CEEM246
STUDENT HANDBOOK

2022 EDITION

UNIVERSITI TEKNOLOGI MARA

UNIVERSITI TEKNOLOGI MARA CAWANGAN TERENGGANU KAMPUS BUKIT BESI (UiTMCTKBB)

COLLEGE OF ENGINEERING
SCHOOL OF MECHANICAL ENGINEERING

BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY (CEEM246)

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INTRODUCTION

COLLEGE INFORMATION

VISION

To establish UiTM as a Globally Renowned University of Science, Technology, Humanities and Entrepreneurship.

MISSION

To lead the development of agile, professional Bumiputeras through state-of-the-art curricula and impactful research.

VALUES

- Excellence: Practicing internal quality standards to fulfil the stakeholders' requirements and expectations.
- Synergy: Collaborating seamlessly to maximize productivity that benefits industry and society.
- Integrity: Embracing honesty, respect, and transparency to achieve the highest ethical standard of professionalism.

COLLEGE BACKGROUND

HISTORY

College of Mechanical Engineering of UiTM is the off-spring of the former School of Engineering (one of the oldest School of ITM/UiTM-established in 1967) which was formed in 1996 with three faculties, namely Civil, Electrical and Mechanical Engineering.

The establishment of the College of Mechanical Engineering (FKM) in University Teknologi MARA Terengganu branch, Bukit Besi Campus (UiTMCTKBB) is to increase the number of bumiputera students to meet the manpower needs of mechanical engineering throughout the country. It was established in line with the establishment of UiTMCTKBB in year 2013.

TEACHING STAFF

To ensure a high teaching standard, the college is very selective on the recruitment of lecturers and supporting staff. The college currently has 22 lecturers and 8 assistant engineers. Lecturers are required to upgrade their knowledge and skills by carrying out research and consultancy work. They can undertake short-term or long-term research projects and another relevant consultancy works. Besides teaching, lecturers are also encouraged to engage in industrial training to obtain a professional engineer status (PE). The lecturers are assessed for their career enhancement annually according to the university's policy.

