

# MECHANICAL ENGINEERING DEPARTMENT

## DIPLOMA IN MECHANICAL ENGINEERING

DKM

### PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The Diploma in Mechanical Engineering programme should produce balanced and competent technical workers who are:

- 1 Equipped with industry-relevant knowledge and skills in mechanical engineering field.
- 2 Engaging on lifelong and continuous learning to enhance knowledge and skills.
- 3 Instilled with entrepreneurial skills and mind set in the real working environment.
- 4 Established strong linkage with society and players in the industry.

### PROGRAMME LEARNING OUTCOMES (PLO)

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

- 1 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.
- 2 Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4).
- 3 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).
- 4 Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.
- 5 Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6).
- 6 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).
- 7 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).
- 8 Understand and commit to professional ethics and responsibilities and norms of technician practice.
- 9 Function effectively as an individual, and as a member in diverse technical teams.
- 10 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.
- 11 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.
- 12 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 sub-discipline
- 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