

UNDERGRADUATE
**ACADEMIC
HANDBOOK**

SESSION 2026/2027

**FAKULTI TEKNOLOGI DAN KEJURUTERAAN
MEKANIKAL**



اونیورسیتی تیکنیکل ملیسیا ملاک

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

Edition: 2026/2027

Attention

All information in this version of the handbook is true at the time of publishing.
The Faculty of Mechanical Technology and Engineering reserves the right to make amendments to the guide as needed without prior announcement. This Academic Handbook is a reference for students from the 2026/2027 Session intake and remains valid until the end of their study.

For further information, please contact:

Dean
Faculty of Mechanical Technology and Engineering
Universiti Teknikal Malaysia Melaka
Hang Tuah Jaya, 76100
Durian Tunggal
MELAKA

Email: ftkm@utem.edu.my
Website: ftkm.utem.edu.my

Contents

DEAN'S FOREWORD	5
FACULTY OF MECHANICAL TECHNOLOGY AND ENGINEERING MANAGEMENT TEAM	6
BACKGROUND OF UNIVERSITI TEKNIKAL MALAYSIA MELAKA	7
BACKGROUND OF FACULTY OF MECHANICAL TECHNOLOGY AND ENGINEERING	9
UNDERGRADUATES PROGRAMMES AND ADMISSION REQUIREMENTS	10
BACHELOR OF MECHANICAL ENGINEERING WITH HONOURS (BMKU).....	11
CURRICULUM STRUCTURE FOR BMKU PROGRAMME	1
BACHELOR OF AUTOMOTIVE ENGINEERING WITH HONOURS (BMKK).....	1
CURRICULUM STRUCTURE FOR BMKK PROGRAMME	4
BACHELOR OF MECHANICAL ENGINEERING WITH HONOURS (BMKU) – PART TIME	9
CURRICULUM STRUCTURE FOR BMKU PROGRAMME - PART TIME	13
BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY WITH HONOURS (BMKV)	19
CURRICULUM STRUCTURE FOR BMKV PROGRAMME.....	22
BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (MAINTENANCE TECHNOLOGY) WITH HONOURS (BMKM).....	27
CURRICULUM STRUCTURE FOR BMKM PROGRAMME.....	30
BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (REFRIGERATION AND AIR- CONDITIONING SYSTEM) WITH HONOURS (BMKH).....	35
CURRICULUM STRUCTURE FOR BMKH PROGRAMME.....	38
BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (AUTOMOTIVE TECHNOLOGY) WITH HONOURS (BMKA).....	43
CURRICULUM STRUCTURE FOR BMKA PROGRAMME.....	46
BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY WITH HONOURS (BMKV) – PART TIME	51
CURRICULUM STRUCTURE FOR BMKV PROGRAMME – PART TIME.....	55

BACHELOR OF TECHNOLOGY IN AIR CONDITIONING AND REFRIGERATION WITH HONOURS (BMKS).....	61
CURRICULUM STRUCTURE FOR BMKS PROGRAMME	63
BACHELOR OF TECHNOLOGY IN AUTOMOTIVE WITH HONOURS (BMKF)	66
CURRICULUM STRUCTURE FOR BMKF PROGRAMME	68

DEAN'S FOREWORD

Assalamualaikum warahmatullahi wabarakatuh and greetings.

Praise be to Allah SWT for His blessings and guidance, which have enabled the publication of this Faculty Handbook as a reference for the faculty community, particularly students, in understanding the academic programmes provided by the Faculty.

The Faculty is committed to providing quality and relevant engineering education that responds to technological advancements and industry needs. In line with this commitment, students are encouraged to fully utilise the learning opportunities, facilities, and experiences provided to develop their competencies, professionalism, creativity, and integrity.

It is hoped that this handbook will assist students in planning and managing their academic journey effectively while supporting their pursuit of academic excellence and personal development.

My sincere appreciation goes to all those involved in the preparation of this handbook. May this effort further strengthen the Faculty's commitment to excellence in producing competent, competitive, and responsible graduates who can contribute meaningfully to industry, society, and the nation.

Thank you.

"FTKM - GEARED FOR EXCELLENCE"

Associate Professor Dr. Nadlene binti Razali
Dean
Faculty of Mechanical Technology and Engineering

FACULTY OF MECHANICAL TECHNOLOGY AND ENGINEERING MANAGEMENT TEAM



BACKGROUND OF UNIVERSITI TEKNIKAL MALAYSIA MELAKA

On December 1st, 2000, the Ministry of Education of Malaysia has officially approved the establishment of a new public university with the name Kolej Universiti Teknikal Kebangsaan Malaysia (KUTKM). The establishment of KUTKM is to fulfil the needs of prospective industries on professional manpower in technical areas that does not only have sound academic ability, but also are competent and highly technically-skilled. As the 14th public higher learning institution established in Malaysia, KUTKM has experienced many challenges and impediments in order to be a renowned university. KUTKM supports application-oriented approach and practice in its Teaching and Learning (T&L) processes.

On February 1st, 2007, KUTKM has been renamed and presently known as the Universiti Teknikal Malaysia Melaka (UTeM). From the beginning of the establishment, UTeM has upheld and maintained technical education programmes which fulfil the needs of current industries and tech-based employers. The students of UTeM come from diverse backgrounds which include science, technical and vocational streams. At present, UTeM has ten faculties, schools, and institute that offer programmes at Diploma, Bachelor Degree and post graduate levels. These are:

1. Faculty of Electronics and Computer Technology and Engineering
2. Faculty of Electrical Technology and Engineering
3. Faculty of Mechanical Technology and Engineering
4. Faculty of Industrial and Manufacturing Technology and Engineering
5. Faculty of Information and Communications Technology
6. Faculty of Technology Management and Technopreneurship
7. Faculty of Artificial Intelligence and Cyber Security
8. Institute of Sustainable Technology
9. School of International Studies and Global Languages
10. School of Graduate Studies
11. School of Technical Foundation and Diploma

Vision

To Be One of the World's Leading Innovative and Creative Technical Universities

Mission

UTeM is determined to lead and contribute to the wellbeing of the country and the world by:

- a. Promoting knowledge through innovative teaching & learning, research and technical scholarship;
- b. Developing professional leaders with impeccable moral values;
- c. Generating sustainable development through smart partnership with the community and industry.

Motto

Excellence Through Competency

Educational Goals

- a. To conduct academic and professional programmes based on relevant needs of the industries.
- b. To produce graduates with relevant knowledge, technical competency, soft skills, social responsibility and accountability.
- c. To cultivate scientific method, critical thinking, creative and innovative problem solving and autonomy in decision making amongst graduates.
- d. To foster development and innovation activities in collaboration with industries for the prosperity of the Nation.
- e. To equip graduates with leadership and teamwork skills as well as develop communication and life-long learning skills.
- f. To develop technopreneurship and managerial skills amongst graduates.
- g. To instill an appreciation of the arts and cultural values and awareness of healthy life styles amongst graduates.

BACKGROUND OF FACULTY OF MECHANICAL TECHNOLOGY AND ENGINEERING

The Ministry of Higher Education has given an approval to Faculty of Mechanical Engineering to officially start its programmes on 22nd June 2001. On 15th September 2022, the university has restructured all engineering and engineering technology faculties and as a result, the Faculty of Mechanical Engineering has been rebranded and known as Faculty of Mechanical Technology and Engineering (FTKM). The faculty operates in two campuses; Main Campus and Technology Campus. The faculty has developed many extensive facilities to facilitate the academic programmes, staff and student activities.

FTKM Vision

The vision of the faculty is to be a leader in mechanical engineering and technology, driving innovation and sustainability.

FTKM Mission

The mission of the faculty is to provide excellent education, advanced research and foster university-industry collaboration to develop competent mechanical engineers and technologists that contribute to societal development and national aspirations.

FTKM Objectives

Faculty of Mechanical Engineering have five objectives to realize the vision and mission as follows:

- a. To offer high quality, application-oriented mechanical engineering and technology programs that meet current industrial demands and are recognized by professional bodies.
- b. To produce graduates with critical thinking, innovation, problem-solving skills, and competencies fulfill the national and international workforce needs.
- c. To enhance staff expertise and competency through ethical and well-organized human resource development programs.
- d. To conduct advanced research and development, fostering postgraduate programs.
- e. To promote smart partnerships and collaborations with universities, industries, and stakeholders for mutual growth and innovation.

UNDERGRADUATES PROGRAMMES AND ADMISSION REQUIREMENTS

UNDERGRADUTES PROGRAMMES OFFERED

The Faculty of Mechanical Technology offers eight (8) full-time undergraduate programmes and two (2) part-time undergraduate programmes as of the 2026/2027 Academic Session. The programmes are:

No.	Programme Name	Program Code	Credits to Graduate
1	Bachelor of Mechanical Engineering with Honours	BMKU	135
2	Bachelor of Automotive Engineering with Honours	BMKK	135
3	Bachelor of Mechanical Engineering with Honours (Part Time Mode)	BMKU-PT	135
4	Bachelor of Mechanical Engineering Technology	BMKV	142
5	Bachelor of Mechanical Engineering Technology (Maintenance Technology)	BMKM	143
6	Bachelor of Mechanical Engineering Technology (Refrigeration and Air-Conditioning Systems)	BMKH	142
7	Bachelor of Mechanical Engineering Technology (Automotive Technology)	BMKA	141
8	Bachelor of Mechanical Engineering Technology (Part Time Mode)	BMKV-PT	142
9	Bachelor of Technology in Air-Conditioning and Refrigeration	BMKS	120
10	Bachelor of Technology in Automotive	BMKF	120

GENERAL ENTRY REQUIREMENTS

The general entry requirements into the Bachelor programmes are based on the candidate's qualification in the 'Sijil Tinggi Pelajaran Malaysia (STPM)', 'Sijil Matrikulasi KPM', Diploma, or the equivalent. The detailed admission requirements can be obtained from the UTEM's Prospectus or website (<http://www.utem.edu.my/en/undergraduate.html>). Candidates with a certified Diploma qualification may be considered for credit transfer.

BACHELOR OF MECHANICAL ENGINEERING WITH HONOURS (BMKU)

ACCREDITATION: 2023-2028

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/ Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass Diploma / equivalent qualification recognized by the Government of Malaysia and approved by the University Senate; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Engineering with at least a CGPA of 3.00 or Diploma in Engineering Technology with at least a CGPA of 3.30 recognized by the Government of Malaysia and approved by the University Senate **AND**
- ☑ Credit exemptions are subject to the faculty's approval **AND**
- ☑ Pass the Diploma program before the academic session begins.

MATRICULATION CERTIFICATE

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/ Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass KPM Matriculation / Asasi with at least a CGPA of 2.00; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass with at least Grade C (2.00) in Mathematics/ Engineering Mathematics, Physics/ Engineering Science and Chemistry/ Basic Engineering. **OR**
- ☑ Pass with at least Grade C (2.00) in Mathematics/ Engineering Mathematics, Chemistry and Biology with at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM)

STPM HOLDERS

General Requirements:

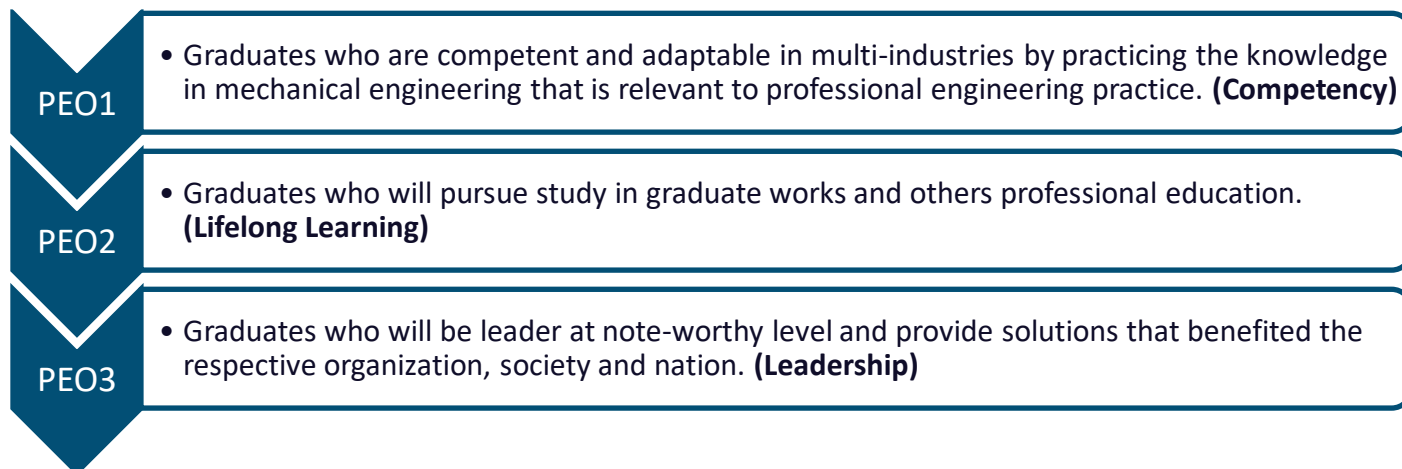
- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/ Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass STPM with at least CGPA 2.00 and Grade C (2.00) in General Studies **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET) **AND**
- ☑ Candidate does not have limited capability in performing the practical work.

Program's Special Requirements:

- ☑ Pass STPM with at least Grade C (2.00) in
 - Mathematics (M)/Mathematics (T)
 - Physics
 - Chemistry**OR**
 - Mathematics (M)/Mathematics (T)
 - Chemistry
 - Biology and must get at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM)

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:



Programme Objectives (PO)

Programme Outcomes (PO) are statements describing what students are expected to know and be able to perform or attain by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire through their programme of studies. Upon completion, graduates from this programme are expected to be able to:

PO	PO Statement
PO1- Engineering Knowledge	Apply knowledge of mathematics, natural science, computing and engineering fundamentals, and mechanical engineering specialization as specified in WK1 to WK4 respectively to develop solutions to complex engineering problems.
PO2 – Problem Analysis	Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development in mechanical engineering (WK1 to WK4).
PO3 – Design/Development of Solutions	Design creative solutions for complex mechanical engineering problems and design systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations as required (WK5).
PO4 – Investigation	Conduct investigation of complex mechanical engineering problems using research methods including research-based knowledge, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions (WK8).

PO5 – Tool Usage	Create, select and apply, and recognize limitation of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex mechanical engineering problems (WK2 and WK6).
PO6 – The Engineer and the World	Analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving complex engineering problems (WK1, WK5, and WK7).
PO7 – Ethics	Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion (WK9).
PO8 – Individual and Collaborative Team Work	Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multidisciplinary, face-to-face, remote and distributed settings (WK9).
PO9 – Communication	Communicate effectively and inclusively on complex mechanical engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, taking into account cultural, language, and learning differences.
PO10 – Project Management and Finance:	Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning:	Recognise the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change (WK8).