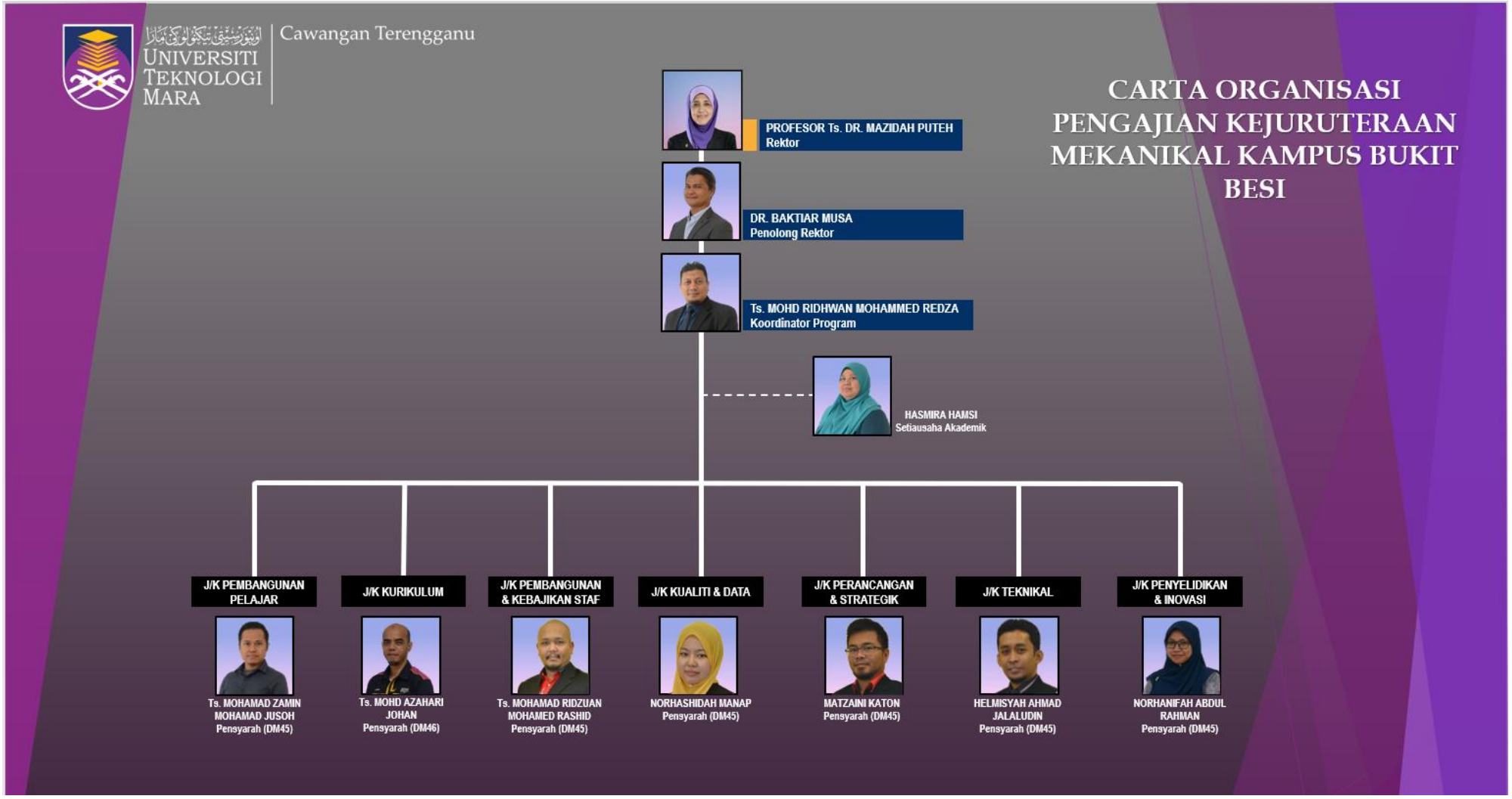
COLLEGE FACILITIES

Below is a list of equipment available at our facilities, mainly in various Collage laboratories and workshops in the campus:

Workshop / Laboratories	Equipment
Advanced Machining Lab	CNC Router 5 Axis
	Ships Stability Apparatus
	Radial Drilling Machine
	CNC Milling Machine
Fluid Mechanics Lab	Personal Circulating Water Channel
	Hydrostatic Pressure Apparatus
	Base Module for Experiments in Fluid Mechanics C/W Measurement of Jet Force and Losses In Piping Elements, Valve And Fittings
	Hydrostatic & Properties of Fluid Apparatus
Thermodynamics & Heat Transfer Lab	Combustion Laboratory Unit
	Steam Motor & Energy Conversion Test
	Marcet Boiler
	Computer Linked Refrigeration Plant
	Cooling Tower Test Rig
	Concentric Tube Heat Exchanger
	Recirculating Air-Conditioning Unit
	Boyle's Law Demonstrationg Unit

