



**UniKL**  
UNIVERSITI  
KUALA LUMPUR



# ZOOMING THROUGH WITH **FRENCH FORMULA**

UNIVERSITI KUALA LUMPUR  
MALAYSIA FRANCE INSTITUTE (UniKL-MFI)

[www.unikl.edu.my](http://www.unikl.edu.my)

# UNIVERSITI KUALA LUMPUR KAMPUS CAWANGAN MALAYSIA FRANCE INSTITUTE (UniKL-MFI)

Universiti Kuala Lumpur Kampus Cawangan Malaysia France Institute (UniKL-MFI) is an advanced technical training center in the fields of engineering technology specializing in French state-of-the-art technology in creativity and innovation. We are committed towards providing education based on industrial technology in automation, mechanical, manufacturing and maintenance.

The UniKL-MFI campus is strategically located in Bandar Baru Bangi, a fast developing industrial-academia style town about 32 km from Kuala Lumpur city center and only 40 minutes away from the Kuala Lumpur International Airport (KLIA).

The campus is fully equipped with industrial related equipment that will enhance students learning experience of industrial job-related work in water engineering, automation (Robotic, Electrical, Mechatronics and Electromechanical), and Mechanical (Heating and Air-Conditioning Ventilation, Automotive, Machine Manufacturing, Welding, Metal Fabrication and Mechanical Engineering).

The collaboration was incorporated in February 1995 as a co-operation project between the Malaysian government and the French government. The French partners are represented by JF Bocard and the Association de Formation Professionnelle de l'Industrie Rhodanienne (AFPI) and Malaysia is represented by Majlis Amanah Rakyat (MARA). Courses offered are at diploma to degree levels. Short courses and customized courses are also available.

## PROGRAMS OFFERED

**Bachelor of Mechanical Engineering Technology (Industrial Refrigeration and Air Conditioning Systems) with Honours**  
JPT/BPP (R3/522/6/0024) 09/29, MQA/FA 11539

**Bachelor of Mechanical Engineering Technology (Machine Manufacturing) with Honours**  
JPT/BPP (R3/521/6/0034) 05/29, MQA/FA 13102

**Bachelor of Engineering Technology (Automation and Robotics) with Honours**  
JPT/BPP (R3/523/6/0087) 09/29, MQA/FA 11538

**Bachelor of Engineering Technology (Welding and Quality Inspection) with Honours**  
JPT/BPP (R3/521/6/0033) 05/29, MQA/FA 11538

**Bachelor of Automotive Engineering Technology (Maintenance) with Honours**  
JPT/BPP (R2/525/6/0056) 07/26, MQA/FA 11537

**Bachelor of Mechatronics Engineering Technology with Honours**  
JPT/BPP (R2/523/6/0177) 06/24, MQA FA 11536

**Bachelor of Electromechanical Engineering Technology with Honours**  
JPT/BPP (R/523/6/0152) 01/25, MQA/FA 3398

**Bachelor of Water Resources Engineering Technology with Honours**  
JPT/BPP(N/523/6/0315) 01/27, MQA/PA 12955

**Bachelor of Engineering Technology (Water Engineering and Energy) with Honours**  
JPT/BPP (N/522/6/0081) 01/27 MQA PA12954

**Bachelor of Mechanical Engineering with Honours**  
JPT/BPP (R3/521/6/0029) 05/29, MQA/FA 1625

**Diploma of Engineering Technology in Air Conditioning and Refrigeration**  
JPT/BPP(R/522/4/0043) 06/24, MQA A 10027

**Diploma of Engineering Technology in Welding**  
JPT/BPP(R2/521/4/0076) 06/24, MQA A 9970

**Diploma of Engineering Technology in Automotive Maintenance**  
JPT/BPP (R2/524/4/0046) 06/24, MQA A 10023

## ENTRY REQUIREMENTS

### DIPLOMA PROGRAMS

- Pass in SPM or its equivalent with at least credits (minimum Grade C and higher) in Mathematics and Natural Sciences or Technical Based Subjects; OR
- Pass in O-Level with minimum Grade C in three (3) subjects including Mathematics and science or technical based subjects; OR
- Accredited Certificate in Engineering, Engineering Technology, Technical or Malaysian Skills Certificate Level 3 with PT3; or its equivalent; OR
- Recognized related Technical/Vocational/Skills qualifications AND an adequate and relevant bridging programme; OR
- Pass Technical/Vocational/Skills qualifications and recognized and approve by UniKL Senate
- Pass in Sijil Vokasional Malaysia (SVM) qualification been recognized by government of Malaysia and according to approval by UniKL Senate. SVM is recognized as equivalent to 3 credits SPM for candidates who obtain;
  - Academic CGPA is equal to or greater than 2.00;
  - Vocational CGPA is equal to or greater than 2.67 and competent in all vocational modules;
  - Credit in Bahasa Melayu with SVM Code 1104;
  - Pass in Sejarah for graduate cohort 2013-2016