CURRICULUM STRUCTURE FOR BMKU PROGRAMME

Year 1 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 1142	ENGLISH FOR ACADEMIC PURPOSES	W	2	-
BLHW 1772/ BLHW 1762	PHILOSOPHY AND CURRENT CHALLENGES [#] / PHILOSOPHY AND CURRENT ISSUES ^{##}	W	2	-
BMIG 1313	ENGINEERING MATHEMATICS I	P	3	-
BMKC 1123	PROGRAMMING FUNDAMENTAL FOR MECHANICAL ENGINEERS	P	3	-
BMIG 1213	ENGINEERING MATERIALS	P	3	-
BELG 1123	PRINCIPLES OF ELECTRIC AND ELECTRONICS	P	3	-
BMKU 1412	MANUFACTURING PROCESS	K	2	-
TOTAL			18	

[#] For local students

^{##} For international students

Year 1 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM I*	W	1	-
BMKC 1052	MEASUREMENT AND INSTRUMENTATION	P	2	-
BMKU 1313	ENGINEERING GRAPHICS AND CAD	P	3	-
BMKU 1113	STATICS	P	3	-
BMKC 1013	DIFFERENTIAL EQUATIONS	P	3	-
BMKU 1511	MECHANICAL ENGINEERING WORKSHOP	K	1	-
BMKC 2062	OCCUPATIONAL SAFETY AND HEALTH	K	2	
			15	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 2722 / BLHW 2762	MALAYSIAN NATION STATE ASPIRATION [#] / MALAYSIAN CITRA ^{##}	W	2	-
BELG 2443	ENGINEERING MATHEMATICS II	P	3	-
BMKU 2222	MICROPROCESSOR TECHNOLOGY	K	2	-
BMKU 2213	DYNAMICS	K	3	-
BMKU 2323	COMPUTER AIDED DESIGN & MANUFACTURING	K	3	-
BMKU 2713	THERMODYNAMICS I	K	3	-
BMKU 2521	MECHANICAL ENGINEERING LABORATORY I	K	1	-
TOTAL			17	

[#] For local students

^{##} For international students

Year 2 (Semester 4)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 2152	ACADEMIC WRITING	W	2	BLLW 1142
BKXX XXX1	CO-CURRICULUM II*	W	1	-
BLHW 2792	INTEGRITY AND ANTI-CORRUPTION COURSE	W	2	
BERN 2143	ENGINEERING STATISTICS	P	3	
BMKU 2613	FLUID MECHANICS I	K	3	-
BMKU 2123	SOLID MECHANICS I	K	3	-
BMKU 2723	THERMODYNAMICS II	K	3	BMKU 2713
TOTAL			17	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 3 (Semester 5)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 3162	ENGLISH FOR PROFESSIONAL INTERACTION	W	2	BLLW 2152
BMIG 3213	ENGINEERING MANAGEMENT AND ECONOMY	P	3	-
BMKU 3532	MECHANICAL ENGINEERING LABORATORY II	K	2	-
BMKC 3042	SUSTAINABILITY AND ENVIRONMENT	K	2	-
BMKU 3623	FLUID MECHANICS II	K	3	BMKU 2613
BMKU 3133	SOLID MECHANICS II	K	3	BMKU 2123
BMKU 3243	CONTROL ENGINEERING	K	3	-
TOTAL			18	

Year 3 (Semester 6)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 1XX2	THIRD LANGUAGE**	W	2	
BMKC 4032	ENGINEERING PROFESSIONAL PRACTICE	P	2	-
BMKU 3333	FINITE ELEMENT ANALYSIS	K	3	-
BMKU 3733	HEAT TRANSFER	K	3	-
BMKU 3343	ENGINEERING DESIGN	K	3	-
BMKU 3233	MECHANICAL DESIGN	K	3	-
BMKU 4532	MECHANICAL ENGINEERING LABORATORY III	K	2	-
TOTAL			18	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

Year 3 (Short Semester)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 3915	INDUSTRIAL TRAINING	P	5	-
TOTAL			5	

Year 4 (Semester 7)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BTMW 4012	TECHNOLOGY ENTREPRENEURS	W	2	-
BMKC 4932	FINAL YEAR PROJECT I	P	2	-
BMKC 4913	INTEGRATED DESIGN PROJECT	P	3	BMKU 3343
BMKC 4041	ENGINEERING SEMINAR	P	1	-
BMKU 4743	RENEWABLE ENERGY	K	3	-
BMKU 3253	MECHANICAL VIBRATION	K	3	-
TOTAL			14	

Year 4 (Semester 8)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 4944	FINAL YEAR PROJECT II	P	4	BMCU 4932
BMKU 4XX3	ELECTIVE I ***	E	3	-
BMKU 4XX3	ELECTIVE II ***	E	3	-
BMKU 4XX3	ELECTIVE III ***	E	3	-
TOTAL			13	
TOTAL OVERALL CREDIT			135	

*** Refer to List of Programme Elective Courses

Note:

CATEGORY	DESCRIPTION
W	UNIVERSITY COMPULSORY COURSE
P	COMMON CORE COURSE
K	PROGRAMME CORE COURSE
E	ELECTIVE COURSE

List of Programme Elective Courses:

FIELD	CODE	COURSE	CREDIT
THERMAL & FLUID	BMKU 4653	TURBOMACHINERY	3
	BMKU 4753	REFRIGERATION AND AIR CONDITIONING SYSTEM	3
	BMKU 4763	POWERPLANT SYSTEM	3
	BMKU 4633	COMPUTATIONAL FLUID DYNAMICS	3
	BMKU 4643	FLUID POWER SYSTEM	3
	BMKU 4773	FUNDAMENTAL OF ENERGY MANAGEMENT FOR ENGINEERS	3
STRUCTURE & MATERIAL	BMKU 4153	ADVANCED SOLID MECHANICS	3
	BMKU 4143	FRACTURE MECHANICS	3
	BMKU 4443	NON-DESTRUCTIVE TESTING	3
	BMKU 4423	COMPOSITES AND ADVANCED MATERIALS	3
	BMKU 4433	METALLURGY	3
	BMKU 4453	CORROSION AND DEGRADATION OF ALLOY STEEL	3
DESIGN	BMKU 4363	MECHANISM DESIGN	3
	BMKU 4353	3D PRINTING TECHNOLOGY	3
	BMKU 4393	DESIGN QUALITY AND RELIABILITY	3
	BMKU 4383	DESIGN OPTIMIZATION	3

	BMKU 4373	ADVANCED COMPUTER AIDED DESIGN	3
MAINTENANCE	BMKU 4813	CONDITION BASED MAINTENANCE	3
	BMKU 4823	RELIABILITY, MAINTAINABILITY AND RISKS	3
	BMKU 4853	VIBRATION MONITORING OF ROTATING MACHINERY	3
	BMKU 4833	WEAR DEBRIS AND OIL ANALYSIS	3
	BMKU 4863	TRIBOLOGY	3
	BMKU 4843	STRUCTURAL HEALTH MONITORING	3

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF AUTOMOTIVE ENGINEERING WITH HONOURS (BMKK)

ACCREDITATION: 2023-2027

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass Diploma / equivalent qualification recognized by the Government of Malaysia and approved by the University Senate; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Engineering with at least a CGPA of 3.00 or Diploma in Engineering Technology with at least a CGPA of 3.30 recognized by the Government of Malaysia and approved by the University Senate **AND**
- ☑ Credit exemptions are subject to the faculty's approval **AND**
- ☑ Pass the Diploma program before the academic session begins.

MATRICULATION CERTIFICATE

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass KPM Matriculation / Asasi with at least a CGPA of 2.00; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass with at least Grade C (2.00) in Mathematics/ Engineering Mathematics, Physics/ Engineering Science and Chemistry/ Basic Engineering. **OR**
- ☑ Pass with at least Grade C (2.00) in Mathematics/ Engineering Mathematics, Chemistry and Biology with at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM)

STPM HOLDERS

General Requirements:

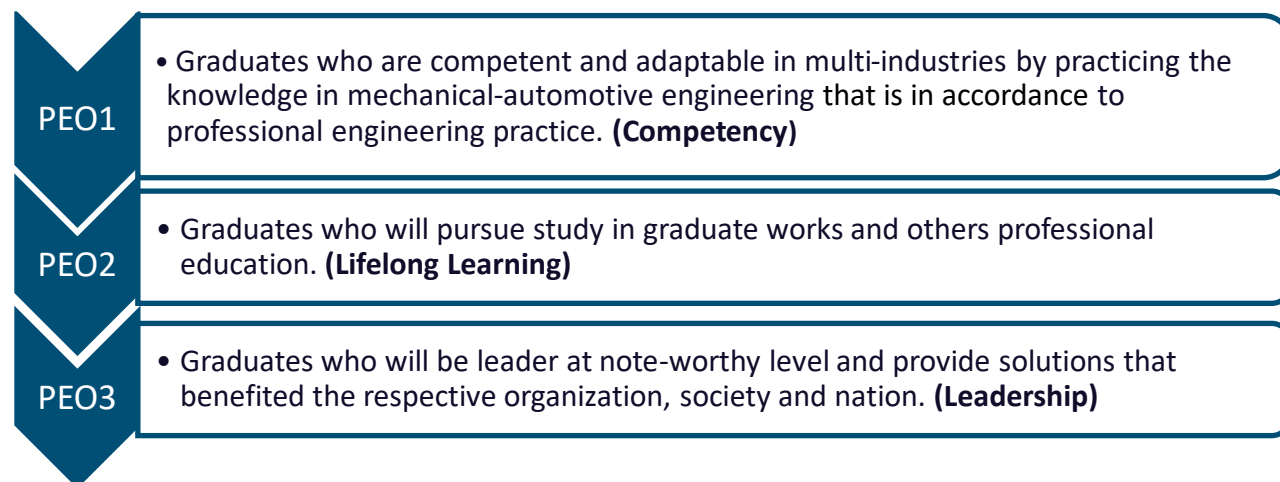
- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass STPM with at least CGPA 2.00 and Grade C (2.00) in General Studies **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET) **AND**
- ☑ Candidate does not have limited capability in performing the practical work.

Program's Special Requirements:

- ☑ Pass STPM with at least Grade C (2.00) in
 - Mathematics (M)/Mathematics (T)
 - Physics
 - Chemistry**OR**
 - Mathematics (M)/Mathematics (T)
 - Chemistry
 - Biology and must get at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM)

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:



Programme Objectives (PO)

Upon completion, graduates from this programme are expected to be able to:

PO	PO Statement
PO1- Engineering Knowledge	Apply knowledge of mathematics, natural science, computing and engineering fundamentals, and mechanical-automotive engineering specialization as specified in WK1 to WK4 respectively to develop solutions to complex engineering problems.
PO2 – Problem Analysis	Identify, formulate, research literature and analyze complex mechanical-automotive engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development in mechanical-automotive engineering (WK1 to WK4).
PO3 – Design/Development of Solutions	Design creative solutions for complex mechanical-automotive engineering problems and design systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations as required (WK5).
PO4 – Investigation	Conduct investigation of complex mechanical-automotive engineering problems using research methods including research-based knowledge, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions (WK8).
PO5 – Tool Usage	Create, select and apply, and recognize limitation of appropriate techniques, resources, and modern engineering and IT tools, including

	prediction and modelling, to complex mechanical-automotive engineering problems (WK2 and WK6).
PO6 – The Engineer and the World	Analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving complex engineering problems (WK1, WK5, and WK7).
PO7 – Ethics	Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion (WK9).
PO8 – Individual and Collaborative Team Work	Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multidisciplinary, face-to-face, remote and distributed settings (WK9).
PO9 – Communication	Communicate effectively and inclusively on complex mechanical engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, taking into account cultural, language, and learning differences.
PO10 – Project Management and Finance:	Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning:	Recognise the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change (WK8).

CURRICULUM STRUCTURE FOR BMKK PROGRAMME

Year 1 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 1XX2	THIRD LANGUAGE**	W	2	-
BLHW 1772/ BLHW 1762	PHILOSOPHY AND CURRENT CHALLENGES # / PHILOSOPHY AND CURRENT ISSUES##	W	2	-
BMIG 1313	ENGINEERING MATHEMATICS I	P	3	-
BMIG 1213	ENGINEERING MATERIALS	P	3	-
BMKK 1113	ENGINEERING MECHANICS	K	3	-
BMKK 1323	COMPUTER AIDED DESIGN	K	3	-
TOTAL			16	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

For local students

For international students

Year 1 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKXX XXX1	CO-CURRICULUM I*	W	1	-
BLLW1142	ENGLISH FOR ACADEMIC PURPOSES	W	2	-
BMKC 1013	DIFFERENTIAL EQUATIONS	P	3	-
BELG 1123	PRINCIPLES OF ELECTRIC AND ELECTRONICS	P	3	-
BMKC 1052	MEASUREMENT AND INSTRUMENTATION	P	2	-
BMKK 2713	THERMODYNAMICS	K	3	-
BMKU 1412	MANUFACTURING PROCESS	K	2	-
TOTAL			16	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 2722 / BLHW 2762	MALAYSIAN NATION STATE ASPIRATION [#] / MALAYSIAN CITRA ^{##}	W	2	-
BKKX XXX1	CO-CURRICULUM II*	W	1	-
BELG 2443	ENGINEERING MATHEMATICS II	P	3	-
BMKK 2123	SOLID MECHANICS	K	3	-
BMKK 4343	AUTOMOTIVE MANUFACTURING SYSTEM	K	3	-
BMKK 2823	VEHICLE ELECTRIC & ELECTRONICS SYSTEM	K	3	-
BMKU 2222	MICROPROCESSOR TECHNOLOGY	K	2	-
TOTAL			17	

[#] For local students

^{##} For international students

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 4)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 2152	ACADEMIC WRITING	W	2	BLLW 1142
BMKC 1123	PROGRAMMING FUNDAMENTAL FOR MECHANICAL ENGINEERS	P	3	-
BMKU 3233	MECHANICAL DESIGN	K	3	-
BMKK 2613	FLUID MECHANICS	K	3	-
BMKK 2541	MECHANICAL ENGINEERING LABORATORY	K	1	-
BMKK 3511	AUTOMOTIVE LABORATORY I	K	1	-
BMKK 2813	AUTOMOTIVE TECHNOLOGY	K	3	-
TOTAL			16	

Year 3 (Semester 5)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 3243	CONTROL ENGINEERING	K	3	-
BMKU 3733	HEAT TRANSFER	K	3	-
BMKK 3213	VEHICLE DYNAMICS	K	3	-
BMKK 3522	AUTOMOTIVE LABORATORY II	K	2	-
BMKK 2723	INTERNAL COMBUSTION ENGINE	K	3	-
BMKU 3253	MECHANICAL VIBRATION	K	3	-
TOTAL			17	

Year 3 (Semester 6)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 3162	ENGLISH FOR PROFESSIONAL INTERACTION	W	2	BLLW 2152
BLHW 2792	INTEGRITY AND ANTI-CORRUPTION COURSE	W	2	-
BERN 2143	ENGINEERING STATISTICS	P	3	-
BMKK 3913	INTEGRATED DESIGN PROJECT I	P	3	-
BMKK 3313	VEHICLE SYSTEM MODELLING & SIMULATION	K	3	-
BMKK 4333	VEHICLE POWERTRAIN SYSTEMS	K	3	-
TOTAL			16	

Year 3 (Short Semester)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 3915	INDUSTRIAL TRAINING	P	5	-
TOTAL			5	

Year 4 (Semester 7)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 4932	FINAL YEAR PROJECT I	P	2	-
BMKC 4032	ENGINEER AND SOCIETY	P	2	-
BMKK 4913	INTEGRATED DESIGN PROJECT II	P	3	BMKK 3913
BMKK 4833	ELECTRICAL PROPULSION SYSTEM	K	3	-
BMKK 4223	VEHICLE CONTROL SYSTEM	K	3	-
BMKK 4XX3	ELECTIVE I***	E	3	-
TOTAL			16	

*** Refer to List of Programme Elective Courses

Year 4 (Semester 8)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BTMW 4012	TECHNOLOGY ENTREPRENEURS	W	2	-
BMKK 4941	AUTOMOTIVE SEMINAR	P	1	-
BMKC 4944	FINAL YEAR PROJECT II	P	4	BMKC 4932
BMIU 3213	ENGINEERING MANAGEMENT AND ECONOMY	P	3	-
BMKK 4233	VEHICLE AUTONOMOUS SYSTEM	K	3	-
BMKK 4XX3	ELECTIVE II***	E	3	-
TOTAL			16	
TOTAL OVERALL CREDIT			135	

*** Refer to List of Programme Elective Courses

Note:

CATEGORY	DESCRIPTION
W	UNIVERSITY COMPULSORY COURSE
P	COMMON CORE COURSE
K	PROGRAMME CORE COURSE
E	ELECTIVE COURSE

List of Programme Elective Courses:

FIELD	CODE	COURSE	CREDIT
ELECTIVE I	BMKK 4323	VEHICLE ERGONOMICS	3
	BMKK 3623	VEHICLE AERODYNAMICS	3
	BMKK 4353	LUBRICATION AND LUBRICANTS	3
ELECTIVE II	BMKK 4243	NOISE, VIBRATION AND HARSHNESS	3
	BMKK 4133	VEHICLE STRUCTURE	3
	BMKK 4363	AUTOMOTIVE SURFACE ENGINEERING	3

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF MECHANICAL ENGINEERING WITH HONOURS (BMKU) – PART TIME

ACREDITATION: 2023-2028

Entry Requirement:

General Requirements:

- ☑ A Malaysian citizen.