Welding Workshop	Arc Welding Machine
	Arc welding bench c/w fume extractor
	TIG Welding Machine (Gas Tungsten Arc Welding)
	MIG Welding Machine (Gas Metal Arc Welding)
	Plasma Cutting Machine
	75 Ton Press Machine
	50 Ton Press Machine
	Hydraulics Shearing Machine
	Portable Gas cutting set c/w Cylinder and Torch
	Gas Cylinder (Oxygen & Acetylene)
	Horizontal Band Saw
	Pedestal Grinding Machine
	Disc Cutter Machine
	Bench Drilling Machine
	Vertical Band Saw
	Lab Drying Oven
Foundry and Sand Testing Lab	Sand Mixer
	Electric Bench Top Melting Furnace
	Jolt Squeeze
	Sand Mill
	Sand separator
	Sand Blasting Machine
	Flask Set
	Patterns
	Sand Rammer
	Permeability Meter
	Moisture Tester
	Sand Mixer Lab Type
	Digital Balance
	Sieve Shaker
	High Temperature Oven
	Sand Strength Machine
	Methylene Blue Clay Tester
	Laboratory Shifter
	Horizontal Band Saw
	Disc and Belt Sander
Engineering Workshop	Bench Drilling Machine
	Profile Bending Machine
	Petrol Engine Training Plant
	Diesel Engine Test Bed
	Thermal Imager
	Pedestal Grinding Machine
	Bench Drilling Machine
	Bending Machine (Metal Sheet)
	Foot Shearing Machine
	Plate Roller
	Hydraulic Swing Beam Shearing Machine
Hydraulics & Pneumatics Lab	Hydraulic & Electro-hydraulic Trainer Set
	Pneumatic & Electro-pneumatic Trainer Set
Strength of Materials Lab	Torsion Testing Apparatus
	Thin-Walled Cylinder Apparatus
	Struts Apparatus (Buckling Tester)
	Deflection of Beam Apparatus
	Tensile Testing Machine

Material Science Lab	Abrasive Cutter
	Universal Polisher
	Specimen Dryer
	Vickers Micro-Hardness Tester
	Metallographic Microscope
	Automatic Mounting Press
	High Temperature Furnace
	Precision Cutter
Dynamics and Controls Lab	Slider Crank
	Flywheel Apparatus
	Wheel and Axle Apparatus
	Dependent Motion Apparatus
	Level control apparatus set
	Speed control apparatus set
	PLC Training Kit
	Pressure control apparatus set
Engineering Drawing Studio	Long Ship Drawing Table
Naval Architecture Studio	Long Ship Drawing Table
Marin CADEM Lab	Workstation
Mechanical CADEM Lab	Workstation
Machine Shop	Metal Lathe Machine
	Milling Machine
	Horizontal Band Saw


UNIVERSITI TEKNOLOGI MARA
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CARTA ORGANISASI
PENGAJIAN KEJURUTERAAN
MEKANIKAL KAMPUS BUKIT
BESI
PROFESOR Ts. DR. MAZIDAH PUTEH
Rektor
DR. BAKTIAR MUSA
Penolong Rektor
Ts. MOHD RIDHWAN MOHAMMED REDZA
Koordinator Program
HASMIRA HAMSI
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Ts. MOHAMAD ZAMIN MOHAMAD JUSOH
Pensyarah (DM45)
J/K KURIKULUM
Ts. MOHD AZAHARI JOHAN
Pensyarah (DM46)
J/K PEMBANGUNAN & KEBAJIKAN STAF
Ts. MOHAMAD RIDZUAN MOHAMED RASHID
Pensyarah (DM45)
J/K KUALITI & DATA
NORHASHIDAH MANAP
Pensyarah (DM45)
J/K PERANCANGAN & STRATEGIK
MATZAINI KATON
Pensyarah (DM45)
J/K TEKNIKAL
HELMISYAH AHMAD JALALUDIN
Pensyarah (DM45)
J/K PENYELIDIKAN & INOVASI
NORHANIFAH ABDUL RAHMAN
Pensyarah (DM45)

PROGRAM INFORMATION

ACADEMIC PROGRAMME

The college offers two education programs, which is Diploma in Mechanical Engineering (CEEM110) and Bachelor of Mechanical Engineering Technology (Honours), CEEM246. The current CEEM110 program is MQA accredited and partially accredited by ETAC, while the newly offered program, EM246 is partially accredited by ETAC in Jun 2020.

PROGRAMME LEVEL

The Collage of Mechanical Engineering offers programs leading to the following academic qualifications, with possible opportunity of alleviation to higher levels.