## BACHELOR OF ENGINEERING TECHNOLOGY PROGRAMS

- Pass in STPM/Matriculation/Foundation or its equivalent, with minimum CGPA 2.0 and at least Grade C in Mathematics and one relevant Science subject; OR
- Pass in International Baccalaureate (IB) with at least 24 points; OR
- Pass in A-Level with minimum Grade D in Mathematics one (1) relevant Science subject; OR
- Pass in Sijil Tinggi Agama Malaysia (STAM) with minimum grade of Jayyid and pass SPM or its equivalent with minimum Grade C in Mathematics and one relevant Physical Science subjects (i.e; Physic, Chemistry & etc); OR
- Recognized Diploma in Engineering/Engineering Technology or its equivalent with CGPA 2.0; OR
- Recognized related Technical/Vocational/Skills Diploma with CGPA 2.0; OR
- Pass the DKM/DLKM/DVM with a minimum CGPA of 2.50 subject to the approval of the Senate / Academic Board of the relevant institution; OR Pass the DKM/DLKM/DVM with a minimum CGPA of 2.00 have at least two (2) years of work experience in the related field.

## BACHELOR OF MECHANICAL ENGINEERING WITH HONOURS

- Pass in STPM/Matriculation/Foundation or its equivalent, with a minimum CGPA 2.0 and a grade C in Mathematics and one (1) of the Physical Science subjects (i.e; Physic, Chemistry and etc); OR
- Pass in International Baccalaureate Diploma (IBD) with minimum of 24 points and attained a minimum score of 4 in Mathematics and one (1) of the Physical Science subjects (i.e; Physic, Chemistry and etc); OR
- Pass in A-Level with minimum Grade D in Mathematics and one (1) of the Physical Science subjects (i.e; Physic, Chemistry and etc); OR
- Pass in Sijil Tinggi Agama Malaysia (STAM) with minimum grade of Jayyid and pass SPM or equivalent with minimum Grade C in Mathematics and one relevant Physical Science subjects (i.e; Physic, Chemistry & etc); OR
- Pass in Diploma (Level 4, KKM) related to Engineering/Engineering Technology fields from higher education provider recognized by Government of Malaysia with a minimum CGPA 2.00.

## BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (INDUSTRIAL REFRIGERATION AND AIR CONDITIONING SYSTEMS) WITH HONOURS

JPT/BPP (R3/522/6/0024) 09/29, MQA/FA 11539

### PROGRAM CONTENTS

#### YEAR 1 - SEMESTER 1

- Falsafah & Isu Semasa / Philosophy & Current Issue
- Calculus 1
- Fundamental English
- Professional English 1
- Engineering Ethics
- Occupational Safety and Health
- Refrigeration Fundamentals

#### YEAR 1 - SEMESTER 2

- Electrical Principles
- Material Science
- Static and Dynamics
- Workshop Practice
- Engineering Drawing
- Co-curriculum 2
- Penghayatan Etika & Peradaban / Bahasa Melayu Komunikasi 2

#### YEAR 2 - SEMESTER 3

- Calculus 2
- Introduction to Industrial Information Technology
- Introduction and Study of Air-Conditioning System
- Heating and Cooling Load of Building
- Computer Assisted Design & Simulation 1
- RAC System Studies & Troubleshooting
- Isu-Isu Kontemporari Muslim di Malaysia / Culture & Lifestyle in Malaysia 2

#### YEAR 2 - SEMESTER 4

- Statistics for Engineering Technology
- Ducting and Piping Network
- Engineering Thermofluids
- Practical Work 1
- Project Management
- Professional English 2

#### YEAR 3 - SEMESTER 5

- Production of Refrigeration
- Computer Assisted Design and Simulation 2
- Applied Acoustic and Vibration
- Applied Thermodynamics
- Technopreneurship
- Elective 1
- French 1

#### YEAR 3 - SEMESTER 6

- Final Year Project 1
- Practical Work 2
- Heat Exchanger and Transportation of Air-Conditioning Technology and Control
- Refrigeration System
- Innovation Management
- French 2
- Elective 2

#### YEAR 4 - SEMESTER 7

- ACIR Capstone
- Air Distribution and Secondary Fluids
- Final Year Project 2
- Elective 3

#### YEAR 4 - SEMESTER 8

- Industrial Training

### ELECTIVE SUBJECTS

- Indoor Air Quality
- Biological Applications and Refrigeration
- Cold Room and Refrigerated Showcase
- Green Energy and Environment
- Building Energy Simulation
- Building Life Cycle Assessment

### CAREER PATH

- Product Engineer – Heat Transfer Products Group
- Industrial Maintenance Refrigeration Tech
- Project Engineer – Refrigeration New
- Product Development Industrial
- Energy Engineer
- Operating Engineer – Licensed
- Design Engineer