AND

- ☑ Have passed the Malaysian Certificate of Education (SPM) or an equivalent qualification, with a credit (Grade C) in Bahasa Melayu/Bahasa Malaysia, or a credit in Bahasa Melayu/Bahasa Malaysia (July Paper), and have passed History (applicable to SPM 2013 and later) in the SPM examination;

OR

For applicants who did not obtain a credit in Bahasa Melayu/Bahasa Malaysia at the SPM level, they must obtain a credit (Grade C) in the subject before graduation.

AND

- ☑ Meet one of the following academic qualifications:

- ☑ Hold a Diploma or another qualification recognized as equivalent by the Government of Malaysia and approved by the University's Senate; **OR**

- ☑ Pass the Malaysian Higher School Certificate (STPM) examination with a minimum CGPA of 2.00 and a Grade C (NGMP 2.00) in three (3) subjects, including General Studies (Pengajian Am);

OR

- ☑ Pass the Matriculation examination with a minimum CGPA of 2.00;

OR

- ☑ Pass the GCE A-Level examination with a minimum of 9 points;

OR

- ☑ Pass the International Baccalaureate (IB) Diploma examination with a minimum of 24 points.

AND

- ☑ Meet one of the following English language requirements:

- ☑ Obtain at least Band 2 (Level 2) in the Malaysian University English Test (MUET);

OR

- ☑ Obtain at least Band 2 (Level 2) in the Malaysian University English Test (MUET) before graduation;

OR

- ☑ Obtain a minimum score of 500 in the Test of English as a Foreign Language (TOEFL) and Band 5.5 in the International English Language Testing System (IELTS) (applicable only to GCE A-Level and International Baccalaureate Diploma applicants).

- ☑ Note: Applicants seeking admission to a Bachelor's Degree programme through the Accreditation of Prior Experiential Learning (APEL) pathway must possess relevant work experience and have successfully obtained the Bachelor's-level APEL.A certificate (APEL T-6). APEL certification must be applied for through the Malaysian Qualifications Agency (MQA).

Special Requirements:

Applicants must meet one of the following requirements:

- ☑ Pass a Diploma in Engineering or Diploma in Engineering Technology with a minimum CGPA of 2.00 in a relevant field from an institution recognised by the Malaysian Government and approved by the University Senate;

OR

- ☑ Pass the Malaysian Higher School Certificate (STPM) examination with a minimum CGPA of 2.00, and obtain at least a Grade C (NGMP 2.00) in each of the following subjects:

- ☑ General Studies (Pengajian Am)
- ☑ Mathematics (M) or Mathematics (T)
- ☑ Physics
- ☑ Chemistry

OR

- ☑ Pass the Malaysian Higher School Certificate (STPM) examination with a minimum CGPA of 2.00, and obtain at least a Grade C (NGMP 2.00) in each of the following subjects:

- ☑ General Studies (Pengajian Am)
- ☑ Mathematics (M) or Mathematics (T)
- ☑ Biology and obtain at least a credit (Grade C) in Physics at the Malaysian Certificate of Education (SPM) level.

OR

- ☒ Pass the Ministry of Education (MOE) Matriculation Programme, University of Malaya Foundation Programme (Asasi UM), Universiti Teknologi MARA Foundation Programme (Asasi UiTM), or another equivalent foundation programme, with a minimum CGPA of 2.00.

AND

Obtain at least a Grade C (2.00) in the Ministry of Education (MOE) Matriculation Programme, University of Malaya Foundation Programme (Asasi UM), Universiti Teknologi MARA Foundation Programme (Asasi UiTM), or another equivalent foundation programme, in each of the following subjects:

- ☒ Mathematics / Engineering Mathematics
- ☒ Physics
- ☒ Chemistry / Mechanical Engineering / Civil Engineering / Basic Engineering

OR

Obtain at least a Grade C (2.00) in each of the following subjects:

- ☒ Mathematics
- ☒ Chemistry
- ☒ Biology and obtain at least a credit (Grade C) in Physics at the Malaysian Certificate of Education (SPM) level.

OR

- ☒ Pass the GCE A-Level examination with at least a Grade C in each of the following subjects:
 - ☒ Mathematics
 - ☒ Physics
 - ☒ One (1) additional GCE A-Level subject.

OR

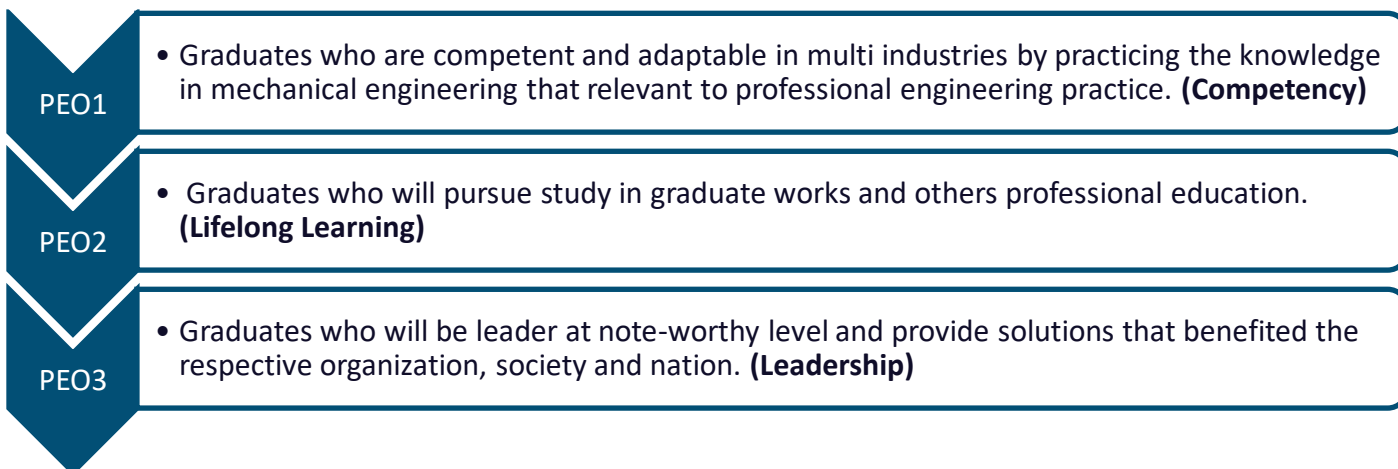
- ☒ Pass the International Baccalaureate (IB) Diploma examination with at least Grade 4 in each of the following subjects:
 - ☒ Mathematics
 - ☒ Physics
 - ☒ One (1) additional International Baccalaureate (IB) Diploma subject.

AND

- ☒ Applicants must not have a visual impairment and must not have a physical disability or limb impairment that would significantly hinder the performance of practical or laboratory work.

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:



Programme Objectives (PO)

Upon completion, graduates from this programme are expected to be able to:

PO	PO Statement
PO1- Engineering Knowledge	Apply knowledge of mathematics, natural science, computing and engineering fundamentals, and mechanical engineering specialization as specified in WK1 to WK4 respectively to develop solutions to complex engineering problems.
PO2 – Problem Analysis	Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development in mechanical engineering (WK1 to WK4).
PO3 – Design/Development of Solutions	Design creative solutions for complex mechanical engineering problems and design systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations as required (WK5).
PO4 – Investigation	Conduct investigation of complex mechanical engineering problems using research methods including research-based knowledge, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions (WK8).

PO5 – Tool Usage	Create, select and apply, and recognize limitation of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex mechanical engineering problems (WK2 and WK6).
PO6 – The Engineer and the World	Analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving complex engineering problems (WK1, WK5, and WK7).
PO7 – Ethics	Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion (WK9).
PO8 – Individual and Collaborative Team Work	Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multidisciplinary, face-to-face, remote and distributed settings (WK9).
PO9 – Communication	Communicate effectively and inclusively on complex mechanical engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, taking into account cultural, language, and learning differences.
PO10 – Project Management and Finance:	Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning:	Recognise the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change (WK8).

CURRICULUM STRUCTURE FOR BMKU PROGRAMME - PART TIME

Year 1 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 1142	ENGLISH FOR ACADEMIC PURPOSES	W	2	-
BLHW 2722 /BLHW 2762	MALAYSIAN NATION STATE ASPIRATION [#] / MALAYSIAN CITRA ^{##}	W	2	-
BMIG 1313	ENGINEERING MATHEMATICS I	P	3	-
BMIG 1213	ENGINEERING MATERIALS	P	3	-
TOTAL			10	

[#] For local students

^{##} For international students

Year 1 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM I*	W	1	-
BELG 1123	PRINCIPLES OF ELECTRIC AND ELECTRONICS	P	3	-
BMKU 1113	STATICS	P	3	-
BMKC 1013	DIFFERENTIAL EQUATIONS	P	3	-
			10	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 1 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 1412	MANUFACTURING PROCESS	K	2	-
BMKU 1313	ENGINEERING GRAPHICS AND CAD	P	3	-
			5	

Year 2 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 1772	PHILOSOPHY AND CURRENT CHALLENGES	W	2	-
BELG 1233	PRINCIPLES OF INSTRUMENTATION AND MEASUREMENT	P	3	-
BELG 2443	ENGINEERING MATHEMATICS II	P	3	-
BMKU 2213	DYNAMICS	K	3	-
TOTAL			11	

Year 2 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 2713	THERMODYNAMICS I	K	3	-
BMKU 2323	COMPUTER AIDED DESIGN & MANUFACTURING	K	3	-
BITG 1233	COMPUTER PROGRAMMING	P	3	-
BKXX XXX1	CO-CURRICULUM II*	W	1	-
TOTAL			10	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BELG 2433	ELECTRICAL SYSTEMS	P	3	-
BMKU 1511	MECHANICAL ENGINEERING WORKSHOP	K	1	-
BMKU 2511	MECHANICAL ENGINEERING LABORATORY I	K	1	-
TOTAL			5	

Year 3 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHL 1XX2	THIRD LANGUAGE**	W	2	-
BMKU 2613	FLUID MECHANICS I	K	3	-
BMKU 2222	MICROPROCESSOR TECHNOLOGY	K	2	-
BMKU 2123	SOLID MECHANICS I	K	3	-
TOTAL			10	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1172 Bahasa Melayu Komunikasi 1. Also refer to List of Other Elective Courses.

Year 3 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 2152	ACADEMIC WRITING	W	2	BLLW 1142
BMKU 2723	THERMODYNAMICS II	K	3	BMKU 2713
BMKC 3042	SUSTAINABILITY AND ENVIRONMENT	K	2	-
BMKU 3233	MECHANICAL DESIGN	K	3	-
TOTAL			10	

Year 3 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 3333	FINITE ELEMENT ANALYSIS	K	3	-
BMKU 3531	MECHANICAL ENGINEERING LABORATORY II	K	1	-
TOTAL			4	

Year 4 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BERN 2143	ENGINEERING STATISTICS	P	3	
BMKU 3253	MECHANICAL VIBRATION	K	3	-
BLLW 3162	ENGLISH FOR PROFESSIONAL INTERACTION	W	2	BLLW 2152
BMKU 3623	FLUID MECHANICS II	K	3	BMKU 2613
TOTAL			11	

Year 4 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BXXX XXX2	GENERAL / OPEN ELECTIVE****	W	2	-
BMKU 4541	MECHANICAL ENGINEERING LABORATORY III	K	1	-
BMKU 3133	SOLID MECHANICS II	K	3	BMKU 2123
BMKU 3343	ENGINEERING DESIGN	K	3	-
TOTAL			9	

**** Refer to List of Other Elective Courses

Year 4 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 3915	INDUSTRIAL TRAINING	P	5	-
TOTAL			5	

Year 5 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 4041	ENGINEERING SEMINAR	P	1	-
BMKU 3243	CONTROL ENGINEERING	K	3	-
BMKC 4913	INTEGRATED DESIGN PROJECT	P	3	BMKU 3343
BMKU 3733	HEAT TRANSFER	K	3	-
TOTAL			10	

Year 5 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 4932	FINAL YEAR PROJECT I	P	2	-
BMIU 3213	ENGINEERING MANAGEMENT AND ECONOMY	P	3	-
BMKU 4XX3	ELECTIVE I ***	E	3	-
BMKU 4XX3	ELECTIVE II ***	E	3	-
TOTAL			11	

*** Refer to List of Programme Elective Courses

Year 5 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BTMW 4012	TECHNOLOGY ENTREPRENEURS	W	2	-
BMKC 4032	ENGINEER AND SOCIETY	P	2	-
TOTAL			4	

Year 6 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKC 4944	FINAL YEAR PROJECT II	P	4	BMCU 4932
BMKU 4XX3	ELECTIVE III***	E	3	-
BMKU 4XX3	ELECTIVE IV***	E	3	-
TOTAL			10	
TOTAL OVERALL CREDIT			135	

*** Refer to List of Programme Elective Courses

Note:

CATEGORY	DESCRIPTION
W	UNIVERSITY COMPULSORY COURSE
P	COMMON CORE COURSE
K	PROGRAMME CORE COURSE
E	ELECTIVE COURSE

List of Programme Elective Courses:

FIELD	CODE	COURSE	CREDIT
THERMAL & FLUID	BMKU 4653	TURBOMACHINERY	3
	BMKU 4753	REFRIGERATION AND AIR CONDITIONING SYSTEM	3
	BMKU 4763	POWERPLANT SYSTEM	3
	BMKU 4633	COMPUTATIONAL FLUID DYNAMICS	3
	BMKU 4643	FLUID POWER SYSTEM	3
	BMKU 4773	FUNDAMENTAL OF ENERGY MANAGEMENT FOR ENGINEERS	3
STRUCTURE & MATERIAL	BMKU 4153	ADVANCED SOLID MECHANICS	3
	BMKU 4143	FRACTURE MECHANICS	3
	BMKU 4443	NON-DESTRUCTIVE TESTING	3
	BMKU 4423	COMPOSITES AND ADVANCED MATERIALS	3
	BMKU 4433	METALLURGY	3
	BMKU 4453	CORROSION AND DEGRADATION OF ALLOY STEEL	3
DESIGN	BMKU 4363	MECHANISM DESIGN	3
	BMKU 4353	3D PRINTING TECHNOLOGY	3

MAINTENANCE	BMKU 4393	DESIGN QUALITY AND RELIABILITY	3
	BMKU 4383	DESIGN OPTIMIZATION	3
	BMKU 4373	ADVANCED COMPUTER AIDED DESIGN	3
	BMKU 4813	CONDITION BASED MAINTENANCE	3
	BMKU 4823	RELIABILITY, MAINTAINABILITY AND RISKS	3
	BMKU 4853	VIBRATION MONITORING OF ROTATING MACHINERY	3
	BMKU 4833	WEAR DEBRIS AND OIL ANALYSIS	3
	BMKU 4863	TRIBOLOGY	3
	BMKU 4843	STRUCTURAL HEALTH MONITORING	3

List of Other Elective Courses:

NO.	CODE	COURSE
THIRD LANGUAGE		
1	BLLW 1222	MANDARIN 1
2	BLLW 1242	KOREAN 1
3	BLLW 1212	ARABIC 1
4	BLLW 1252	GERMAN 1
5	BLLW 1232	JAPANESE 1
6	BLLW 1282	MALAY 2*
GENERAL ELECTIVE		
1	BLHC 4032	CRITICAL AND CREATIVE THINKING
2	BLHC 4022	NEGOTIATION SKILLS
3	BLHH 1032	INDUSTRIAL AND ORGANIZATIONAL PSYCHOLOGY
4	BLHC 4012	ORGANIZATIONAL COMMUNICATION
5	BLHW 1722	PHILOSOPHY OF SCIENCE AND TECHNOLOGY
OPEN ELECTIVE		
1	BMKK 4933	VEHICLE AUTONOMOUS SYSTEM

* For international students whose native language is not Malay.

BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY WITH HONOURS (BMKV)

ACCREDITATION: 2021-2026

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass Diploma / equivalent qualification recognized by the Government of Malaysia and approved by the University Senate; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Engineering with at least a CGPA of 2.00 **OR** Diploma in Engineering Technology with at least a CGPA of 2.30 **OR** Malaysian Skills Diploma (DKM) or Malaysian Advanced Skills Diploma (DLKM), with at least a CGPA 2.75/80% marks and above from Skills Development Department (JPK) recognized by the Government of Malaysia and approved by the University Senate, and pass Mathematics/Physics/Science and English in SPM **AND**
- ☑ Credit exemptions are subject to the faculty's approval **AND**
- ☑ Pass the Diploma program before the academic session begins.

MATRICULATION CERTIFICATE

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass KPM Matriculation / Asasi with at least a CGPA of 2.00; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass with at least Grade C (2.00) in Mathematics and Physics/ Engineering Science /Chemistry/Basic Engineering/ Biology where for Biology, must get at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM).

STPM HOLDERS

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass STPM with at least CGPA 2.00 and Grade C (2.00) in General Studies **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass STPM with at least Grade C (2.00) in
 - Mathematics (M)/Mathematics (T)
 - Physics/Chemistry/Biology **OR**
- ☑ Pass STPM with at least Grade C (2.00) in Physics/Chemistry/Biology and obtain at least Grade C in Mathematics/Additional Mathematics in the Malaysian Certificate of Education (SPM).

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:

PEO1	• Graduates who are able to practice the knowledge in Mechanical Engineering Technology.
PEO2	• Graduates who are able to engage with continuous development and adapt to evolving technologies.
PEO3	• Graduates who are able to adapt to professional ethics and leadership to meet the needs of the society.

Programme Objectives (PO)

Upon completion, graduates from this programme are expected to have these abilities:

PO	PO Statement
PO1 – Engineering Knowledge	Ability to apply knowledge of mathematics, natural science, computing and engineering fundamentals and engineering specialization principles to defined and applied engineering procedures, processes, systems or methodologies in the field of Mechanical Engineering Technology.
PO2 – Problem Analysis	Ability to identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools with considerations for sustainable development appropriate to Mechanical Engineering Technology
PO3 – Design/ Development of Solutions	Ability to design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations.
PO4 – Investigation	Ability to conduct investigations of broadly-defined engineering problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
PO5 – Tool Usage	Ability to select and apply, and recognize limitations of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems.
PO6 – The Engineering	

Technologist and the World	Ability to analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving broadly-defined engineering problems.
PO7 – Ethics	Ability to understand and commit to professional ethics and norms of engineering technology practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion.
PO8 – Individual and Collaborative Team Work	Ability to function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
PO9 – Communications	Ability to communicate effectively and inclusively on broadly-defined engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, considering cultural, language, and learning differences.
PO10 – Project Management and Finances	Ability to apply knowledge and understanding of engineering management principles and economic decision-making to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning	Ability to recognize the need for, and have the ability for independent and life-long learning and critical thinking in the face of new specialist technologies.
PO12 – Personal and Entrepreneurial Skills	Ability to demonstrate engagement in continuous self-development to advance career, professional or educational goals, and actively participating in entrepreneurial activities.

Four (4) years programme with 142 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE (%)
University Compulsory / General Elective (W)		18	12.68
Co-Curriculum (W)		2	1.41
Faculty Core (P)		21	14.79
Programme Core (K)	Core Courses	69	48.59
	Industrial Training	12	8.45
	Final Year Project	8	5.63
	Professional Certificate	0	0.00
Elective (E)	Programme	12	8.45
Total		142	100

CURRICULUM STRUCTURE FOR BMKV PROGRAMME

Year 1

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 1	BKKX XXX1	<i>Kokurikulum I*</i> Co-curriculum I*	W	1	-
	BELG 1013	<i>Matematik Teknikal</i> Technical Mathematics	P	3	-
	BMKT 1123	<i>Fizik Teknikal</i> Technical Physics	P	3	-
	BMKT 1413	<i>Grafik Kejuruteraan</i> Engineering Graphics	K	3	-
	BMKT 1513	<i>Statik dan Dinamik</i> Statics and Dynamics	K	3	-
	BMKT 1713	<i>Prinsip Elektrik dan Elektronik</i> Principles of Electric and Electronic	K	3	-
	BMKT 1623	<i>Amalan Pembuatan</i> Manufacturing Practices	K	3	-
TOTAL				19	
SEMESTER 2	BLHW 1772/ BLHW 1762	<i>Falsafah dan Cabaran Semasa</i> Philosophy and Current Challenges [#] / <i>Falsafah dan Cabaran Semasa</i> Philosophy and Current Issues ^{##}	W	2	-
	BLLW 1142	<i>Bahasa Inggeris untuk Tujuan Akademik</i> English for Academic Purposes	W	2	-
	BMIG 1023	<i>Kalkulus untuk Teknologi</i> Calculus for Technology	P	3	-
	BMKT 1133	<i>Kimia Teknikal</i> Technical Chemistry	P	3	-
	BMKT 1613	<i>Bahan Kejuruteraan</i> Engineering Materials	K	3	-
	BMKT 2433	<i>Rekabentuk Kejuruteraan</i> Engineering Design	K	3	-
	BMKT 2633	<i>Pengukuran dan Instrumentasi</i> Measurement and Instrumentation	K	3	-
TOTAL				19	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

[#] For local students

^{##} For international students

Year 2

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 3	BLLW 2152	<i>Penulisan Akademik</i> Academic Writing	W	2	BLLW 1142
	BKKX XXX1	<i>Kokurikulum II*</i> Co-curriculum II*	W	1	-
	BMKG 2033	<i>Kalkulus Gunaan untuk Teknologi</i> Applied Calculus for Technology	P	3	-
	BMKT 2543	<i>Proses Pembuatan</i> Manufacturing Process	K	3	-
	BMKT 2513	<i>Termodinamik</i> Thermodynamics	K	3	-
	BMKT 2523	<i>Mekanik Bendalir</i> Fluid Mechanics	K	3	-
	BMKT 2723	<i>IOT dan Aplikasi Pengawal Mikro</i> Applied Microcontroller and IOT	K	3	-
TOTAL				18	
SEMESTER 4	BLHW 2722/ BLHW 2762	<i>Aspirasi Negara Bangsa</i> Malaysian Nation State Aspiration [#] / Citra Malaysia Malaysian Citra ^{##}	W	2	-
	BERG 2043	<i>Kaedah Statistik</i> Statistical Methods	P	3	-
	BMKT 2323	<i>Mekanik Pepejal</i> Solid Mechanics	K	3	-
	BMKT 2833	<i>Rekabentuk Elemen Mesin</i> Machine Element Design	K	3	-
	BMKT 3543	<i>Teknologi Pneumatik dan Hidraulik</i> Pneumatic and Hydraulic Technology	K	3	-
	BMKT 2423	<i>Permodelan dan Analisis</i> <i>Berkomputer</i> Modelling and Computer Analysis	K	3	BMKT 1413
	BMKT 3533	<i>Pemindahan Haba</i> Heat Transfer	K	3	-
TOTAL				20	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

[#] For local students

^{##} For international students

Year 3

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 5	BLLW 3162	<i>Bahasa Inggeris untuk Interaksi Profesional</i> English for Professional Interaction	W	2	BLLW 2152
	BTMW 4012	<i>Keusahawanan Teknologi</i> Technology Entrepreneurship	W	2	-
	BMXX XXX0	<i>Kursus Persediaan Pensijilan Profesional</i> [%] Professional Certificate Preparation Course	P	0	-
	BMKH 2113	<i>Asas HVAC dan Penyejukan</i> Fundamental of HVAC and Refrigeration	K	3	-
	BMKV 3113	<i>Pengurusan Projek</i> Project Management	K	3	-
	BMKT 3343	<i>Getaran Mekanikal</i> Mechanical Vibration	K	3	-
	BMKT 3743	<i>Kawalan dan Instrumentasi</i> Control and Instrumentation	K	3	-
	BMKT 3443	<i>Projek Rekabentuk Bersepadu</i> Integrated Design Project	K	3	-
TOTAL				19	
SEMESTER 6	BLHW 2792	<i>Kursus Integriti dan Anti-Rasuah</i> Integrity and Anti-Corruption Course	W	2	-
	BMKT 3453	<i>Simulasi Berkomputer</i> Computer Simulation	K	3	-
	BMKH 3133	<i>Kelestarian dan Alam Sekitar</i> Environment and Sustainability	K	3	-
	BMKT 3214	<i>Projek Sarjana Muda I</i> Bachelor Degree Project I	K	4	-
	BMKV 4XX3	<i>Elektif I</i> ^{***} Elective I	E	3	-
	BMKV 4XX3	<i>Elektif II</i> ^{***} Elective II	E	3	-
TOTAL				18	

% Refer to List of Professional Certificate Preparation Course

*** Refer to List of Programme Elective Courses

Year 4

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 7	BLHC 4032	<i>Pemikiran Kritis dan Kreatif</i> Critical and Creative Thinking	W	2	-
	BLLW 1XX2	<i>Bahasa Ketiga**</i> Third Language**	W	2	-
	BMKT 4243	<i>Etika Kejuruteraan dan KKKP</i> Engineering Ethics and OSHE	P	3	-
	BMKT 4224	<i>Projek Sarjana Muda II</i> Bachelor Degree Project II	K	4	BMKT 3214
	BMKV 4XX3	<i>Elektif III***</i> Elective III	E	3	-
	BMKV 4XX3	<i>Elektif IV***</i> Elective IV	E	3	-
TOTAL				17	
SEMESTER 8	BMKT 4236	<i>Latihan Industri I</i> Industrial Training I	K	6	-
	BMKT 4246	<i>Latihan Industri II</i> Industrial Training II	K	6	-
TOTAL				12	
TOTAL OVERALL CREDIT				142	

** Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

*** Refer to List of Programme Elective Courses

List of Programme Elective Courses (may choose FOUR):

NO	CODE	COURSE
1	BMKV 4123	<i>Kelestarian dan Bangunan Hijau</i> Green Building and Sustainability
2	BMKV 4133	<i>Utiliti Bangunan</i> Building Utilities
3	BMKV 4143	<i>Kejuruteraan Perkhidmatan Bangunan</i> Building Services Engineering
4	BMKV 4153	<i>Teknik Penyelenggaraan Bangunan</i> Building Maintenance Technique
5	BMKV 4213	<i>Pengenalan Senibina dan Rekabentuk Kapal</i> Introduction to Ship Design and Architecture
6	BMKV 4223	<i>Sistem Teknologi Marin</i> Marine Technology System
7	BMKV 4233	<i>Teknologi Kapal Kecil</i> Small Craft Technology
8	BMKV 4243	<i>Pemeriksaan dan Penyelenggaraan Marin</i> Marine Inspection and Maintenance

9	BMKV 4323	<i>Teknologi Air dan Air Sisa</i> Water and Waste Water Technology
10	BMKV 4333	<i>Teknologi Pengurusan Sisa Pepejal</i> Solid Waste Management Technology
11	BMKV 4343	<i>Teknologi Kualiti Udara dan Kawalan Pencemaran</i> Air Quality and Pollution Control Technology
12	BMKV 4353	<i>Pengurusan Sisa Industri dan Sisa Berjadual</i> Industrial and Hazardous Waste Management
13	BMKV 44X3	<i>Pengenalan kepada Rekabentuk & Senibina Pesawat</i> Introduction to Aircraft Design & Architecture
14	BMKV 44X3	<i>Bahan & Pembuatan Aeroangkasa</i> Aerospace Materials & Manufacturing
15	BMKV 44X3	<i>Aerodinamik Pesawat</i> Aircraft Aerodynamics
16	BMKV 44X3	<i>Avionik</i> Avionics

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (MAINTENANCE TECHNOLOGY) WITH HONOURS (BMKM)

ACCREDITATION: 2021-2026

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass Diploma / equivalent qualification recognized by the Government of Malaysia and approved by the University Senate; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Engineering with at least a CGPA of 2.00 **OR** Diploma in Engineering Technology with at least a CGPA of 2.30 **OR** Malaysian Skills Diploma (DKM) or Malaysian Advanced Skills Diploma (DLKM), with at least a CGPA 2.75/80% marks and above from Skills Development Department (JPK) recognized by the Government of Malaysia and approved by the University Senate, and pass Mathematics/Physics/Science and English in SPM **AND**
- ☑ Credit exemptions are subject to the faculty's approval **AND**
- ☑ Pass the Diploma program before the academic session begins.

MATRICULATION CERTIFICATE

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass KPM Matriculation / Asasi with at least a CGPA of 2.00; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass with at least Grade C (2.00) in Mathematics and Physics/Engineering Science /Chemistry/Basic Engineering/Biology where for Biology, must get at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM).

STPM HOLDERS

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass STPM with at least CGPA 2.00 and Grade C (2.00) in General Studies **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass STPM with at least Grade C (2.00) in
 - Mathematics (M)/Mathematics (T)
 - Physics/Chemistry/Biology **OR**
- ☑ Pass STPM with at least Grade C (2.00) in Physics/Chemistry/Biology and obtain at least Grade C in Mathematics/Additional Mathematics in the Malaysian Certificate of Education (SPM).

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:

PEO1	Graduates who are able to practice the knowledge in Mechanical Engineering Technology (Maintenance Technology).
PEO2	Graduates who are able to engage with continuous development and adapt to evolving technologies.
PEO3	Graduates who are able to adapt to professional ethics and leadership to meet the needs of the society.

