ENGINEERING TECHNOLOGY ACCREDITATION COUNCIL ETAC

POLITEKNIK MALAYSIA PORT DICKSON

DEPARTMENT OF MECHANICAL ENGINEERING

DAD	DEM	DKM	DTP
DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE)	DIPLOMA IN MECHATRONIC ENGINEERING	DIPLOMA IN MECHANICAL ENGINEERING	DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)

PROGRAMME EDUCATIONAL OBJECTIVES PEO

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

PROGRAMME LEARNING OUTCOMES PLO

Upon completion the programme, students should be able to:

	DAD	DEM	DKM	DTP
PLO 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	**Knowledge:** 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	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	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
PLO 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)	**Problem analysis:** Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)
PLO 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)	**Design / development of solution:** 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)	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)	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)
PLO 4	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements	**Investigation:** Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements
PLO 5	Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	**Modern tool usage:** Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)
PLO 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)	**The engineer and society:** 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)	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)	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)
PLO 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)	**Environment and sustainability:** 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)	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)	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)
PLO 8	Understand and commit to professional ethics and responsibilities and norms of technician practice	**Ethics:** Understand and commit to professional ethics and responsibilities and norms of technician practice	Understand and commit to professional ethics and responsibilities and norms of technician practice	Understand and commit to professional ethics and responsibilities and norms of technician practice
PLO 9	Function effectively as an individual, and as a member in diverse technical teams	**Individual and team work:** Function effectively as an individual, and as a member in diverse technical teams	Function effectively as an individual, and as a member in diverse technical teams	Function effectively as an individual, and as a member in diverse technical teams
PLO 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	**Communication:** 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	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	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
PLO 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	**Project management and finance:** 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	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	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
PLO 12	Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge	**Life long learning:** Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge	Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge	Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge

DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE) (DAD)

POLITEKNIK MALAYSIA
PORT DICKSON

4 PEO — PROGRAMME EDUCATIONAL OBJECTIVES

The Diploma in Mechanical Engineering (Automotive) programme should produce balanced and competent TVET workers who are:

01
Equipped with industry-relevant knowledge and skills in mechanical engineering field

02
Engaging on lifelong and continuous learning to enhance knowledge and skills

03
Instilled with entrepreneurial skills and mind set in the real working environment

04
Established strong linkage with society and players in the industry

12 PLO — PROGRAMME LEARNING OUTCOMES

Upon completion the programme, students should be able to:

01 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

02 Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)

03 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)

04 Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

05 Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)

06 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)

07 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)

08 Understand and commit to professional ethics and responsibilities and norms of technician practice

09 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

DIPLOMA IN MECHATRONIC ENGINEERING (DEM)

POLITEKNIK MALAYSIA
PORT DICKSON

4 PEO — PROGRAMME EDUCATIONAL OBJECTIVES

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

01 Equipped with industry-relevant knowledge and skills in mechatronic engineering field

02 Engaging on lifelong and continuous learning to enhance knowledge and skills

03 Instilled with entrepreneurial skills and mind set in the real working environment

04 Established strong linkage with society and players in the industry

12 PLO — PROGRAMME LEARNING OUTCOMES

Upon completion the programme, students should be able to:

01 **Knowledge:** 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

02 **Problem analysis:** Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)

03 **Design / development of solution:** 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)

04 **Investigation:** Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

05 **Modern tool usage:** Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)

06 **The engineer and society:** 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)

07 **Environment and sustainability:** 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)

08 **Ethics:** Understand and commit to professional ethics and responsibilities and norms of technician practice

09 **Individual and team work:** Function effectively as an individual, and as a member in diverse technical teams

10 **Communication:** 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 **Project management and finance:** 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 **Life long learning:** Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge

DIPLOMA IN MECHANICAL ENGINEERING (DKM)

POLITEKNIK MALAYSIA
PORT DICKSON

4 PEO — PROGRAMME EDUCATIONAL OBJECTIVES

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

01 Equipped with industry-relevant knowledge and skills in mechanical engineering field

02 Engaging on lifelong and continuous learning to enhance knowledge and skills

03 Instilled with entrepreneurial skills and mind set in the real working environment

04 Established strong linkage with society and players in the industry

12 PLO — PROGRAMME LEARNING OUTCOMES

Upon completion the programme, students should be able to:

01 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

02 Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)

03 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)

04 Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

05 Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)

06 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)

07 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)

08 Understand and commit to professional ethics and responsibilities and norms of technician practice

09 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

DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING) (DTP)

POLITEKNIK MALAYSIA
PORT DICKSON

4 PEO PROGRAMME EDUCATIONAL OBJECTIVES

The Diploma in Mechanical Engineering (Manufacturing) programme should produce Assistant Mechanical Engineers who are:

01
Equipped with industry-relevant knowledge and skills in mechanical engineering field

02
Engaging on lifelong and continuous learning to enhance knowledge and skills

03
Instilled with entrepreneurial skills and mind set in the real working environment

04
Established strong linkage with society and players in the industry

12 PLO PROGRAMME LEARNING OUTCOMES

Upon completion the programme, students should be able to:

01 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

02 Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)

03 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)

04 Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

05 Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)

06 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)

07 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)

08 Understand and commit to professional ethics and responsibilities and norms of technician practice

09 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