## BACHELOR OF AUTOMOTIVE ENGINEERING TECHNOLOGY (MAINTENANCE) WITH HONOURS

JPT/BPP (R2/525/6/0056) 07/26, MQA/FA 11537

### PROGRAM CONTENTS

#### YEAR 1 - SEMESTER 1

- Falsafah & Isu Semasa / Philosophy & Current Issue
- Calculus 1
- Fundamental English
- Professional English 1
- Occupational Safety & Health
- Engineering Ethics
- Petrol Engine Technology

#### YEAR 1 - SEMESTER 2

- Electrical Principles
- Material Science
- Static and Dynamics
- Workshop Practice
- Engineering Drawing
- Co-curriculum 2
- Penghayatan Etika & Peradaban / Bahasa Melayu Komunikasi 2

#### YEAR 2 - SEMESTER 3

- Calculus 2
- Introduction to Industrial Information Technology
- Vehicle Transmission 1
- Autotronics 1
- Isu-Isu Kontemporari Muslim di Malaysia / Culture & Lifestyle in Malaysia 2

#### YEAR 2 - SEMESTER 4

- Statistic for Engineering Technology Vehicle Chassis 1
- Engineering Thermofluids
- Professional English 2
- Autotronics 2
- Vehicle Transmission 2

**YEAR 3 - SEMESTER 5**

- Project Management
- Automotive Management
- Vehicle Chassis 2
- Engine Management and Control Technology
- Technopreneurship
- Elective 1
- French 1

**YEAR 3 - SEMESTER 6**

- Internal Combustion Engine
- Manufacturing Process
- Vehicle Air-Conditioning and Climate Control System
- Vehicle Standard and Regulation
- Final Year Project 1
- Elective 2
- French 2

**YEAR 4 - SEMESTER 7**

- Innovation Management
- Automotive Competency Assessment
- Alternative Fuel Vehicles
- Final Year Project 2
- Elective 3

**YEAR 4 - SEMESTER 8**

- Industrial Training

**ELECTIVE SUBJECTS**

- Production Planning and Control
- Vehicle Collision Repair Technology
- Engine Performance Enhancement
- Vehicle Styling
- Vehicle Dynamics
- Vehicle Structures Design

**CAREER PATH**

- Maintenance Engineer
- Field Engineer Automotive Mechanic
- Software Test/Automation Engineer
- Automotive Project Engineer
- Senior Test Development Engineer

**BACHELOR OF ELECTROMECHANICAL ENGINEERING TECHNOLOGY WITH HONOURS**

JPT/BPP (R/523/6/0152) 01/25, MQA/FA 3398

**PROGRAM CONTENTS****YEAR 1 - SEMESTER 1**

- Falsafah & Isu Semasa / Philosophy & Current Issue
- Calculus 1
- Fundamental English
- Professional English 1
- Electrical Principles
- Occupational Safety & Health
- Engineering Ethics

**YEAR 1 - SEMESTER 2**

- Circuit Theory
- Material Science
- Static and Dynamics
- Workshop Practice
- Engineering Drawing
- Co-curriculum 2
- Penghayatan Etika & Peradaban / Bahasa Melayu Komunikasi 2

**YEAR 2 - SEMESTER 3**

- Calculus 2
- Analog and Digital Electronics
- Electromagnetism
- Introduction to Industrial Information Technology
- Instrumentation
- Isu-Isu Kontemporari Muslim di Malaysia / Culture & Lifestyle in Malaysia 2

**YEAR 2 - SEMESTER 4**

- Statistical for Engineering Technology
- Electrical Machines
- Strength of Materials
- Power Electronics and Drives
- Automation Technology
- Professional English 2

**YEAR 3 - SEMESTER 5**

- Project Management
- Technopreneurship
- Pneumatics and Hydraulics
- Mechanics and Machine Design
- Programmable Logic Controller and Industrial Networking
- French 1
- Elective 1

**YEAR 3 - SEMESTER 6**

- Electronic Design 1
- Signal and System
- Electrical Drives and Maintenance
- Electrical Power
- Final Year Project 1
- French 2
- Elective 2

**YEAR 4 - SEMESTER 7**

- Electromechanical System and Maintenance
- Innovation Management
- Control Technology
- Final Year Project 2
- Elective 3

**YEAR 4 - SEMESTER 8**

- Industrial Training

**ELECTIVE SUBJECTS**

- Rolling Stock
- Signaling and Communication in Transportation
- Sustainable Energy

**CAREER PATH**

- Electromechanical Engineer
- Electrical Engineer
- Mechanical Engineer
- Electrical Equipment Engineer
- Operation Engineer
- Failure Analysis Engineer
- Systems Engineer