Programme Objectives (PO)

Upon completion, graduates from this programme are expected to have these abilities:

PO	PO Statement
PO1 – Engineering Knowledge	Ability to apply knowledge of mathematics, natural science, computing and engineering fundamentals and engineering specialization principles to defined and applied engineering procedures, processes, systems or methodologies in the field of Mechanical Engineering Technology (Maintenance Technology).
PO2 – Problem Analysis	Ability to identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools with considerations for sustainable development appropriate to Mechanical Engineering Technology (Maintenance Technology).
PO3 – Design/ Development of Solutions	Ability to design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations.
PO4 – Investigation	Ability to conduct investigations of broadly-defined engineering problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
PO5 – Tool Usage	Ability to select and apply, and recognize limitations of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems.
PO6 – The Engineering	

Technologist and the World	Ability to analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving broadly-defined engineering problems.
PO7 – Ethics	Ability to understand and commit to professional ethics and norms of engineering technology practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion.
PO8 – Individual and Collaborative Team Work	Ability to function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
PO9 – Communications	Ability to communicate effectively and inclusively on broadly-defined engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, considering cultural, language, and learning differences.
PO10 – Project Management and Finances	Ability to apply knowledge and understanding of engineering management principles and economic decision-making to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning	Ability to recognize the need for, and have the ability for independent and life-long learning and critical thinking in the face of new specialist technologies.
PO12 – Personal and Entrepreneurial Skills	Ability to demonstrate engagement in continuous self-development to advance career, professional or educational goals, and actively participating in entrepreneurial activities.

Four (4) years programme with 143 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE (%)
University Compulsory / General Elective (W)		16	11.19
Co-Curriculum (W)		2	1.40
Faculty Core (P)		17	11.89
Programme Core (K)	Core Courses	77	53.85
	Industrial Training	12	8.39
	Final Year Project	8	5.59
	Professional Certificate	0	0.00
Elective (E)	Programme	11	7.69
Total		143	100

CURRICULUM STRUCTURE FOR BMKM PROGRAMME

Year 1

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 1	BLHW 1772/ BLHW 1762	<i>Falsafah dan Cabaran Semasa</i> Philosophy and Current Challenges [#] / <i>Falsafah dan Isu Semasa</i> Philosophy and Current Issues ^{##}	W	2	-
	BKKX XXX1	<i>Kokurikulum I*</i> Co-curriculum I*	W	1	-
	BELG 1013	<i>Matematik Teknikal</i> Technical Mathematics	P	3	-
	BMKT 1112	<i>Fizik</i> Physics	P	2	-
	BMKT 1413	<i>Grafik Kejuruteraan</i> Engineering Graphics	K	3	-
	BMKT 1613	<i>Bahan Kejuruteraan</i> Engineering Materials	K	3	-
	BMKT 1623	<i>Amalan Pembuatan</i> Manufacturing Practices	K	3	-
	BMKT 2633	<i>Pengukuran dan Instrumentasi</i> Measurement and Instrumentation	K	3	-
TOTAL				20	
SEMESTER 2	BLLW 1142	<i>Bahasa Inggeris untuk Tujuan Akademik</i> English for Academic Purposes	W	2	-
	BKKX XXX1	<i>Kokurikulum II*</i> Co-curriculum II	W	1	-
	BMIG 1023	<i>Kalkulus untuk Teknologi</i> Calculus for Technology	P	3	-
	BMKT 1513	<i>Statik dan Dinamik</i> Statics and Dynamics	K	3	-
	BMKT 1713	<i>Prinsip Elektrik dan Elektronik</i> Principles of Electric and Electronic	K	3	-
	BMKT 2513	<i>Termodinamik</i> Thermodynamics	K	3	-
	BMKT 2423	<i>Permodelan dan Analisis Berkomputer</i> Modelling and Computer Analysis	K	3	BMKT 1413
TOTAL				18	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

[#] For local students

^{##} For international students

Year 2

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 3	BLLW XXX2	<i>Bahasa Ketiga**</i> Third Language**	W	2	-
	BERG 2043	<i>Kaedah Statistik</i> Statistical Methods	P	3	-
	BMKT 2433	<i>Rekabentuk Kejuruteraan</i> Engineering Design	K	3	-
	BMKT 2523	<i>Mekanik Bendalir</i> Fluid Mechanics	K	3	-
	BMKT 2833	<i>Rekabentuk Elemen Mesin</i> Machine Element Design	K	3	-
	BMKM 3123	<i>Teknologi Penyelenggaraan dan Pengurusan Aset</i> Maintenance Technology and Asset Management	K	3	-
	BMKT 3543	<i>Teknologi Pneumatik dan Hidraulik</i> Pneumatic and Hydraulic Technology	K	3	-
TOTAL				20	
SEMESTER 4	BLLW 2152	<i>Penulisan Akademik</i> Academic Writing	W	2	BLLW 1142
	BLHW 2722/ BLHW 2762	<i>Aspirasi Negara Bangsa</i> Malaysian Nation State Aspiration/ Citra Malaysia Malaysian Citra ^{##}	W	2	-
	BMKG 2033	<i>Kalkulus Gunaan untuk Teknologi</i> Applied Calculus for Technology	P	3	-
	BMKT 3743	<i>Kawalan dan Instrumentasi</i> Control and Instrumentation	K	3	-
	BMKT 2323	<i>Mekanik Pepejal</i> Solid Mechanics	K	3	-
	BMKM 2313	<i>Asas Tribologi</i> Basic Tribology	K	3	-
	BMKM 2112	<i>Pengenalan kepada Penyelenggaraan</i> Introduction to Maintenance	K	2	-
TOTAL				18	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

For local students

For international students

Year 3

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 5	BLLW 3162	<i>Bahasa Inggeris untuk Interaksi Profesional</i> English for Professional Interaction	W	2	BLLW 2152
	BLHW 2792	<i>Kursus Integriti dan Anti-Rasuah</i> Integrity and Anti-Corruption Course	W	2	-
	BMXX XXX0	<i>Kursus Persediaan Pensijilan Profesional</i> [%] Professional Certificate Preparation Course	P	0	-
	BMKM 2213	<i>Motor Industri</i> Industrial Motor	K	3	-
	BMKT 3443	<i>Projek Rekabentuk Bersepadu</i> Integrated Design Project	K	3	-
	BMKM 3323	<i>Teknologi Penghantaran</i> Transmission Technology	K	3	-
	BMKM 3333	<i>Diagnostik dan Pengenalpastian Masalah Penyelenggaraan</i> Maintenance Diagnostic and Troubleshooting	K	3	-
	BMKM 3343	<i>Penyelenggaraan Mesin Mekanikal</i> Mechanical Machine Maintenance	K	3	-
TOTAL				19	
SEMESTER 6	BLHC 4032	<i>Pemikiran Kritis dan Kreatif</i> Critical and Creative Thinking	W	2	-
	BMKT 3214	<i>Projek Sarjana Muda I</i> Bachelor Degree Project I	K	4	-
	BMKM 3133	<i>Analisis dan Pemantauan Getaran</i> Vibration Analysis and Monitoring	K	3	-
	BMKM XXX3	<i>Elektif I</i> ^{***} Elective I	E	3	-
	BMKM XXX3	<i>Elektif II</i> ^{***} Elective II	E	3	-
	BMKM XXX3	<i>Elektif III</i> ^{***} Elective III	E	3	-
TOTAL				18	

[%] Refer to List of Professional Certificate Preparation Course

^{***} Refer to List of Programme Elective Courses

Year 4

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 7	BTMW 4012	<i>Keusahawanan Teknologi</i> Technology Entrepreneurship	W	2	-
	BMIU 4053	<i>Etika Kejuruteraan dan KKPP</i> Engineering Ethics and OSHE	P	3	-
	BMKM 3154	<i>Pemeriksaan dan Penyelenggaraan Bangunan</i> Building Inspection and Maintenance	K	4	-
	BMKM 4142	<i>Kesedaran Penyelenggaraan dalam Reka Bentuk</i> Maintenance Awareness in Design	K	2	-
	BMKM 4353	<i>Analisis Minyak dan Serpihan</i> Oil and Wear Debris Analysis	K	3	-
	BMKT 4224	<i>Projek Sarjana Muda II</i> Bachelor Degree Project II	K	4	BMKT 3214
TOTAL				18	
SEMESTER 8	BMKT 4236	<i>Latihan Industri I</i> Industrial Training I	K	6	-
	BMKT 4246	<i>Latihan Industri II</i> Industrial Training II	K	6	-
TOTAL				12	
TOTAL OVERALL CREDIT				143	

List of Programme Elective Courses (may choose THREE):

NO.	CODE	COURSE
1	BMKH 4233	<i>Penyelenggaraan Sistem HVAC</i> Maintenance of HVAC System
2	BMKM 4173	<i>Penyelenggaraan Berasaskan Keadaan</i> Condition Based Maintenance
3	BMKM 4243	<i>Penentuan Instrumen</i> Instrument Calibration
4	BMKM 3233	<i>Teknologi Kawalan Industri</i> Industrial Control Technology
5	BMKM 4163	<i>Keboleharapan, Kebolehsenggaraan dan Risiko</i> Reliability, Maintainability and Risk

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (REFRIGERATION AND AIR-CONDITIONING SYSTEM) WITH HONOURS (BMKH)

ACCREDITATION: 2021-2026

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass Diploma / equivalent qualification recognized by the Government of Malaysia and approved by the University Senate; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Engineering with at least a CGPA of 2.00 **OR** Diploma in Engineering Technology with at least a CGPA of 2.30 **OR** Malaysian Skills Diploma (DKM) or Malaysian Advanced Skills Diploma (DLKM), with at least a CGPA 2.75/80% marks and above from Skills Development Department (JPK) recognized by the Government of Malaysia and approved by the University Senate, and pass Mathematics/Physics/Science and English in SPM **AND**
- ☑ Credit exemptions are subject to the faculty's approval **AND**
- ☑ Pass the Diploma program before the academic session begins.

MATRICULATION CERTIFICATE

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass KPM Matriculation / Asasi with at least a CGPA of 2.00; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass with at least Grade C (2.00) in Mathematics and Physics/ Engineering Science /Chemistry/Basic Engineering/ Biology where for Biology, must get at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM).

STPM HOLDERS

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass STPM with at least CGPA 2.00 and Grade C (2.00) in General Studies **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass STPM with at least Grade C (2.00) in
 - Mathematics (M)/Mathematics (T)
 - Physics/Chemistry/Biology **OR**
- ☑ Pass STPM with at least Grade C (2.00) in Physics/Chemistry/Biology and obtain at least Grade C in Mathematics/Additional Mathematics in the Malaysian Certificate of Education (SPM).

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:

PEO1	• Graduates who are able to practice the knowledge in Mechanical Engineering Technology (Refrigeration and Air Conditioning System).
PEO2	• Graduates who are able to engage with continuous development and adapt to evolving technologies.
PEO3	• Graduates who are able to adapt to professional ethics and leadership to meet the needs of the society.

Programme Objectives (PO)

Upon completion, graduates from this programme are expected to have these abilities:

PO	PO Statement
PO1 – Engineering Knowledge	Ability to apply knowledge of mathematics, natural science, computing and engineering fundamentals and engineering specialization principles to defined and applied engineering procedures, processes, systems or methodologies in the field of Mechanical Engineering Technology (Refrigeration and Air Conditioning System).
PO2 – Problem Analysis	Ability to identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools with considerations for sustainable development appropriate to Mechanical Engineering Technology (Refrigeration and Air Conditioning System).
PO3 – Design/ Development of Solutions	Ability to design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations.
PO4 – Investigation	Ability to conduct investigations of broadly-defined engineering problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
PO5 – Tool Usage	Ability to select and apply, and recognize limitations of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems.

PO6 – The Engineering Technologist and the World	Ability to analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving broadly-defined engineering problems.
PO7 – Ethics	Ability to understand and commit to professional ethics and norms of engineering technology practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion.
PO8 – Individual and Collaborative Team Work	Ability to function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
PO9 – Communications	Ability to communicate effectively and inclusively on broadly-defined engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, considering cultural, language, and learning differences.
PO10 – Project Management and Finances	Ability to apply knowledge and understanding of engineering management principles and economic decision-making to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning	Ability to recognize the need for, and have the ability for independent and life-long learning and critical thinking in the face of new specialist technologies.
PO12 – Personal and Entrepreneurial Skills	Ability to demonstrate engagement in continuous self-development to advance career, professional or educational goals, and actively participating in entrepreneurial activities.

Four (4) years programme with 142 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE (%)
University Compulsory / General Elective (W)		18	12.68
Co-Curriculum (W)		2	1.41
Faculty Core (P)		17	11.97
Programme Core (K)	Core Courses	76	53.52
	Industrial Training	12	8.45
	Final Year Project	8	5.63
	Professional Certificate	0	0
Elective (E)	Programme	9	6.33
Total		142	100

CURRICULUM STRUCTURE FOR BMKH PROGRAMME

Year 1

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 1	BLHW 1772/ BLHW 1762	<i>Falsafah dan Cabaran Semasa</i> Philosophy and Current Challenges [#] / <i>Falsafah dan Isu Semasa</i> Philosophy and Current Issues ^{##}	W	2	-
	BKKX XXX1	<i>Kokurikulum I*</i> Co-curriculum I*	W	1	-
	BELG 1013	<i>Matematik Teknikal</i> Technical Mathematics	P	3	-
	BMKT 1112	<i>Fizik</i> Physics	P	2	-
	BMKT 1413	<i>Grafik Kejuruteraan</i> Engineering Graphics	K	3	-
	BMKT 1613	<i>Bahan Kejuruteraan</i> Engineering Materials	K	3	-
	BMKT 1513	<i>Statik dan Dinamik</i> Statics and Dynamics	K	3	-
	BMKT 2633	<i>Pengukuran dan Instrumentasi</i> Measurement and Instrumentation	K	3	-
TOTAL				20	
SEMESTER 2	BLLW 1142	<i>Bahasa Inggeris untuk Tujuan Akademik</i> English for Academic Purposes	W	2	-
	BKKX XXX1	<i>Kokurikulum II*</i> Co-curriculum II*	W	1	-
	BMIG 1023	<i>Kalkulus untuk Teknologi</i> Calculus for Technology	P	3	-
	BMKH 1413	<i>Asas Elektrik dan Elektronik HVAC</i> Fundamental of HVAC Electric and Electronic	K	3	-
	BMKT 1623	<i>Amalan Pembuatan</i> Manufacturing Practices	K	3	-
	BMKT 2433	<i>Reka Bentuk Kejuruteraan</i> Engineering Design	K	3	-
	BMKT 2513	<i>Termodinamik</i> Thermodynamics	K	3	-
TOTAL				18	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

[#] For local students

^{##} For international students

Year 2

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 3	BLHW 2722/BLHW 2762	<i>Aspirasi Negara Bangsa</i> Malaysian Nation State Aspiration [#] / Citra Malaysia Malaysian Citra ^{##}	W	2	-
	BTMW 4012	<i>Keusahawanan Teknologi</i> Technology Entrepreneurship	W	2	-
	BERG 2043	<i>Kaedah Statistik</i> Statistical Methods	P	3	-
	BMKT 2733	<i>IOT dan Aplikasi Pengawal Mikro</i> Applied Microcontroller and IOT	K	3	-
	BMKT 2323	<i>Mekanik Pepejal</i> Solid Mechanics	K	3	-
	BMKT 2833	<i>Rekabentuk Elemen Mesin</i> Machine Element Design	K	3	-
	BMKT 2423	<i>Permodelan dan Analisis Berkomputer</i> Modelling and Computer Analysis	K	3	BMKT 1413
TOTAL				19	
SEMESTER 4	BLLW 2152	<i>Penulisan Akademik</i> Academic Writing	W	2	BLLW 1142
	BLLW 1XX2	<i>Bahasa Ketiga**</i> Third Language**	W	2	-
	BMKG 2033	<i>Kalkulus Gunaan untuk Teknologi</i> Applied Calculus for Technology	P	3	-
	BMKT 2523	<i>Mekanik Bendalir</i> Fluid Mechanics	K	3	-
	BMKT 3443	<i>Projek Rekabentuk Bersepadu</i> Integrated Design Project	K	3	-
	BMKH 2113	<i>Asas HVAC dan Penyejukan</i> Fundamental of HVAC and Refrigeration	K	3	-
	BMKT 3533	<i>Pemindahan Haba</i> Heat Transfer	K	3	-
TOTAL				19	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