- Diploma in Mechanical Engineering: A 3-year program, with an entry from SPM or any recognized certificate, tailored to meet the industry requirements for assistant engineers and engineering technicians, with the opportunity to continue to a bachelor's degree in engineering, B. Eng. (Hons.) program upon successful completion. In their fourth and fifth semesters, students are given optional modules to specialize in their area of interest. Among the choices are pure mechanical and marine engineering modules.
- Bachelor of Technology Program Mechanical Engineering with Honors is a 4-year program which offered at MARA University of Technology, Terengganu Branch, Bukit Besi Campus. This program prepares the students to become an engineering technologist which suits the current demand in the mechanical engineering industry. Students of this program are trained to be competent and master basic skills and important knowledge in mechanical engineering technology. Graduates of this program can demonstrate good interpersonal development with a professional, ethical attitude, skilled in management and competitive globally either multinational or international in engineering organizations.

COLLEGE'S STRENGTH

The college prides itself on these factors:

- Academic staff with various disciplines in Mechanical Engineering at Master and PhD Levels.
- Good number of staff having professional engineer qualification.
- Excellent laboratory facilities and equipment.
- A balanced structured curriculum for the program offered and recognized by professional bodies and accreditation boards locally and abroad.

PROGRAM PROFILE

The Bachelor of Mechanical Engineering Technology (CEEM246) program offers a unique learning experience by incorporating Work-Based Learning (WBL) into its curriculum. Unlike traditional industrial training, WBL is an extended and immersive experience that enables students to apply their classroom learning to real-world work environments.

The WBL component of the program is designed to provide students with an opportunity to gain practical experience and develop relevant skills in a workplace setting. The duration of the WBL is 24 weeks or one year, depending on the program's specific requirements. During the WBL period, students are assigned to companies or organizations where they work alongside experienced professionals in the field of mechanical engineering. This gives them a chance to observe and learn from professionals while also contributing to real-world projects and challenges. The WBL component of the program is a key differentiator and adds value to the overall learning experience. It allows students to gain practical experience and develop a deeper understanding of the skills required to succeed in their future careers.

In addition to the WBL component, the program covers a wide range of topics, including Engineering Mathematics, Mechanics, Materials, Strength of Materials, Thermo-Fluids, Electrical Systems, Manufacturing Design, Computer Applications, Management, and Communication Skills. The program also offers students the opportunity to select four elective courses to further their studies in advanced courses of their interest.

Assessment in the program is based on a balance of coursework assessment, which may include laboratory work, projects, and topical tests, and formal examinations held at the end of each semester. Some courses are continuously assessed throughout the semester.

BACHELOR PROGRAMS

CEEM246 BACHELOR OF MECHANICAL ENGINEERING TECHNOLOGY

To be admitted into the program, prospective students must fulfill the university's general requirements and meet one of seven categories, which includes UiTM Diploma graduates, Diploma Holders from Higher Education Institutions, holders of a Malaysian Vocational Diploma (DVM), Holders of Malaysian Skills Diploma (DKM) / Advanced Malaysian Skills Diploma (DLKM), Candidates with a completed foundation from UiTM, UM, or KPM, Candidates of STPM or equivalent and Candidates of APEL. Applications for the program are open for the March and July intakes every year, and students who meet the minimum requirements can apply through UPU (https://upu.mohe.gov.my/) or the UiTM internal application system (Portal Kemasukan Pelajar Universiti Teknologi MARA) by accessing the homepage at https://online.uitm.edu.my/index.cfm.

The program curriculum covers a range of topics, including Engineering Mathematics, Mechanics, Material, Strength of Material, Thermo-fluids, Electrical Systems, Design, Manufacturing, Computer Applications, Management, and Communication skills. The program has a strong emphasis on practical skills, with laboratory work, industrial visits, design projects, and final-year projects forming a crucial part of the learning experience.

Students in the fourth, fifth and sixth semesters can choose elective courses related to pure mechanical engineering and naval architecture, providing them with specialized knowledge and skills.