**BACHELOR OF ENGINEERING TECHNOLOGY (AUTOMATION AND ROBOTICS) WITH HONOURS**

JPT/BPP (R3/523/6/0087) 09/29, MQA/FA 13103

**PROGRAM CONTENTS****YEAR 1 - SEMESTER 1**

- Falsafah & Isu Semasa / Philosophy & Current Issue
- Calculus 1
- Fundamental English
- Professional English 1
- Engineering Ethics
- Occupational Safety & Health
- Mechatronics System Design

**YEAR 1 - SEMESTER 2**

- Electrical Principles
- Static and Dynamics
- Workshop Practice
- Engineering Drawing
- Basic Programming
- Co-curriculum 2
- Penghayatan Etika & Peradaban / Bahasa Melayu Komunikasi 2

**YEAR 2 - SEMESTER 3**

- Material Science
- Calculus 2
- Analog and Digital Electronics
- Computer Aided Design and Engineering 1
- Automation Technology
- Isu-Isu Kontemporari Muslim di Malaysia / Culture & Lifestyle in Malaysia 2

**YEAR 2 - SEMESTER 4**

- Statistic for Engineering Technology
- Mechanics and Machine Design
- Project Management
- Electrical Machines
- Electronic Design 1
- Control Systems
- Professional English 2

**YEAR 3 - SEMESTER 5**

- IOT & Data Analytics
- Production and Operation Management
- Robotics
- Programmable Logic Controller & Industrial Networking
- Embedded System Technology
- French 1
- Elective 1

**YEAR 3 - SEMESTER 6**

- Computer Integrated
- Manufacturing
- Totally Integrated Automation
- Final Year Project 1
- Technopreneurship
- French 2
- Elective 2

**YEAR 4 - SEMESTER 7**

- Flexible Manufacturing System
- Innovation Management
- Mobile Robotics
- Final Year Project 2
- Elective 3

**YEAR 4 - SEMESTER 8**

- Industrial Training

**ELECTIVE SUBJECTS**

- Computer Aided Design 2
- Artificial Intelligence
- Real Time System
- Machine Vision Technology
- Computer Aided Production Management
- Work Study

**CAREER PATH**

- Robotics Engineer
- Automation Control / Robotics Tech
- Industrial Automation Developer
- Automation Engineer
- Electrical/Controls & Automation Engineer

## BACHELOR OF ENGINEERING TECHNOLOGY (WELDING AND QUALITY INSPECTION) WITH HONOURS

JPT/BPP (R3/521/6/0033) 05/29, MQA/FA 11538

### PROGRAM CONTENTS

YEAR 1 - SEMESTER 1	YEAR 1 - SEMESTER 2	YEAR 2 - SEMESTER 3	YEAR 2 - SEMESTER 4
<ul style="list-style-type: none"><li>Falsafah &amp; Isu Semasa / Philosophy &amp; Current Issue</li><li>Calculus 1</li><li>Fundamental English</li><li>Professional English 1</li><li>Engineering Ethics</li><li>Occupational Safety &amp; Health</li><li>Design and Fabrication (Vessel)</li></ul>	<ul style="list-style-type: none"><li>Electrical Principles</li><li>Material Science</li><li>Static and Dynamics</li><li>Workshop Practice</li><li>Engineering Drawing</li><li>Co-curriculum 2</li><li>Penghayatan Etika &amp; Peradaban / Bahasa Melayu Komunikasi 2</li></ul>	<ul style="list-style-type: none"><li>Calculus 2</li><li>Introduction to Industrial Information Technology</li><li>Strength of Materials</li><li>Manufacturing Process</li><li>Welding and Cutting Process</li><li>Isu-Isu Kontemporari Muslim di Malaysia / Culture Lifestyle in Malaysia</li></ul>	<ul style="list-style-type: none"><li>Statistics for Engineering Technology</li><li>Welding Practices</li><li>Fundamental Metallurgy</li><li>Welding Mechanics</li><li>Joining Technology</li><li>Professional English 2</li></ul>
YEAR 3 - SEMESTER 5	YEAR 3 - SEMESTER 6	YEAR 4 - SEMESTER 7	YEAR 4 - SEMESTER 8
<ul style="list-style-type: none"><li>Project Management</li><li>Welding Metallurgy</li><li>Corrosion</li><li>DT and NDT</li><li>Technopreneurship</li><li>French 1</li><li>Elective 1</li></ul>	<ul style="list-style-type: none"><li>Welding Inspection and Technology</li><li>Design and Fabrication (Structure)</li><li>Welding Reclamation</li><li>Failure Analysis</li><li>Elective 2</li><li>Final Year Project 1</li><li>French 2</li></ul>	<ul style="list-style-type: none"><li>Innovation Management</li><li>Welding Procedure Construction</li><li>Fabrication and Application</li><li>Engineering</li><li>Final year Project 2</li><li>Elective 3</li></ul>	<ul style="list-style-type: none"><li>Industrial Training</li></ul>