For local students

For international students

Year 3

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 5	BLLW 3162	<i>Bahasa Inggeris untuk Interaksi Profesional</i> English for Professional Interaction	W	2	BLLW 2152
	BLHC 4032	<i>Pemikiran Kritis dan Kreatif</i> Critical and Creative Thinking	W	2	-
	BMKT 3743	<i>Kawalan dan Instrumentasi</i> Control and Instrumentation	K	3	-
	BMKH 3153	<i>Beban Pemanasan dan Penyejukan</i> Heating and Cooling Load	K	3	-
	BMKH 3133	<i>Rekabentuk Sistem Penyejukan</i> Refrigeration System Design	K	3	-
	BMKH 3433	<i>Akustik dan Getaran Gunaan HVAC</i> HVAC Applied Acoustics & Vibration	K	3	-
TOTAL				16	
SEMESTER 6	BLHW 2792	<i>Kursus Integriti dan Anti-Rasuah</i> <i>Integrity and Anti-Corruption Course</i>	W	2	-
	BMIU 4053	<i>Etika Kejuruteraan dan KKKP</i> Engineering Ethics and OSHE	P	3	-
	BMXX XXX0	<i>Kursus Persediaan Pensijilan Profesional</i> Professional Certificate Preparation Course [%]	P	0	-
	BMKH 3163	<i>Sistem Pengagihan Udara</i> Air Distribution System	K	3	-
	BMKH 3224	<i>Penyaman Udara dan Penyejukan Kenderaan</i> Transportation Air Conditioning and Refrigeration	K	4	-
	BMKT 3214	<i>Projek Sarjana Muda I</i> Bachelor Degree Project I	K	4	-
	BMKH 3423	<i>Sistem Elektrik dan Kawalan HVAC</i> HVAC Electrical and Control System	K	3	BMKH 1413
TOTAL				19	

[%] Refer to List of Professional Certificate Preparation Course

Year 4

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 7	BMKH 3213	<i>Kualiti Udara Dalam Indoor Air Quality</i>	K	3	-
	BMKH 4143	<i>Klasifikasi Sistem Penyaman Udara</i> Classification of Air Conditioning System	K	3	-
	BMKT 4224	<i>Projek Sarjana Muda II</i> Bachelor Degree Project II	K	4	BMKT 3214
	BMKH XXX3	<i>Elektif I***</i> Elective I	E	3	-
	BMKH XXX3	<i>Elektif II***</i> Elective II	E	3	-
	BMKH XXX3	<i>Elektif III***</i> Elective III	E	3	-
TOTAL				19	
SEMESTER 8	BMKT 4236	<i>Latihan Industri I</i> Industrial Training I	K	6	-
	BMKT 4246	<i>Latihan Industri II</i> Industrial Training II	K	6	-
TOTAL				12	
TOTAL OVERALL CREDIT				142	

*** Refer to List of Programme Elective Courses

List of Programme Elective Courses (may choose THREE):

NO.	CODE	COURSE
1	BMKH 4233	<i>Penyelenggaraan Sistem HVAC</i> Maintenance of HVAC System
2	BMKH 4173	<i>Permodelan dan Analisis HVAC</i> HVAC Modelling and Analysis
3	BMKM 4243	<i>Penentuan Instrumen</i> Instrument Calibration
4	BMKH 4243	<i>Teknologi Hijau HVAC</i> HVAC Green Technology
5	BMKH 4313	<i>Pengurusan Projek</i> Project Management
6	BMKH 4323	<i>Pembuatan Kejat</i> Lean Manufacturing
7	BMKH 4333	<i>Jig dan Lekapan</i> Jig and Fixtures

8	BMKH 4343	<i>Pengamalan Industri Terkehadapan</i> Industrial Forward Practice
9	BMKH 4353	<i>Kewangan, Kos dan Ekonomi Kejuruteraan</i> Engineering Financial, Costing and Economics
10	BMKH 4363	<i>Pengurusan Pembuatan</i> Manufacturing Management

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (AUTOMOTIVE TECHNOLOGY) WITH HONOURS (BMKA)

ACCREDITATION: 2021-2026

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass Diploma / equivalent qualification recognized by the Government of Malaysia and approved by the University Senate; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Engineering with at least a CGPA of 2.00 **OR** Diploma in Engineering Technology with at least a CGPA of 2.30 **OR** Malaysian Skills Diploma (DKM) or Malaysian Advanced Skills Diploma (DLKM), with at least a CGPA 2.75/80% marks and above from Skills Development Department (JPK) recognized by the Government of Malaysia and approved by the University Senate, and pass Mathematics/Physics/Science and English in SPM **AND**
- ☑ Credit exemptions are subject to the faculty's approval **AND**
- ☑ Pass the Diploma program before the academic session begins.

MATRICULATION CERTIFICATE

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass KPM Matriculation / Asasi with at least a CGPA of 2.00; **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass with at least Grade C (2.00) in Mathematics and Physics/ Engineering Science /Chemistry/Basic Engineering/ Biology where for Biology, must get at least Honors (Grade C) in Physics subject in the Malaysian Certificate of Education (SPM).

STPM HOLDERS

General Requirements:

- ☑ Pass SPM / equivalent with credit in Bahasa Melayu/ Bahasa Malaysia or credit in Bahasa Melayu/Bahasa Malaysia July Examination and pass History; **AND**
- ☑ Pass STPM with at least CGPA 2.00 and Grade C (2.00) in General Studies **AND**
- ☑ A minimum of Band 2 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass STPM with at least Grade C (2.00) in
 - Mathematics (M)/Mathematics (T)
 - Physics/Chemistry/Biology **OR**
- ☑ Pass STPM with at least Grade C (2.00) in Physics/Chemistry/Biology and obtain at least Grade C in Mathematics/Additional Mathematics in the Malaysian Certificate of Education (SPM).

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing expected achievements of graduates in their career and professional life after 3 to 5 years of graduation. The graduates from this programme are expected to become:

PEO1	Graduates who are able to practice the knowledge in Mechanical Engineering Technology (Automotive Technology).
PEO2	Graduates who are able to engage with continuous development and adapt to evolving technologies.
PEO3	Graduates who are able to adapt to professional ethics and leadership to meet the needs of the society.

Programme Objectives (PO)

Upon completion, graduates from this programme are expected to have these abilities:

PO	PO Statement
PO1 – Engineering Knowledge	Ability to apply knowledge of mathematics, natural science, computing and engineering fundamentals and engineering specialization principles to defined and applied engineering procedures, processes, systems or methodologies in the field of Mechanical Engineering Technology (Automotive Technology).
PO2 – Problem Analysis	Ability to identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools with considerations for sustainable development appropriate to Mechanical Engineering Technology (Automotive Technology).
PO3 – Design/ Development of Solutions	Ability to design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations.
PO4 – Investigation	Ability to conduct investigations of broadly-defined engineering problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.
PO5 – Tool Usage	Ability to select and apply, and recognize limitations of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems.

PO6 – The Engineering Technologist and the World	Ability to analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving broadly-defined engineering problems.
PO7 – Ethics	Ability to understand and commit to professional ethics and norms of engineering technology practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion.
PO8 – Individual and Collaborative Team Work	Ability to function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
PO9 – Communications	Ability to communicate effectively and inclusively on broadly-defined engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, considering cultural, language, and learning differences.
PO10 – Project Management and Finances	Ability to apply knowledge and understanding of engineering management principles and economic decision-making to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning	Ability to recognize the need for, and have the ability for independent and life-long learning and critical thinking in the face of new specialist technologies.
PO12 – Personal and Entrepreneurial Skills	Ability to demonstrate engagement in continuous self-development to advance career, professional or educational goals, and actively participating in entrepreneurial activities.

Four (4) years programme with 141 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE (%)
University Compulsory / General Elective (W)		18	12.77
Co-Curriculum (W)		2	1.42
Faculty Core (P)		17	12.06
Programme Core (K)	Core Courses	75	53.19
	Industrial Training	12	8.51
	Final Year Project	8	5.67
	Professional Certificate	0	0
Elective (E)	Programme	9	6.38
Total		141	100

CURRICULUM STRUCTURE FOR BMKA PROGRAMME

Year 1

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 1	BLHW 1772/BLHW 1762	<i>Falsafah dan Cabaran Semasa</i> Philosophy and Current Challenges [#] / <i>Falsafah dan Cabaran Semasa</i> Philosophy and Current Challenges ^{##}	W	2	-
	BLLW 1142	<i>Bahasa Inggeris untuk Tujuan Akademik</i> English for Academic Purposes	W	2	-
	BKKX XXX1	<i>Kokurikulum I*</i> Co-curriculum I*	W	1	-
	BELG 1013	<i>Matematik Teknikal</i> Technical Mathematics	P	3	-
	BMKT 1112	<i>Fizik</i> Physics	P	2	-
	BMKT 1413	<i>Grafik Kejuruteraan</i> Engineering Graphics	K	3	-
	BMKT 1613	<i>Bahan Kejuruteraan</i> Engineering Materials	K	3	-
	BMKT 1713	<i>Prinsip Elektrik dan Elektronik</i> Principles of Electric and Electronics	K	3	-
TOTAL				19	
SEMESTER 2	BLHW 2722/BLHW 2762	<i>Aspirasi Negara Bangsa</i> Malaysian Nation State Aspiration [#] / Citra Malaysia Malaysian Citra ^{##}	W	2	-
	BKKX XXX1	<i>Kokurikulum II*</i> Co-curriculum II*	W	1	-
	BMIG 1023	<i>Kalkulus untuk Teknologi</i> Calculus For Technology	P	3	-
	BMKT 2423	<i>Permodelan dan Analisis Berkomputer</i> Modelling and Computer Analysis	K	3	-
	BMKT 1513	<i>Statik dan Dynamics</i> Statics and Dynamics	K	3	-
	BMKT 1623	<i>Amalan Pembuatan</i> Manufacturing Practices	K	3	-
	BMKT 2633	<i>Pengukuran dan Instrumentasi</i> Measurement and Instrumentation	K	3	-
TOTAL				18	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

[#] For local students

^{##} For international students

Year 2

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 3	BLLW 2152	<i>Penulisan Akademik</i> Academic Writing	W	2	BLLW 1142
	BERG 2043	<i>Kaedah Statistik</i> Statistical Methods	P	3	-
	BMKT 2733	<i>IOT dan Aplikasi Pengawal Mikro</i> Applied Microcontroller and IOT	K	3	-
	BMKT 2513	<i>Termodinamik</i> Thermodynamics	K	3	-
	BMKV 3113	<i>Pengurusan Projek</i> Project Management	K	3	-
	BMKT 2833	<i>Rekabentuk Elemen Mesin</i> Machine Element Design	K	3	-
TOTAL				17	
SEMESTER 4	BLHC 4032	<i>Pemikiran Kritis dan Kreatif</i> Critical and Creative Thinking	W	2	-
	BLLW 1XX2	<i>Bahasa Ketiga**</i> Third Language**	W	2	-
	BMKG 2033	<i>Kalkulus Gunaan untuk Teknologi</i> Applied Calculus for Technology	P	3	-
	BMKT 3443	<i>Projek Rekabentuk Bersepadu</i> Integrated Design Project	K	3	-
	BMKT 2323	<i>Mekanik Pepejal</i> Solid Mechanics	K	3	-
	BMKT 2523	<i>Mekanik Bendalir</i> Fluid Mechanics	K	3	-
	BMKT 2433	<i>Rekabentuk Kejuruteraan</i> Engineering Design	K	3	-
TOTAL				19	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

Year 3

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 5	BMXX XXX0	<i>Kursus Persediaan Pensijilan Profesional</i> [%] Professional Certificate Preparation Course	P	0	-
	BMKT 3743	<i>Kawalan dan Instrumentasi</i> Control and Instrumentation	K	3	-
	BMKA 3313	<i>Sistem Brek Kenderaan</i> Vehicle Brake System	K	3	-
	BMKA 3113	<i>Enjin Pembakaran Dalaman</i> Internal Combustion Engine	K	3	-
	BMKA 3123	<i>Sistem Pengurusan Kuasa Kenderaan</i> Vehicle Powertrain Management System	K	3	-
	BMKA 3223	<i>Dinamik Kenderaan</i> Vehicle Dynamics	K	3	-
	BMKA 3323	<i>HVAC untuk Automotif</i> HVAC for Automotive	K	3	-
TOTAL				18	
SEMESTER 6	BLLW 3162	<i>Bahasa Inggeris untuk Interaksi Profesional</i> English for Professional Interaction	W	2	BLLW 2152
	BLHW 2792	<i>Kursus Integriti dan Anti-Rasuah</i> <i>Integrity and Anti-Corruption Course</i>	W	2	-
	BMIU 4053	<i>Etika Kejuruteraan dan KKKP</i> Engineering Ethics and OSHE	P	3	-
	BMKT 3214	<i>Projek Sarjana Muda I</i> Bachelor Degree Project I	K	4	-
	BMKX XXX3	<i>Elektif I</i> ^{***} Elective I	E	3	-
	BMKX XXX3	<i>Elektif II</i> ^{***} Elective II	E	3	-
	BMKX XXX3	<i>Elektif III</i> ^{***} Elective III	E	3	-
TOTAL				20	

[%] Refer to List of Professional Certificate Preparation Course

^{***} Refer to List of Programme Elective Courses

Year 4

	CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
SEMESTER 7	BTMW 4012	<i>Keusahawanan Teknologi</i> Technology Entrepreneurship	W	2	-
	BMKA 4233	<i>Sistem Penggantungan Kenderaan</i> Vehicle Suspension System	K	3	-
	BMKA 4143	<i>Sistem Transmisi Kenderaan</i> Vehicle Transmission System	K	3	-
	BMKA 4133	<i>Prestasi Enjin</i> Engine Performance	K	3	-
	BMKA 4243	<i>Sistem Pengeluaran Kejut</i> Lean Production System	K	3	-
	BMKT 4224	<i>Projek Sarjana Muda II</i> Bachelor Degree Project II	K	4	BMKT 3214
TOTAL				18	
SEMESTER 8	BMKT 4236	<i>Latihan Industri I</i> Industrial Training I	K	6	-
	BMKT 4246	<i>Latihan Industri II</i> Industrial Training II	K	6	-
TOTAL				12	
TOTAL OVERALL CREDIT				141	

List of Programme Elective Courses (may choose THREE):

NO.	CODE	COURSE
1	BMKA 4343	<i>Sistem Elektrik dan Elektronik Automotif</i> Automotive Electric and Electronic System
2	BMKA 4253	<i>Reka Bentuk dan Simulasi Kenderaan</i> Vehicle Design and Simulation
3	BMKA 4333	<i>Sistem Keselamatan dan Keselesaan Automotif</i> Automotive Safety and Comfort System
4	BMKM 4353	<i>Analisis Minyak dan Serpihan</i> Oil and Wear Debris Analysis
5	BMKA 4353	<i>Teknologi Pneumatik dan Hidraulik</i> Pneumatic and Hydraulic Technology

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY WITH HONOURS (BMKV) – PART TIME

ACRREDITATION: 2021-2026

Entry Requirement:

General Requirements:

- ☒ A Malaysian citizen.

