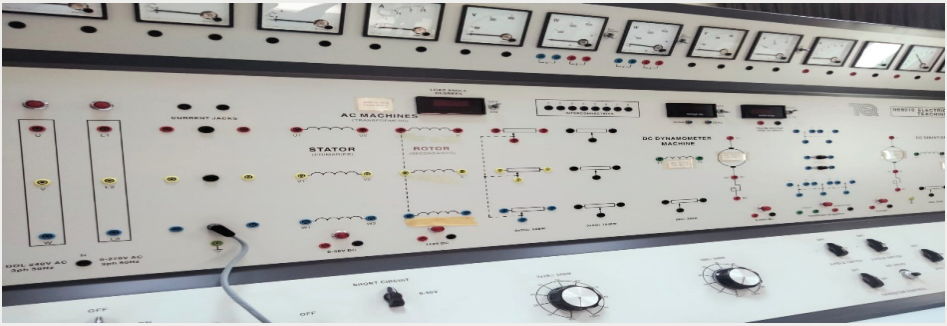
4. Internal Accreditation from the University

- The department adheres to the quality standards set by Yarmouk University, ensuring the delivery of a high-quality educational program.

International recognitions

The Electrical Power program offered by the department has been accredited by the Engineering Accreditation Commission of ABET,https://www.abet.org, under the General Criteria and the Electrical, Computer, Communications, Telecommunications Engineering Program Criteria.The accreditation was approved in August 2023.





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