The program is designed to cultivate teamwork, project control, management techniques, personal interaction, and team skills, which are all practiced through group projects. As part of the learning process, students have access to regular career talks by professional engineers from the industries, which help them gain knowledge and experience in the related field.

One of the unique features of the program is the immersive Work-Based Learning (WBL) component. During WBL, students have the opportunity to work in a real-world working environment for either 24 weeks or one year.

During their WBL experience, students undertake a major individual project in the industry, which is a partial requirement for the Bachelor Program. This project involves planning, designing, fabricating, testing, data collecting and analyzing, and arriving at a conclusion before completing the project. The aim of this project is to foster creativity and to provide exposure to various industrial processes, thereby enhancing the student's practical skills.

To assess student progress, the courses in the program are assessed through a balance of coursework assessment, including laboratory work, projects, topical tests, and formal examinations held during the semester and final examination weeks at the end of each semester.

ADMISSION REQUIREMENTS

bachelor Of Mechanical Engineering Technology CEEM246 (4 years / 8 semesters)	UPU Code UE6521005
	College College of Mechanical Engineering
	Duration of Program 8 semesters
	Open to Science/Technical stream applicants Open to Malay descendants, natives of Sabah, natives of Sarawak, and indigenous peoples only.
	General Requirements: • Pass SPM or an equivalent examination with good results. • Pass History (Implemented from SPM 2013 onwards). • Excellent achievement in Malay Language/Malaysia at SPM level or equivalent. • Pass STPM with a Grade C (CGPA 2.00) in three (3) subjects, including General Studies, and a minimum cumulative grade point average (CGPA) of 2.00. • Pass KPM Matriculation/UM Foundation in Science/ASASIpintar UKM/UiTM Foundation with a minimum cumulative grade point average (CGPA) of 2.00. • Pass a Diploma from an institution recognized by the Malaysian Government. • Pass STAM with a minimum Jayyid level. • Malaysian University English Test (MUET) Band 1. • Possess a Diploma in Malaysian Skills (DKM)/Advanced Diploma in Malaysian Skills (DLKM) or a Diploma in Malaysian Vocational (DVM) recognized at an equivalent level by the Malaysian Government and approved by the University Senate (refer to letter: JPT.S(BPKP)2000/400/04/01 Jld.5 (53) – 20 Nov 2019).
	Additional program requirements – Graduate of UiTM Diploma Diploma in Mechanical Engineering AND Candidate does not have any physical disabilities that hinder practical work. Diploma in Science/related Engineering field AND Candidate does not have any physical disabilities that hinder practical work.
	Additional program requirements – Graduate of a Diploma from a higher education institution recognized by the Malaysian Government. Graduate of a Diploma from an institution of higher education in the field of engineering or engineering technology AND Passed SPM or an equivalent examination with five (5) credits including:

	• Mathematics/Additional Mathematics • Science/Physics • And passed English AND Candidate does not have any physical disabilities that hinder practical work.
	Additional program requirements – Graduate of Malaysia Vocational Diploma (DVM) Possess a Malaysia Vocational Diploma (DVM) in the relevant field of engineering or engineering technology with a minimum overall CGPA of 2.50 AND Pass SVM with an Academic CGPA equal to or greater than 2.50; Vocational CGPA equal to or greater than 2.67 And competent in all vocational modules AND Candidate does not have any physical disabilities that hinder practical work.
	Additional program requirements – Graduate of Malaysia Skills Diploma (DKM) / Advanced Malaysia Skills Diploma (DLKM) Possess a Malaysia Skills Diploma (DKM) / Advanced Malaysia Skills Diploma (DLKM) in a relevant field of Engineering Technology from a Public Training Institute (ILA) or an equivalent recognized qualification by the Malaysian Government and approved by the University Senate with a minimum Cumulative Grade Point Average (CGPA) of 2.50 / Grade B / 80% marks and above. AND Candidate does not have any physical disabilities that hinder practical work.
	Additional program requirements – Graduate of UiTM Foundation / UM Foundation in Science / ASASIpintar UKM / KPM Matriculation. Grade C (2.00) in the following subjects: • Mathematics and • Physics OR Grade C (2.00) in the following subjects: • Mathematics and • Chemistry/Biology and obtained at least a Grade C in the subject of Physics at SPM level OR Grade C (2.00) in the following subjects: • Mathematics and • Engineering Physics/Engineering Chemistry/Mechanical Engineering Studies/Basic Engineering