AND

- ☒ Have passed the Malaysian Certificate of Education (SPM) or an equivalent qualification, with a credit (Grade C) in Bahasa Melayu/Bahasa Malaysia, or a credit in Bahasa Melayu/Bahasa Malaysia (July Paper), and have passed History (applicable to SPM 2013 and later) in the SPM examination;

OR

For applicants who did not obtain a credit in Bahasa Melayu/Bahasa Malaysia at the SPM level, they must obtain a credit (Grade C) in the subject before graduation.

AND

- ☒ Meet one of the following academic qualifications:

- ☒ Hold a Diploma or another qualification recognized as equivalent by the Government of Malaysia and approved by the University's Senate; **OR**

- ☒ Pass the Malaysian Higher School Certificate (STPM) examination with a minimum CGPA of 2.00 and a Grade C (NGMP 2.00) in three (3) subjects, including General Studies (Pengajian Am);

OR

- ☒ Pass the Matriculation examination with a minimum CGPA of 2.00;

OR

- ☒ Pass the GCE A-Level examination with a minimum of 9 points;

OR

- ☒ Pass the International Baccalaureate (IB) Diploma examination with a minimum of 24 points.

AND

- ☒ Meet one of the following English language requirements:

- ☒ Obtain at least Band 2 (Level 2) in the Malaysian University English Test (MUET);

OR

- ☒ Obtain at least Band 2 (Level 2) in the Malaysian University English Test (MUET) before graduation;

OR

- ☒ Obtain a minimum score of 500 in the Test of English as a Foreign Language (TOEFL) and Band 5.5 in the International English Language Testing System (IELTS) (applicable only to GCE A-Level and International Baccalaureate Diploma applicants).

Note: Applicants seeking admission to a Bachelor's Degree programme through the Accreditation of Prior Experiential Learning (APEL) pathway must possess relevant work experience and have successfully obtained the Bachelor's-level APEL.A certificate (APEL T-6). APEL certification must be applied for through the Malaysian Qualifications Agency (MQA).

Special Requirements:

Applicants must meet one of the following requirements:

- ☒ Pass a Diploma in Engineering, Diploma in Engineering Technology, or a Diploma in a related field with a minimum CGPA of 2.00 from recognised institutions and approved by the University Senate;

OR

- ☒ Pass the Malaysian Higher School Certificate (STPM) examination with at least a Grade C (NGMP 2.00) in each of the following subjects:

- ☒ General Studies (Pengajian Am)
- ☒ Mathematics (M) / Mathematics (T)

- ☒ Physics / Chemistry / Biology

AND

- ☒ Obtain at least a credit (Grade C) in Mathematics / Additional Mathematics at the Malaysian Certificate of Education (SPM) level.

OR

- ☒ Pass the Ministry of Education (MOE) Matriculation Programme, University of Malaya Foundation Programme (Asasi UM), Universiti Teknologi MARA Foundation Programme (Asasi UiTM), or another equivalent foundation programme, with at least a Grade C (2.00) in each of the following subjects: -

- ☒ Mathematics / Engineering Mathematics
- ☒ Physics / Chemistry / Biology / Mechanical Engineering / Electrical & Electronic Engineering / Civil Engineering / Basic Engineering
- ☒ For candidates who have Biology, they must obtain at least a credit (Grade C) in Physics at the Malaysian Certificate of Education (SPM) level.

OR

- ☒ Pass the Malaysian Skills Diploma (DKM) / Advanced Malaysian Skills Diploma (DLKM) with at least a CGPA of 2.00 / 50% marks / Pass in a related field from the Department of Skills Development (JPK) and obtain approval from the University Senate;

AND

Pass Mathematics / Physics / Science at the SPM level;

AND

Pass English (Grade E) at the SPM level.

OR

- ☒ Pass a Diploma in Technology / Technical / Vocational Studies from a Vocational College under the Ministry of Education Malaysia with a minimum overall CGPA of 2.50 in a recognised related field and obtain approval from the University Senate;

OR

Candidates who obtain a CGPA between 2.00 and 2.49 from the diploma programmes stated above and have at least two (2) years of relevant working experience are also eligible to apply.

OR

- ☒ Pass the GCE A-Level examination with at least a Grade C in each of the following subjects:

- ☒ Mathematics
- ☒ Physics
- ☒ One (1) additional subject at the GCE A-Level level

AND

- ☒ Obtain at least a credit (Grade C) in Mathematics / Additional Mathematics at the SPM level.

OR

- ☒ Pass the International Baccalaureate (IB) Diploma examination with at least Grade 4 in each of the following subjects:

- ☒ Mathematics
- ☒ Physics
- ☒ One (1) additional subject at the International Baccalaureate (IB) Diploma level

AND

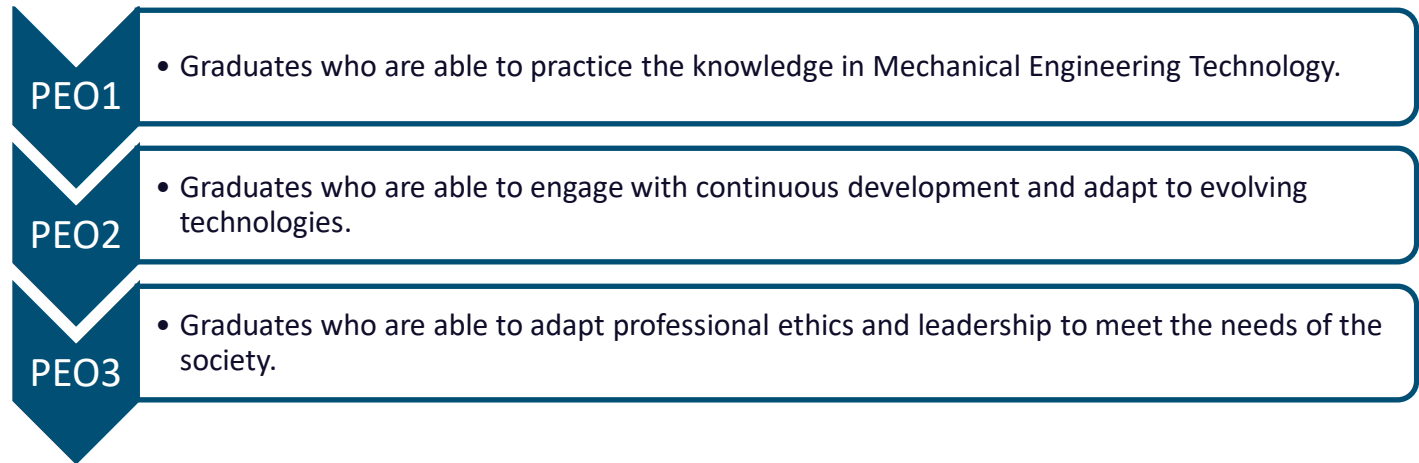
- ☒ Obtain at least a credit (Grade C) in Mathematics / Additional Mathematics at the SPM level.

AND

- ☒ Applicants must not have any physical disability or limb impairment that would hinder the performance of practical or laboratory work.

Programme Educational Objectives (PEO)

The graduates from this programme are expected to become:



Programme Objectives (PO)

Upon completion, graduates from this programme are expected to have these abilities:

PO	PO Statement
PO1 – Engineering Knowledge	Ability to apply knowledge of mathematics, natural science, computing and engineering fundamentals and engineering specialization principles to defined and applied engineering procedures, processes, systems or methodologies in the field of Mechanical Engineering Technology.
PO2 – Problem Analysis	Ability to identify, formulate, research literature and analyse broadly-defined engineering problems reaching substantiated conclusions using analytical tools with considerations for sustainable development appropriate to Mechanical Engineering Technology
PO3 – Design/ Development of Solutions	Ability to design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components or processes to meet identified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations.
PO4 – Investigation	Ability to conduct investigations of broadly-defined engineering problems; locate, search and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions.

PO5 – Tool Usage	Ability to select and apply, and recognize limitations of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems.
PO6 – The Engineering Technologist and the World	Ability to analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving broadly-defined engineering problems.
PO7 – Ethics	Ability to understand and commit to professional ethics and norms of engineering technology practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion.
PO8 – Individual and Collaborative Team Work	Ability to function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
PO9 – Communications	Ability to communicate effectively and inclusively on broadly-defined engineering activities with the engineering community and with society at large, by being able to comprehend and write effective reports and design documentation, make effective presentations, considering cultural, language, and learning differences.
PO10 – Project Management and Finances	Ability to apply knowledge and understanding of engineering management principles and economic decision-making to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.
PO11 – Life Long Learning	Ability to recognize the need for, and have the ability for independent and life-long learning and critical thinking in the face of new specialist technologies.
PO12 – Personal and Entrepreneurial Skills	Ability to demonstrate engagement in continuous self-development to advance career, professional or educational goals, and actively participating in entrepreneurial activities.

6.5 years programme with 142 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE (%)
University Compulsory / General Elective (W)		18	12.68
Co-Curriculum (W)		2	1.41
Faculty Core (P)		21	14.79
Programme Core (K)	Core Courses	69	48.59
	Industrial Training	12	8.45
	Final Year Project	8	5.63
	Professional Certificate	0	0.00
Elective (E)	Programme	12	8.45
Total		142	100

CURRICULUM STRUCTURE FOR BMKV PROGRAMME – PART TIME

Year 1 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 2152	ACADEMIC WRITING	W	2	-
BELG 1013	TECHNICAL MATHEMATICS	P	3	-
BMKT 1123	TECHNICAL PHYSICS	P	3	-
BMKT 1313	STATICS AND DYNAMICS	K	3	-
TOTAL			11	

Year 1 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 1142	ENGLISH FOR ACADEMIC PURPOSES	W	2	-
BMKT 1613	ENGINEERING MATERIALS	K	3	-
BMKT 1413	ENGINEERING GRAPHICS	K	3	-
BMKT 1713	PRINCIPLE OF ELECTRIC & ELECTRONICS	K	3	-
TOTAL			11	

Year 1 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 2722	MALAYSIAN NATION STATE ASPIRATION	W	2	-
BMKT 1623	MANUFACTURING PRACTICE	K	3	-
TOTAL			5	

Year 2 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 1XX2	THIRD LANGUAGE**	W	2	-
BERG 2023	STATISTICAL METHODS	P	3	-
BMKT 2513	THERMODYNAMICS	K	3	-
BMKT 2433	ENGINEERING DESIGN	K	3	-
TOTAL			11	

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

Year 2 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM I*	W	1	-
BMKT 1133	TECHNICAL CHEMISTRY	P	3	-
BMIG 1023	CALCULUS FOR TECHNOLOGY	P	3	-
BMKT 2323	FLUID MECHANICS	K	3	-
TOTAL			10	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 3162	ENGLISH FOR PROFESSIONAL INTERACTION	W	2	-
BMKT 2633	MEASUREMENT AND INSTRUMENTATION	K	3	-
TOTAL			5	

Year 3 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 1772	PHILOSOPHY AND CURRENT CHALLENGES	W	2	-
BMKG 2033	APPLIED CALCULUS FOR TECHNOLOGY	P	3	-
BMKT 2423	MODELLING & COMPUTER ANALYSIS	K	3	-
BMKH 2113	FUNDAMENTAL OF HVAC AND REFRIGERATION	K	3	-
TOTAL			11	

Year 3 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM II*	W	1	-
BMKT 2323	SOLID MECHANICS	K	3	-
BMKT 1XX3	MACHINE ELEMENT DESIGN	K	3	-
BMKT 3533	HEAT TRANSFER	K	3	-
TOTAL			10	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 3 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKV 3113	PROJECT MANAGEMENT	K	3	-
BMMH 3323	CONTROL AND INSTRUMENTATION	K	3	-
TOTAL			6	

Year 4 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHC 4032	CRITICAL AND CREATIVE THINKING	W	2	-
BMKH 4233	MAINTENANCE OF HVAC SYSTEM	K	3	-
BMKT 3343	MECHANICAL VIBRATION	K	3	-
BMKV 3133	ENVIRONMENTAL AND SUSTAINABILITY	K	3	-
TOTAL			11	

Year 4 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BTMW 4012	TECHNOLOGY ENTREPRENEURSHIP	W	2	-
BMKT 4243	ENGINEERING ETHICS AND OSHE	P	3	-
BMKT 1XX3	MICROPROCESSOR TECHNOLOGY AND COMPUTER PROGRAMMING	K	3	-
BMKT 3543	PNEUMATIC & HYDRAULIC TECHNOLOGY	K	3	-
BMXX XXX0	PROFESSIONAL CERTIFICATE PREPARATION COURSE%		0	-
TOTAL			11	

% Refer to List of Professional Certificate Preparation Course

Year 4 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKT 1XX3	ENGINEERING TECHNOLOGY DESIGN PROJECT	K	3	-
BLHX XXX2	GENERAL ELECTIVE****	E	2	-
TOTAL			5	

**** Refer to List of General Elective Courses

Year 5 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKT 3453	COMPUTER SIMULATION	K	3	-
BMKV 4XX3	ELECTIVE I***	E	3	-
BMKV 4XX3	ELECTIVE II***	E	3	-
TOTAL			9	

*** Refer to List of Programme Elective Courses

Year 5 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKT 3214	BACHELOR DEGREE PROJECT I	K	4	-
BMMX XXX3	ELECTIVE III***	K	3	-
BMMX XXX3	ELECTIVE IV***	K	3	-
TOTAL			10	

*** Refer to List of Programme Elective Courses

Year 5 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKT 4224	BACHELOR DEGREE PROJECT II	K	4	-
TOTAL			4	

Year 6 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKT 4236	INDUSTRIAL TRAINING	K	6	-
BMKT 4236	INDUSTRIAL TRAINING	K	6	-
TOTAL			12	
TOTAL OVERALL CREDIT			142	

List of Programme Elective Courses (may choose FOUR):

NO	CODE	COURSE
1	BMKV 4123	<i>Kelestarian dan Bangunan Hijau</i> Green Building and Sustainability
2	BMKV 4133	<i>Utiliti Bangunan</i> Building Utilities
3	BMKV 4143	<i>Kejuruteraan Perkhidmatan Bangunan</i> Building Services Engineering
4	BMKV 4153	<i>Teknik Penyelenggaraan Bangunan</i> Building Maintenance Technique
5	BMKV 4213	<i>Pengenalan Senibina dan Rekabentuk Kapal</i> Introduction to Ship Design and Architecture
6	BMKV 4223	<i>Sistem Teknologi Marin</i> Marine Technology System
7	BMKV 4233	<i>Teknologi Kapal Kecil</i> Small Craft Technology
8	BMKV 4243	<i>Pemeriksaan dan Penyelenggaraan Marin</i> Marine Inspection and Maintenance
9	BMKV 4323	<i>Teknologi Air dan Air Sisa</i> Water and Waste Water Technology
10	BMKV 4333	<i>Teknologi Pengurusan Sisa Pepejal</i> Solid Waste Management Technology
11	BMKV 4343	<i>Teknologi Kualiti Udara dan Kawalan Pencemaran</i> Air Quality and Pollution Control Technology
12	BMKV 4353	<i>Pengurusan Sisa Industri dan Sisa Berjadual</i> Industrial and Hazardous Waste Management
13	BMKV 44X3	<i>Pengenalan kepada Rekabentuk & Senibina Pesawat</i> Introduction to Aircraft Design & Architecture
14	BMKV 44X3	<i>Bahan & Pembuatan Aeroangkasa</i> Aerospace Materials & Manufacturing
15	BMKV 44X3	<i>Aerodinamik Pesawat</i> Aircraft Aerodynamics
16	BMKV 44X3	<i>Avionik</i> Avionics

List of General Elective courses (may choose ONE):

CODE	COURSE NAME
BLHW 1722	<i>Falsafah Sains Dan Teknologi</i> Philosophy of Science and Technology
BLHH 1032	<i>Psikologi Industri dan Organisasi</i> Industrial Psychology and Organization
BLHC 4012	<i>Komunikasi Keorganisasian</i> Organizational Communication
BLHC 4022	<i>Kemahiran Perundingan</i> Negotiation Skills

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF TECHNOLOGY IN AIR CONDITIONING AND REFRIGERATION WITH HONOURS (BMKS)

ACCREDITATION: 2024-2029

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Acquire a Malaysian Skills Diploma (DKM), Malaysian Advanced Skills Diploma (DLKM), or Malaysian Vocational Diploma (DVM) designated equivalent by the Malaysian Government and approved by the University Senate; **AND**
- ☑ A minimum of Band 1 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Technology from Vocational College under the Malaysian Ministry of Education, with at least a CGPA of 2.00 in a recognized related field and approved by the University Senate; **OR**
- ☑ Pass a Malaysian Skills Diploma (DKM)/ Malaysian Advanced Skills Diploma (DLKM) from Skills Development Department (JPK) under the Ministry of Human Resources by obtaining at least a CGPA 2.00 in a recognized related field and approved by the University Senate. **AND**
- ☑ Have passed/ completed studies at the Diploma level before the application closing date; **AND**
- ☑ Candidates do NOT have physical disabilities / limbs that make practical work difficult. **AND**
- ☑ Admission is for Year 1 only without credit exemption.