#### ELECTIVE SUBJECTS

- Advanced Welding Process
- CAD Modelling and CAE
- Robotic Welding
- Advanced Manufacturing Technology
- Finite Element Analysis in Welding
- Introduction to Underwater Welding (Wet Welding)

#### CAREER PATH

- Welding/Quality Engineer
- Welding Engineer
- Project Inspection Supervisor
- Quality Specialist Welding Auditing
- Welding Field Engineer

## BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (MACHINE MANUFACTURING) WITH HONOURS

JPT/BPP (R3/521/6/0034) 05/29, MQA/FA 13102

### PROGRAM CONTENTS

YEAR 1 - SEMESTER 1	YEAR 1 - SEMESTER 2	YEAR 2 - SEMESTER 3	YEAR 2 - SEMESTER 4
<ul style="list-style-type: none"><li>Falsafah &amp; Isu Semasa / Philosophy &amp; Current Issue</li><li>Applied Calculus 1</li><li>Fundamental English</li><li>Professional English 1</li><li>Engineering Drawing</li><li>Occupational Safety &amp; Health</li><li>Engineering Ethics</li></ul>	<ul style="list-style-type: none"><li>Electrical Principle</li><li>Material Science</li><li>Static and Dynamics</li><li>Workshop Practice</li><li>Pneumatics and Hydraulics</li><li>Co-curriculum 2</li><li>Penghayatan Etika &amp; Peradaban / Bahasa Melayu Komunikasi 2</li></ul>	<ul style="list-style-type: none"><li>Applied Calculus 2 (Mechanical)</li><li>Introduction to Industrial Information Technology</li><li>Strength of Materials</li><li>Machine Tools Technology</li><li>Applied Engineering Metrology</li><li>Isu-Isu Kontemporari Muslim di Malaysia / Culture &amp; Lifestyle in Malaysia 2</li></ul>	<ul style="list-style-type: none"><li>Statistics for Engineering Technology</li><li>CNC and CAD CAM Technology</li><li>Computer Aided Design and Engineering 1</li><li>Mechanics and Machine Design</li><li>Manufacturing Process</li><li>Professional English 2</li></ul>
YEAR 3 - SEMESTER 5	YEAR 3 - SEMESTER 6	YEAR 4 - SEMESTER 7	YEAR 4 - SEMESTER 8
<ul style="list-style-type: none"><li>Project Management</li><li>Jigs and Fixtures Design</li><li>Engineering Thermofluids</li><li>Fundamental Metallurgy</li><li>Technopreneurship</li><li>Elective 1</li><li>French 1</li></ul>	<ul style="list-style-type: none"><li>Automation Technology</li><li>Advanced Manufacturing Technology</li><li>Modern Machining</li><li>Machine Tool Design</li><li>French 2</li><li>Elective 2</li><li>Final Year Project 1</li></ul>	<ul style="list-style-type: none"><li>Innovation Management</li><li>Manufacturing Design and Process</li><li>Mechanical Engineering Laboratory</li><li>Final year Project 2</li><li>Elective 3</li></ul>	<ul style="list-style-type: none"><li>Industrial Training</li></ul>

#### ELECTIVE SUBJECTS

- Robotics
- Computer Aided Design 2
- DT and NDT
- Production and Operation Management
- Robotic Welding
- Computer Aided Engineering 2

#### CAREER PATH

- Manufacturing Engineer
- Design Engineer
- Hydraulics Engineer
- Manufacturing Process Engineer
- Manufacturing Automation Engineer

## BACHELOR OF MECHATRONICS ENGINEERING TECHNOLOGY WITH HONOURS

JPT/BPP (R2/523/6/0177) 06/24, MQA FA 11536

### PROGRAM CONTENTS

YEAR 1 - SEMESTER 1	YEAR 1 - SEMESTER 2	YEAR 2 - SEMESTER 3	YEAR 2 - SEMESTER 4
<ul style="list-style-type: none"><li>Falsafah &amp; Isu Semasa / Philosophy &amp; Current Issue</li><li>Calculus 1</li><li>Fundamental English</li><li>Professional English 1</li><li>Engineering Ethics</li><li>Occupational Safety &amp; Health</li><li>Mechatronics System Design</li></ul>	<ul style="list-style-type: none"><li>Electrical Principles</li><li>Basic Programming</li><li>Static and Dynamics</li><li>Workshop Practice</li><li>Engineering Drawing</li><li>Co-curriculum 2</li><li>Penghayatan Etika &amp; Peradaban / Bahasa Melayu Komunikasi 2</li></ul>	<ul style="list-style-type: none"><li>Material Science</li><li>Calculus 2</li><li>Analog and Digital Electronics</li><li>Computer Aided Design &amp; Engineering 1</li><li>Automation Technology</li><li>Isu-Isu Kontemporari Muslim di Malaysia / Culture &amp; Lifestyle in Malaysia 2</li><li>Professional English 2</li></ul>	<ul style="list-style-type: none"><li>Statistics for Engineering Technology</li><li>Mechanics and Machine Design</li><li>Project Management</li><li>Electrical Machines</li><li>Electronics Design 1</li><li>Mechatronic System Design</li></ul>
YEAR 3 - SEMESTER 5	YEAR 3 - SEMESTER 6	YEAR 4 - SEMESTER 7	YEAR 4 - SEMESTER 8
<ul style="list-style-type: none"><li>Power Electronics and Drives</li><li>Robotics</li><li>Production &amp; Operation Management</li><li>Programmable Logic Controller &amp; Industrial Networking</li><li>Control System</li><li>Elective 1</li><li>French 1</li></ul>	<ul style="list-style-type: none"><li>Computer Integrated Manufacturing</li><li>Totally Integrated Automation</li><li>Technopreneurship</li><li>Final Year Project 1</li><li>French 2</li><li>Elective 2</li></ul>	<ul style="list-style-type: none"><li>Innovation Management</li><li>Automated System Diagnostic and Maintenance</li><li>Manufacturing Process</li><li>Final Year Project 2</li><li>Elective 3</li></ul>	<ul style="list-style-type: none"><li>Industrial Training</li></ul>