	AND Candidate does not have any physical disabilities that hinder practical work.
	Additional program requirements – Graduate of STPM or an equivalent qualification. Grade C (CGPA 2.00) in Mathematics T / Further Mathematics T and Grade C (CGPA 2.00) in one (1) of the following subjects: • Physics • Chemistry/Biology and obtained at least a Grade C in the subject of Physics at SPM level AND Passed SPM or an equivalent examination with a pass in English AND Candidate does not have any physical disabilities that hinder practical work.
	Additional program requirements – APEL (ACCREDITATION OF PRIOR EXPERIENTIAL LEARNING). Possess an MQA APEL (Accreditation of Prior Experiential Learning) certification with a Level 6 MQF (Malaysian Qualifications Framework). AND Candidate does not have any disabilities that hinder practical work.

CURRICULUM STRUCTURE

SEM	NO	COURSE	CODE	COURSE TYPE	CREDIT UNIT	LEC	TUT	LAB / PRAC	CONTACT HOUR
SEM 1	1	INTRODUCTION TO ENGINEERING TECHNOLOGY AND PROFESSIONALISM	MET400	CORE	3	2	0	2	4
	2	STATICS	MET412	CORE	3	3	1	0	4
	3	MATERIALS SCIENCE	MET481	CORE	3	3	1	0	4
	4	WORKSHOP PRACTICE	MET460	CORE	2	1	0	3	4
	5	ENGINEERING DRAWING	MET431	CORE	3	0	0	4	4
	6	CALCULUS 1	MAT421	NON	3	3	1	0	4
	7	CO-CURRICULUM I (HEP List of Elective)	XYZ111	NON	1	0	0	2	2
	TOTAL				18	12	3	11	26
SEM 2	1	STRENGTH OF MATERIALS	MET411	CORE	3	3	1	0	4
	2	DYNAMICS	MET420	CORE	3	3	1	0	4
	3	MANUFACTURING PROCESSES AND TECHNOLOGY	MET560	CORE	3	3	1	0	4
	4	MECHANICS AND MATERIALS LAB	MET424	CORE	1	0	0	2	2
	5	CALCULUS FOR ENGINEER	MAT435	NON	3	3	1	0	4
	6	COMPUTER PROGRAMMING AND APPLICATION	CSC430	NON	3	3	1	0	4
	7	CO-CURRICULUM II (HEP List of Elective)	XYZ121	NON	1	0	0	2	2
	TOTAL				17	15	5	4	24
SEM 3	1	THERMODYNAMICS	MET451	CORE	3	3	1	0	4
	2	FLUID MECHANICS	MET441	CORE	3	3	1	0	4
	3	COMPUTER AIDED DESIGN (CAD)	MET435	CORE	3	2	0	2	4
	4	MACHINE ELEMENT DESIGN	MET521	CORE	3	3	1	0	4
	5	FURTHER CALCULUS FOR ENGINEER	MAT455	NON	3	3	1	0	4
	6	TECHNOLOGY ENTREPRENEURSHIP	ENT600	NON	3	3	0	0	3
	7	CO-CURRICULUM III (HEP List of Elective)	XYZ131	NON	1	0	0	2	2
	TOTAL				19	17	4	4	25

