

Bachelor of Engineering (Hons) Electrical and Electronic Engineering **KP/JPS(KA5910)06/10**

Engineers are often responsible for designing and maintaining infrastructure such as the electrical power systems used by the general public, and in setting up their management structures and maintenance processes. This programme provides an opportunity for students to obtain knowledge on the latest technologies of electricity generation, transmission, distribution and state-of-the-art electronics within the context of developing technology and human resources. It aims to train prospective engineers to design better systems and structures for better operational safety and efficiency.

Programme Objectives

The Programme Objectives describe the career and professional accomplishments that the Electrical and Electronic Engineering programme would prepares the graduates to achieve in a few years after their graduation. The graduates of Electrical and Electronic Engineering Programme will:

1. Use the latest knowledge and techniques in developing, maintaining, servicing, sales and marketing, and research of electrical and electronics technologies.
2. Assume technical, managerial and ethical roles effectively in the organizations they work in.
3. Be involved in the affairs of professional institutions and keep abreast of the nation's needs and developments, and provide services to the engineering communities and the nation.

Programme Outcomes

Upon completing this programme, the student is expected to attain the following:

- i. Ability to apply acquired fundamental knowledge of science and engineering;
- ii. Possess the relevant technical skills in electrical and electronic engineering;
- iii. Ability to identify, formulate and solve problems of high- and low-power circuits and systems;
- iv. Ability to design and evaluate electrical and/or electronic systems based on system approach;
- v. Ability to communicate effectively;
- vi. Ability to function effectively as an individual and in a group;
- vii. Ability to understand and commit to prevailing professional and ethical responsibilities
- viii. Be aware of the current good practices of electrical & electronic engineering for sustainable development;
- ix. Recognize the importance of and be able to engage in life-long learning;
- x. Be aware that a professional engineer's work have social, cultural, global and environmental ramifications;

Careers

Graduates from this professional engineering programme may seek employment in the following areas:

Technologies • Design, develop and test equipment • Estimate time and cost of engineering projects • Scientific R&D activities • Semiconductor and electronic component manufacturing •

Application of control engineering techniques • Systems engineering, operation, maintenance of power plant control and instrumentation systems • Power electronics and motor drives • Power generation of national infrastructure, construction of electric transmission and distribution systems, substation equipment - circuit breaker disconnect switch, power system protection, low voltage distribution system • Electric vehicle in mass rapid transit intercity commuter train, urban LRT; Services • Sales and marketing in Electrical and Electronics • Develop maintenance schedules and service.

Subjects

Year 1

Mathematics for Engineering I
Mathematics for Engineering II
Circuit Theory
Basic Electronics
Engineering Computing
Power Systems
Programming Techniques
Digital Electronics
Signals, Circuits and Systems
Analogue Electronics
English for Engineering
Basic Economics, Accounting and Management

Year 2

Numerical Methods and Statistics
Analogue Communications
Introductory Electromagnetics
Microprocessor & Microcontroller Systems
Electrical Machines
Electromagnetic Fields and Waves
Communication Systems
Process Control and Instrumentation
Power Electronics and Drive
Electrical Drives
Digital Signal Processing

Elective Engineering Subjects* (Choose 2 subjects)

Integrated Circuit Design
Multimedia Technology
Solid State Electronics
Optics and Optoelectronics

Year 3

Industrial Training
Control Systems
Power Transmission & Distribution
Engineer in Society

Elective Engineering Subjects* (Choose 3 subjects)

Automation & Robotics
Renewable Energy
Power Protection & Switchgear
Transient Stability and Controls

Year 4

Project
High Voltage Engineering
Electrical Design and Utilisation
Computer Architecture
Law for Engineers

Elective Engineering Subjects* (Choose 1 subject)

Quality and Reliability Engineering
Embedded System Design
Project Management

*Subject to change/availability

MQA Subjects

Bahasa Kebangsaan/Foreign Language
Pengajian Malaysia
Pendidikan Moral/Pengajian Islam

University Subjects

Co-Curriculum
Sun Zi's Art of War and Business Strategies