## ELECTIVE SUBJECTS

- Mobile Robot
- Industrial Instrumentation
- Artificial Intelligence
- Advanced Manufacturing Technology
- Advanced Manufacturing Technology
- Process Control
- Digital Control
- Industrial Ergonomics

## CAREER PATH

- Mechatronics Mechanical Engineer
- Mechatronics Design Engineer
- Mechatronics Engineer
- Lead System Design Engineer - Mechatronics

## BACHELOR OF ENGINEERING TECHNOLOGY (WATER ENGINEERING AND ENERGY) WITH HONOURS

JPT/BPP (N/522/6/0081) 01/27, MQA/PA12954

### PROGRAM CONTENTS

#### YEAR 1 - SEMESTER 1

- Fundamental English
- Calculus 1
- Professional English 1
- Occupational Safety and Health
- Falsafah & Isu Semasa / Philosophy & Current Issue
- Electrical Principal
- Engineering Ethics
- French 1

#### YEAR 1 - SEMESTER 2

- Penghayatan Etika & Peradaban / Bahasa Melayu Komunikasi 2
- Workshop Practice
- Engineering Drawing
- French 2
- Materials Science
- Statics and Dynamics
- Co-curriculum 2

#### YEAR 2 - SEMESTER 3

- Calculus 2
- Introduction to Industrial Information Technology
- Isu-Isu Kotemporari Muslim di Malaysia / Culture Lifestyle in Malaysia
- Fluid Mechanics
- Sustainable Energy

#### YEAR 2 - SEMESTER 4

- Statistics for Engineering Technology Instrumentation Systems
- Electrical Machine
- Professional English 2
- Hydraulic and Hydrology
- Fundamental of Civil and Structural Design
- Industrial Control Technology

#### YEAR 3 - SEMESTER 5

- Elective 1
- Technopreneurship
- Project Management
- Power Electronics and Auxiliary Equipment
- Economics and Energy
- GIS and Remote Sensing for Water Engineering

#### YEAR 3 - SEMESTER 6

- Elective 2
- Final Year Project 1
- Power System Design and Operation
- PLC and Industry Networking
- SCADA for Water Technology
- Hydraulic Structures and Hydropower Design

#### YEAR 4 - SEMESTER 7

- Final Year Project 2
- Innovation Management
- Hydropower Potential and Feasibility Study
- Environmental Impact Assessment (EIA)
- Energy Management and Efficiency
- Elective 3

#### YEAR 4 - SEMESTER 8

- Industrial Training

## ELECTIVE SUBJECTS

- Advanced Energy Conversions
- Water Quality Analysis
- Reservoirs Operations
- Marine Renewable Energy
- Computer Modelling Simulation Engineering (CMSE)
- Life Cycles Analysis

## CAREER PATH

- Hydro Operation and Maintenance Engineer
- Hydroelectric Plant Engineer
- Power Plant Engineer
- Hydro Plan Engineer
- Water Resource Engineer
- Water Distribution Engineer

## BACHELOR OF WATER RESOURCES ENGINEERING TECHNOLOGY WITH HONOURS

JPT/BPP (N/523/6/0315) 01/27, MQA/PA12955

### PROGRAM CONTENTS

#### YEAR 1 - SEMESTER 1

- Fundamental English
- Calculus 1
- Professional English 1
- Engineering Ethics
- Occupational Safety and Health
- Electrical Principles
- Falsafah & Isu Semasa / Philosophy & Current Issue

#### YEAR 1 - SEMESTER 2

- Penghayatan Etika & Peradaban / Bahasa Melayu Komunikasi 2
- Engineering Drawing
- French 2
- Workshop Practice
- Materials Science
- Statics and Dynamics
- Co-curriculum 2