SEM	NO	COURSE	CODE	COURSE TYPE	CREDIT UNIT	LEC	TUT	LAB / PRAC	CONTACT HOUR
SEM 4	1	ELECTIVE 1	METXXX	CORE	3	2	0	2	4
	2	CONTROL TECHNOLOGY	MET522	CORE	3	2	0	2	4
	3	THERMOFLUIDS LAB	MET454	CORE	1	0	0	2	2
	4	SENSOR & ACTUATOR	MET524	CORE	3	2	0	2	4
	5	ELECTRICAL POWER AND MACHINE	EPE491	CORE	3	3	1	0	4
	6	FALSAFAH DAN ISU SEMASA	CTU552	NON	2	2	0	0	2
	7	ENGLISH FOR CRITICAL ACADEMIC READING	ELC501	NON	2	2	0	0	2
	8	THIRD LANGUAGE 1 (APB List of Elective)	BXY401	NON	2	2	0	0	2
	TOTAL				19	15	1	8	24
SEM 5	1	ELECTIVE 2	METXXX	CORE	3	2	0	2	4
	2	APPLIED VIBRATION	MET521	CORE	3	2	0	2	4
	3	FINITE ELEMENT ANALYSIS FOR TECHNOLOGIST	MET635	CORE	3	2	0	2	4
	4	APPLIED COMPUTATIONAL FLUID DYNAMICS	MET641	CORE	3	2	0	2	4
	5	PENGHAYATAN ETIKA DAN PERADABAN II	CTU554	NON	2	2	0	0	2
	6	ENGLISH FOR REPORT WRITING	EWC661	NON	2	0	0	2	2
	7	THIRD LANGUAGE 2 (APB List of Elective)	BXY451	NON	2	2	0	0	2
	TOTAL				18	12	0	10	22
SEM 6	1	ELECTIVE 3	METXXX	CORE	3	2	0	2	4
	2	ELECTIVE 4	METXXX	CORE	3	2	0	2	4
	3	FLUID POWER TECHNOLOGY	MET685	CORE	3	2	0	2	4
	4	INTERNET OF THINGS (IoT)	MET526	CORE	3	2	0	2	4
	5	RAPID MANUFACTURING	MET523	CORE	3	2	0	2	4
	6	ENGLISH EXIT TEST	EET699	NON	0	0	0	0	0
	7	THIRD LANGUAGE 3 (APB List of Elective)	BXY501	NON	2	2	0	0	2
	TOTAL				17	12	0	10	22
SEM 7	1	FINAL YEAR PROJECT I (WBL)	MET601	CORE	4	1	0	9	10
	2	RELIABILITY MAINTENANCE	MET665	CORE	6	2	0	13	15

		(WBL)							
	3	OCCUPATIONAL SAFETY AND HEALTH (WBL)	MET603	CORE	6	2	0	13	15
	TOTAL				16	5	0	35	40
SEM 8	1	FINAL YEAR PROJECT II (WBL)	MET602	CORE	8	1	0	19	20
	2	OPERATION MANAGEMENT (WBL)	MET677	CORE	8	2	0	18	20
	TOTAL				16	3	0	37	40
GRAND TOTAL					140	91	13	119	223

Electives Offered

ELE	SEM	COURSE	CODE	COURSE TYPE	CREDIT UNIT	LEC	TUT	LAB / PRAC	CONTACT HOUR
1	SEM 4	ERGONOMICS DESIGN	MET562	Core	3	2	0	2	4
		SHIP HYDROMECHANICS	MST574	Core	3	2	0	2	4
2	SEM 5	MECHANICAL ENGINEERING DESIGN 1	MET531	Core	3	2	0	2	4
		SHIP DESIGN 1	MST531	Core	3	2	0	2	4
3	SEM 6	MECHANICAL ENGINEERING DESIGN 2	MET532	Core	3	2	0	2	4
		SHIP DESIGN 2	MST532	Core	3	2	0	2	4
4		PRODUCT FABRICATION	MET564	Core	3	1	0	4	5
		SHIP PRODUCTION	MST562	Core	3	1	0	4	5
GRAND TOTAL					12	7	0	10	17

