

DIPLOMA IN ELECTRICAL ENGINEERING (DET)

INTRODUCTION

Electrical engineering is the field of study which generally deals with the application of electrical and electronics towards designing, testing and development of circuitry and equipment for well-defined engineering activities. It requires the application of scientific and engineering knowledge and methods combined with practical skills in supporting well-defined engineering activities to prepare the students for their future role in the industry.

The Electrical Engineering diploma graduates of the Polytechnic's Ministry of Education Malaysia are exposed to a comprehensive curriculum consisting of courses in personal development, mathematics, science and electrical discipline as well as workplace competencies requirements. Graduates of the electrical engineering diploma programme will be equipped with specialized knowledge and skills which include power engineering, green technology, energy efficiency, computer technology, communication, medical electronics, optoelectronic and industrial automation.

The Diploma in Electrical Engineering is a three-year full-time programme comprising of five semesters course work with one full semester of industrial training.

JOB PROSPECT

This programme provides the knowledge and skills in electrical engineering that can be applied to a broad range of careers in most power generation provider and manufacturing industries. The knowledge and skills that the students acquire from the programme will enable them to participate in the job market as:-

- a. Electrical/Electronic Technician
- b. Electrical Engineering Service Advisor
- c. Technical Assistant
- d. Electrical/Electronic Engineering Supervisor
- e. Assistant Engineer

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The engineering programme should produce balanced TVET graduates who are:

- PEO1: practicing technician in electrical engineering related field
PEO2: contributing to society with professional ethic and responsibilities
PEO3: engaging in enterprising activities that apply engineering knowledge and technical skills
PEO4: engaging in activities to enhance knowledge for successful career advancement

PROGRAMME LEARNING OUTCOMES (PLO)

Upon completion of the programme, students should be able to:

- PLO1: apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices
- PLO2: identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)
- PLO3: design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (DK5)
- PLO4: conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements
- PLO5: apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)
- PLO6: demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7)
- PLO7: understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)

- PLO8: understand and commit to professional ethics and responsibilities and norms of technician practice
- PLO9: function effectively as an individual, and as a member in diverse technical teams
- PLO10: communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions
- PLO11: demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member or leader in a technical team and to manage projects in multidisciplinary environments
- PLO12: recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge

Notes:

- DK 1: A descriptive, formula-based understanding of the natural sciences applicable in a sub-discipline
- DK 2: Procedural mathematics, numerical analysis, statistics applicable in a subdiscipline
- DK 3: A coherent procedural formulation of engineering fundamentals required in an accepted sub-discipline
- DK 4: Engineering specialist knowledge that provides the body of knowledge for an accepted sub-discipline
- DK 5: Knowledge that supports engineering design based on the techniques and procedures of a practice area
- DK 6: Codified practical engineering knowledge in recognised practice area
- DK 7: Knowledge of issues and approaches in engineering technician practice: ethics, financial, cultural, environmental and sustainability impacts