#### YEAR 2 - SEMESTER 3

- Calculus 2
- Introduction to Industrial Information Technology
- Isu-Isu Kotemporari Muslim di Malaysia / Culture Lifestyle in Malaysia
- Fluid Mechanics
- Analog and Digital Electronics
- Water Economics

#### YEAR 2 - SEMESTER 4

- Statistics for Engineering Technology Instrumentation Systems
- Electrical Machines
- Professional English 2
- Hydraulic and Hydrology
- Integrated Water Resource Management
- Industrial Control Technology

#### YEAR 3 - SEMESTER 5

- Elective 1
- Project Management
- Technopreneurship
- Planning and Operation of Water and Wastewater System
- Water Distribution and Network
- GIS and Remote Sensing for Water Engineering

#### YEAR 3 - SEMESTER 6

- Elective 2
- Final Year Project 1
- PLC and Industrial Networking
- Design of Water and Wastewater Treatment Plant
- SCADA for water Technology
- Water Quality Analysis

#### YEAR 4 - SEMESTER 7

- Final Year Project 2
- Elective 3
- Innovation Management
- Urban Water Systems Design
- Environmental Impact Assessment (EIA)
- Water Quality Monitoring and Assessment

#### YEAR 4 - SEMESTER 8

- Industrial Training

## ELECTIVE SUBJECTS

- Automation Technology
- Application of Artificial Intelligence
- Modern Control
- Image Processing
- Computer Integrated Manufacturing
- Computer Modelling Simulation Engineering (CMSE)
- Alternative Water Resources
- Sludge Management
- Disaster and Emergency Response Plan

## CAREER PATH

- Water and Wastewater Engineer
- Water and Wastewater Service Engineer
- Consultant Engineer
- Water Engineering Design Engineer
- Surface Water Engineer
- Process Automation Engineer

## BACHELOR OF MECHANICAL ENGINEERING WITH HONOURS

JPT/BPP (R3/521/6/0029) 05/29, MQA/FA 1625

### PROGRAM CONTENTS

#### YEAR 1 - SEMESTER 1

- Computer Programming for Engineers
- Fundamental English
- Professional English 1
- Engineering Practice and Professionalism
- Mathematics for Engineers 1
- Falsafah & Isu Semasa / Philosophy & Current Issue

#### YEAR 1 - SEMESTER 2

- Mathematics for Engineers 2
- Engineering Drawing and CAD
- Electrical Engineering
- Metrology and Engineering Workshop
- Materials Engineering
- Statics

#### YEAR 2 - SEMESTER 3

- Vector Calculus
- Solid Mechanics 1
- Electronics Engineering
- Thermodynamics 1
- Manufacturing Processes
- Isu-Isu Kotemporari Muslim di Malaysia / Culture Lifestyle in Malaysia
- Language Elective (French 1 / Mandarin 1 / etc)

#### YEAR 2 - SEMESTER 4

- Dynamics 1
- Fluid Mechanics 1
- Thermodynamics 2
- Solid Mechanics 2
- New Product Development
- Isu-Isu Kotemporari Muslim di Malaysia / Culture Lifestyle in Malaysia

**YEAR 3 - SEMESTER 5**

- Fluid Mechanics 2
- Heat and Mass Transfer
- Dynamics 2
- Machine Component Design
- Occupational Safety & Health
- Project and Industrial Management
- Professional English 2

**YEAR 3 - SEMESTER 6**

- Noise and Vibration
- Computer Aided Engineering Analysis
- Control Systems
- Measurement and Instrumentation Systems
- Statistics for Engineers
- Co-curriculum 2

**INTER SEMESTER**

- Industrial Training

**YEAR 4 - SEMESTER 8**

- Engineers in Society
- Final Year Research Project 2
- Integrated Design Project 2
- Innovation Management
- Elective 3

**YEAR 4 - SEMESTER 7**

- Final Year Research Project 1
- Integrated Design Project 1
- Numerical Methods for Engineers
- Technopreneurship
- Elective 1
- Elective 2

**SEM. 7 ELECTIVE COURSES: IR 4.0 EMBEDDED**

- CNC and CAD/CAM Technology
- Industrial Automation and Robotics
- Additive Manufacturing
- Artificial Intelligence
- Object Oriented Programming for Mechanical Engineers (OOPME)
- Advanced Energy Conversions

**SEM. 8 ELECTIVE COURSES**

- Quality Engineering
- Tool Design
- Reliability and Maintenance Engineering
- Fracture and Failure Analysis
- Non-Destructive testing
- Air-Conditioning Equipment and Systems

**CAREER PATH**

- Aerospace Engineer
- Automotive Engineer
- Contracting Civil Engineer
- Maintenance Engineer
- Mechanical Engineer
- Production Manager
- Control and Instrumentation Engineer
- Technical Sales Engineer