Programme Educational Objectives (PEO)

The educational objectives of this programme are:

PEO1

- To produce air conditioning and refrigeration system technologist that can perform and manage installation and maintenance of air conditioning and refrigeration work.

PEO2

- To produce technopreneurs in air conditioning and refrigeration related technology.

PEO3

- To produce relevant, respected and referred professionals in air conditioning and refrigeration installation and maintenance technology.

Programme Objectives (PO)

Upon completion, graduates from this programme are expected to be able to:

PO	PO Statement
PO1 - Knowledge	Apply knowledge of technology fundamentals to broadly-defined procedures processes, systems and methodologies in air conditioning and refrigeration technology.
PO2 - Practical Skills/Modern Tool Usage/ Digital Skills	Able to suggest and apply latest tools and techniques to solve broadly-defined problems.
PO3 - Analytical, Critical Thinking, Design Thinking and Scientific Approach / Numeracy Skills	Demonstrate strong analytical and critical thinking skills to solve broadly-defined problems in air conditioning and refrigeration technology.
PO4 - Communication Skills	Able to communicate and articulate effectively in both verbal and written among technologist communities and society at large.
PO5 - Social Responsibility in Society and Technologist Community	Demonstrate understanding of the societal related issues and the consequent responsibilities relevant to broadly-defined technology practices.
PO6 - Lifelong Learning and Information Management / Personal Skills	Recognize the needs for professional development and to engage in independent lifelong learning in specialist technologies.
PO7 - Technopreneurial and Management Skills	Demonstrate an awareness of management and technopreneuership practices in real perspective.
PO8 - Ethics and Professionalism	Demonstrate professionalism, social, and ethical consideration.
PO9 - Teamwork and Leadership	Demonstrate leadership quality, mentoring and work effectively in diverse teams.

3.5 years programme with 120 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE
University Compulsory (W)		16	13.33%
Co-Curriculum (W)		2	1.67%
Faculty Core (P)		8	6.67%
Programme Core (K)	Core Courses	72	60.00%
	Industrial Training	12	10.00%
	Final Year Project	10	4.44%
Elective (E)	Programme	0	20.00%
Total		120	100%

CURRICULUM STRUCTURE FOR BMKS PROGRAMME

Year 1 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM I*	W	1	-
BLLW 1222	THIRD LANGUAGE**	W	2	-
BLLW 1142	ENGLISH FOR ACADEMIC PURPOSE	W	2	-
BMKS 1013	INDUSTRIAL REVOLUTIONS	K	3	-
BMKS 1026	ADVANCED CAD IN HVAC	K	6	-
BMKS 1034	SAFETY IN HVAC ENVIRONMENT	K	4	-
TOTAL			18	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

Year 1 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM II*	W	1	-
BTMW 1112	BASIC TECHNOPRENEUR	W	2	-
BLHW 1772	PHILOSOPHY AND CURRENT CHALLENGES	W	2	-
BLLW 2152	ACADEMIC WRITING	W	2	BLLW 1142
BMKS 1044	APPLICATION OF HVAC STANDARD FOR COMMERCIAL BUILDINGS	K	4	-
BMKS 1054	BUSINESS IN HVAC	K	4	-
TOTAL			15	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 2722	MALAYSIAN NATION STATE ASPIRATION	W	2	-
BMKS 2063	INDUSTRIAL PSYCHOLOGY	K	3	-
BMKS 2076	APPLIED INDUSTRIAL REFRIGERATION	K	6	-
BMKS 2086	HVAC COMMERCIAL BUILDING PROJECT MANAGEMENT	K	6	-
TOTAL			17	

Year 2 (Semester 4)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 2792	INTEGRITY AND ANTI CORRUPTION COURSE	W	2	-
BTMW 2124	CAPSTONE TECHNOPRENEURSHIP 1	P	4	-
BMMS 2096	HVAC WATER TREATMENT MANAGEMENT	K	6	-
BMMS 2106	CHILLER PLANT MONITORING	K	6	-
TOTAL			18	

Year 3 (Semester 5)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 3162	ENGLISH FOR PROFESSIONAL INTERACTION	W	2	BLLW 2152
BMXX XXX0	PROFESSIONAL CERTIFICATE PREPARATION COURSE	P	0	-
BTMW 3134	CAPSTONE TECHNOPRENEURSHIP 2	P	4	-
BMMS 3116	INDOOR AIR QUALITY CONTROL	K	6	-
BMMS 3126	HVAC INSPECTION	K	6	-
TOTAL			18	

Year 3 (Semester 6)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 3134	FINAL YEAR PROJECT 1	K	4	-
BMMS 3146	HVAC PROJECT PLANNING AND DEVELOPMENT	K	6	-
BMMS 3156	TESTING & COMMISSIONING COMMERCIAL HVAC	K	6	-
TOTAL			16	

Year 3 (Short Semester)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 3186	FINAL YEAR PROJECT 2	K	6	BMKU 3134
TOTAL			6	

Year 4 (Semester 7)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 4212	INDUSTRIAL TRAINING	K	12	
TOTAL			12	
TOTAL OVERALL CREDIT			120	

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.

BACHELOR OF TECHNOLOGY IN AUTOMOTIVE WITH HONOURS (BMKF)

ACCREDITATION: 2024-2029

Entry Requirement:

DIPLOMA HOLDERS / EQUIVALENT

General Requirements:

- ☑ Acquire a Malaysian Skills Diploma (DKM), Malaysian Advanced Skills Diploma (DLKM), or Malaysian Vocational Diploma (DVM) designated equivalent by the Malaysian Government and approved by the University Senate; **AND**
- ☑ A minimum of Band 1 in Malaysian University English Test (MUET).

Program's Special Requirements:

- ☑ Pass a Diploma in Technology from Vocational College under the Malaysian Ministry of Education, with at least a CGPA of 2.00 in a recognized related field and approved by the University Senate; **OR**
- ☑ Pass a Malaysian Skills Diploma (DKM)/ Malaysian Advanced Skills Diploma (DLKM) from Skills Development Department (JPK) under the Ministry of Human Resources by obtaining at least a CGPA 2.00 in a recognized related field and approved by the University Senate. **AND**
- ☑ Have passed/ completed studies at the Diploma level before the application closing date; **AND**
- ☑ Candidates do NOT have physical disabilities / limbs that make practical work difficult. **AND**
- ☑ Admission is for Year 1 only without credit exemption.

Programme Educational Objectives (PEO)

The educational objectives of this programme are:

PEO1

- To produce automotive technologist that can perform automotive related work including diagnostic specialist and retrofit specialist.

PEO2

- To produce technopreneurs in automotive related technology.

PEO3

- To produce relevant, respected and referred professionals in automotive technology

Programme Objectives (PO)

Upon completion, graduates from this programme are expected to be able to:

PO	PO Statement
PO1 - Knowledge	Apply knowledge of technology fundamentals to broadly-defined procedures processes, systems and methodologies in automotive.
PO2 - Practical Skills/Modern Tool Usage/ Digital Skills	Able to suggest and apply latest tools and techniques to solve broadly-defined problems.
PO3 - Analytical, Critical Thinking, Design Thinking and Scientific Approach / Numeracy Skills	Demonstrate strong analytical and critical thinking skills to solve broadly-defined problems in automotive.
PO4 - Communication Skills	Able to communicate and articulate effectively in both verbal and written among technologist communities and society at large.
PO5 - Social Responsibility in Society and Technologist Community	Demonstrate understanding of the societal related issues and the consequent responsibilities relevant to broadly-defined technology practices.
PO6 - Lifelong Learning and Information Management / Personal Skills	Recognize the needs for professional development and to engage in independent lifelong learning in specialist technologies.
PO7 - Technopreneurial and Management Skills	Demonstrate an awareness of management and technopreneuership practices in real perspective.
PO8 - Ethics and Professionalism	Demonstrate professionalism, social, and ethical consideration.
PO9 - Teamwork and Leadership	Demonstrate leadership quality, mentoring and work effectively in diverse teams.

3.5 years programme with 120 credit hours.

COMPONENTS		CREDIT HOURS	PERCENTAGE
University Compulsory (W)		16	13.33%
Co-Curriculum (W)		2	1.67%
Faculty Core (P)		8	8.33%
Programme Core (K)	Core Courses	48	40.00%
	Industrial Training	12	10.00%
	Final Year Project	10	4.44%
Elective (E)	Programme	24	20.00%
Total		120	100%

CURRICULUM STRUCTURE FOR BMKF PROGRAMME

Year 1 (Semester 1)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM I*	W	1	-
BLLW 1222	THIRD LANGUAGE**	W	2	-
BLLW 1142	ENGLISH FOR ACADEMIC PURPOSE	W	2	-
BMKF 1014	AUTOMOTIVE INDUSTRY & TECHNOLOGY	K	4	-
BMKF 1023	AUTOMOTIVE DRAFTING	K	3	-
BMKF 1034	AUTOMOTIVE WORKSHOP PRACTICE	K	4	-
TOTAL			16	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

**Refer to language courses offered by School of International Studies and Global Languages. International students whose native language is not Malay are required to take BLLW 1282 Malay 2. Also refer to List of Third Language Courses.

Year 1 (Semester 2)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BKKX XXX1	CO-CURRICULUM II*	W	1	
BTMW 1112	BASIC TECHNOPRENEUR	W	2	
BLHW 1772	PHILOSOPHY AND CURRENT CHALLENGES	W	2	
BLLW 2152	ACADEMIC WRITING	W	2	BLLW 1142
BMKF 1043	SHOPFLOOR SUPERVISION	K	3	
BMKF 1054	AUTOMOTIVE COMPONENT FABRICATION	K	4	
BMKF 1064	AUTOMOTIVE COMPONENT DESIGN & ASSEMBLY	K	4	
TOTAL			18	

*Refer to Co-Curriculum Courses offered by Institute of Sustainable Technology.

Year 2 (Semester 3)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLLW 3162	ENGLISH FOR PROFESSIONAL INTERACTION	W	2	BLLW 2152
BMKF 2073	PROJECT MANAGEMENT	K	3	-
BMKF 2084	AUTOTRONIC SYSTEM SERVICE	K	4	-
BMKF 2XX4	ELECTIVE I***	E	4	-
BMKF 2XX4	ELECTIVE II***	E	4	-
TOTAL			17	

*** Refer to List of Programme Elective Courses

Year 2 (Semester 4)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BLHW 2722	MALAYSIAN NATION STATE ASPIRATION	W	2	-
BLHW 2792	INTEGRITY AND ANTI CORRUPTION COURSE	W	2	-
BTMW 2124	CAPSTONE TECHNOPRENEURSHIP 1	P	4	-
BMKF 2134	POWERTRAIN SYSTEM SERVICE	K	4	-
BMKF 2XX4	ELECTIVE III***	E	4	-
BMKF 2XX4	ELECTIVE IV***	E	4	-
TOTAL			20	

*** Refer to List of Programme Elective Courses

Year 3 (Semester 5)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMXX XXX0	PROFESSIONAL CERTIFICATE PREPARATION COURSE%	P	0	-
BTMW 3134	CAPSTONE TECHNOPRENEURSHIP 2	P	4	-
BMKF 3183	AUTOMOTIVE LEGISLATION	K	3	-
BMKF 3192	VEHICLE MARKETING	K	2	-
BMKF 3XX4	ELECTIVE V***	E	4	-
BMKF 3XX4	ELECTIVE VI***	E	4	-
TOTAL			17	

*** Refer to List of Programme Elective Courses

% Refer to List of Professional Certificate Preparation Course

Year 3 (Semester 6)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 3134	FINAL YEAR PROJECT 1	K	4	-
BMKF 3243	ASSET AND INVENTORY MANAGEMENT	K	3	-
BMKF 3256	QUALITY MANAGEMENT	K	4	-
BMKF 3263	RISK ASSESSMENT	K	3	-
TOTAL			14	

Year 3 (Short Semester)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 3186	FINAL YEAR PROJECT 2	K	6	BMKU 3134
TOTAL			6	

Year 4 (Semester 7)

CODE	COURSE	CATEGORY	CREDIT	PRE-REQUISITE
BMKU 4212	INDUSTRIAL TRAINING	K	12	
TOTAL			12	
TOTAL OVERALL CREDIT			120	

List of Programme Elective Courses:

For Elective I (may choose ONE):

NO.	CODE	COURSE NAME
1	BMKF 2094	Commercial Vehicle Servicing and Maintenance
2	BMKF 2104	Surface Design

For Elective II (may choose ONE):

NO.	CODE	COURSE NAME
1	BMKF 2114	Drivetrain Maintenance
2	BMKF 2124	Automotive Modelling

For Elective III (may choose ONE):

NO.	CODE	COURSE NAME
1	BMKF 2144	Vehicle Performance Analysis
2	BMKF 2154	Exterior Design

For Elective IV (may choose ONE):

NO.	CODE	COURSE NAME
1	BMKF 2164	Vehicle Fault Diagnosis
2	BMKF 2174	Component Remanufacturing

For Elective V (may choose ONE):

NO.	CODE	COURSE NAME
1	BMKF 3204	Hybrid Servicing
2	BMKF 3214	Interior Design

For Elective VI (may choose ONE):

NO.	CODE	COURSE NAME
1	BMKF 3224	Electric Vehicle Servicing
2	BMKF 3234	Painting

List of Professional Certificate Preparation Course:

CODE	CERTIFICATE NAME
BMMD 3100	SolidWorks Associate Certificate
BMIG 3310	CATIA Part Certificate

List of Third Language Courses:

CODE	COURSE
BLLW 1222	MANDARIN 1
BLLW 1242	KOREAN 1
BLLW 1212	ARABIC 1
BLLW 1252	GERMAN 1
BLLW 1232	JAPANESE 1
BLLW 1282	MALAY 2*

* For international students whose native language is not Malay.