**DIPLOMA OF ENGINEERING TECHNOLOGY IN WELDING**

JPT/BPP(R2/521/4/0076) 06/24, MQA A 9970

**PROGRAM CONTENTS****YEAR 1 - SEMESTER 1**

- Technical Mathematics 1
- OAW and SMAW Practices
- Engineering Drawing
- Welding Processes and Consumable Designation
- Interpersonal Skills
- Amalan Islam di Malaysia / Religious Practices in Malaysia
- Co-curriculum 1

**YEAR 1 - SEMESTER 2**

- Welding Joint, Symbols and Blueprint Reading
- GTAW and GMAW Practices
- Technical Mathematics 2
- French 1
- Pengajian Malaysia 2 / Bahasa Melayu Komunikasi 1
- Competency English
- Computer Aided Drafting

**YEAR 2 - SEMESTER 3**

- Plant Piping and Pressure Vessel Drawing
- Statics and Dynamics
- Occupational, Safety and Health Management
- Communication English 1
- Weld Defects, DT and NDT
- Metallurgy
- French 2

**YEAR 2 - SEMESTER 4**

- Welding Metallurgy
- Welding Procedures and Specifications
- Introduction to Entrepreneurship
- Welding Joint Analysis 1
- Welding Management
- Welding Mechanics
- Communication English 2

**YEAR 3 - SEMESTER 5**

- Welding Joint Analysis 2
- Welding Inspection and Testing
- Final Year Project
- Elective

**YEAR 3 - SEMESTER 6**

- Industrial Training

**ELECTIVE SUBJECTS**

- Industrial Engineering
- Basic Pressure Vessel Design
- Technical Mathematics 3

**CAREER PATH**

- Welder
- Pipe Welder
- Plant Mechanic
- Robotic Holder

**DIPLOMA OF ENGINEERING TECHNOLOGY IN AIR CONDITIONING AND REFRIGERATION**

JPT/BPP(R/522/4/0043) 06/24, MQA A 10027

**PROGRAM CONTENTS****YEAR 1 - SEMESTER 1**

- Technical Mathematics 1
- Engineering Drawing
- Refrigeration Fundamentals and Tools
- Occupational, Safety and Health Management
- Interpersonal Skills
- Amalan Islam di Malaysia / Religious Practices in Malaysia
- Co-curriculum 1

**YEAR 1 - SEMESTER 2**

- RAC Installation, Commissioning and Troubleshooting
- Fabrication and Fitting
- Technical Mathematics 2
- Statics and Dynamics
- French 1
- Competency English
- Pengajian Malaysia 2

**YEAR 2 - SEMESTER 3**

- Fluid Mechanics
- Acoustic and Vibration
- Thermodynamics and Heat Transfer
- Communication English 2
- Heat Transfer & Heat Exchanger
- Mandarin 2/French 2

**YEAR 2 - SEMESTER 4**

- Cooling Load
- Ducting and Piping System
- RAC System Studies
- RAC Practical Service and Maintenance
- Introduction to Entrepreneurship
- Communication English 2
- Project Management

**ELECTIVE SUBJECTS**

- Thermal Storage
- Building Management System
- Transport Air Conditioning
- Introduction of Cold Room
- Technical Mathematics 3

**CAREER PATH**

- Air Conditioning Equipment
- Mechanic
- Refrigeration Service Technician
- Lead HVAC Installer
- HVAC Commercial/Industrial Service Technician

**DIPLOMA OF ENGINEERING TECHNOLOGY IN AUTOMOTIVE MAINTENANCE**

JPT/BPP(R/522/4/0043) 06/24, MQA A 10027

**PROGRAM CONTENTS****YEAR 1 - SEMESTER 1**

- Technical Mathematics 1
- Engineering Drawing
- Electrical Principles
- Engine Fundamental
- Interpersonal Skills
- Amalan Islam di Malaysia / Religious Practices in Malaysia
- Co-curriculum 1

**YEAR 1 - SEMESTER 2**

- Computer Assisted Design Autotronic
- Engine Technology
- Technical Mathematics 2
- Pengajian Malaysia 2 / Bahasa Melayu Komunikasi 1
- Competency English
- French 1

**YEAR 2 - SEMESTER 3**

- Drivetrain System 1
- Automotive Air Conditioning System
- Chasis and Braking System 1
- Occupational, Safety and Health Management
- Communication English 1
- Statics and Dynamics
- French 2

**YEAR 2 - SEMESTER 4**

- Drivetrain System 2
- Automotive Management
- Chasis and Braking System 2
- SI Engine Management and Control System
- CI Engine Management and Control System
- Introduction to Entrepreneurship
- Communication English 2

**ELECTIVE SUBJECTS**

- Engineering Ethics
- Vehicle Service and Maintenance
- Technical Mathematics 3

**CAREER PATH**

- Maintenance Repair
- Automotive Technician
- Technician – Plant Maintenance
- Automotive Lube Technician



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