COURSE DESCRIPTION

SEMESTER 1

MET400 – INTRODUCTION TO ENGINEERING TECHNOLOGY AND PROFESSIONALISM

The course covers the engineering technology profession in general and mechanical engineering technology in particular. Students will be introduced to the various disciplines in mechanical engineering technology, basic problem-solving methods, laboratory report writing and the use of computers in engineering technology solutions, engineering estimations and approximations, dimensions, units and unit conversions, and representation of technical information. Group work introduces students to working in a team to collectively undertake and complete the assigned tasks. The computational tools useful for solving engineering problems are covered in the practical sessions and group work.

XYZ111 – CO-CURICULUM

Rujuk senarai kurikulum.

MET412 – STATICS

This course covers basic principles in statics. The course begins with basic concepts of mechanics, i.e. space, time, mass, and force, the concept of vectors and laws governing addition and resolution of vectors and followed by the equilibrium of particles and rigid bodies. It then proceeds to simple practical applications involving the analysis of forces in structures, machines and problems involving friction. The course also covers the first and second moments of area and mass

MET481 – MATERIALS SCIENCE

The course covers some fundamentals of materials science, which are necessary for understanding the material properties for their appropriate applications. The prominent families of materials such as metals, ceramics, polymers, and composites are discussed for their structures, properties, and applications.

MET460 – WORKSHOP PRACTICE

The course covers lectures on basic understanding and 'hands on' experiences on workshop related activities. The lectures are on the overall pictures of workshop practice, machines, materials and safety aspects. The 'hands on' experience covers the various basic workshop crafts, forming and metal cutting processes and fabrication methods such as hand tools, sheet metal working, lathe work, milling work, foundry and welding activities.

MET431 – ENGINEERING DRAWING

This course introduces the basic concepts of mechanical engineering drawing and familiarizes students with the use of CAD software to produce engineering drawings. Topics covered include principles of orthographic projection, isometric drawings, sectioning drawings, development of part and product drawings, drawing standards and practices, fit and tolerances, working drawings, and fabrication drawings. Students will be trained to do the engineering drawings using CAD software.

MAT421 – CALCULUS 1

This is the first course in calculus series. It starts with topics on functions and graphs, limits and continuity, techniques of differentiation and integration and its applications.

SEMESTER 2

MET411 – STRENGTH OF MATERIALS

The course covers stresses and strains of deformable bodies in tension, compression, bending, and torsion. Topics covered include axial stresses and strains; thermal stress; simple statically determinate and indeterminate systems; torsional stresses; power transmission in shafts; bending stresses in beams; transformation of plane stresses; and elastic buckling in columns.

XYZ121 - CO-CURICULUM II

Rujuk senarai kurikulum

MET420 – DYNAMICS

The course covers both kinematics and kinetics of particles and rigid bodies in planar and spatial motion. The course emphasizes the use of both scalar and vector approaches for solving particles and rigid bodies dynamics in 2D and 3D, respectively.

MET560 – MANUFACTURING PROCESSES AND TECHNOLOGY

The course covers the various aspects of processes employed in the production of metallic,polymeric and ceramic components. Students will be exposed to various manufacturing processes.

MET424 – MECHANICS AND MATERIALS LAB

The course consists of practical works involving the investigations and analysis in the area of strength of material, dynamic and material science.

MAT435 – CALCULUS FOR ENGINEER

This course consists of four chapters: methods of integration, indeterminate form and improper integrals, functions of two and three variables and differential equations. In the first chapter, methods of integration discussed are integration by parts, trigonometric integrals, trigonometric substitution and integration of rational functions. Second chapter consist of limit determination, L'Hopital Rule and improper integral. Then students will be introduced to the topic of function of two and three variables. In the last chapter first and second order differential equations will be discussed. Applications in engineering and sciences will be covered in chapter three and four.

CSC430 – COMPUTER PROGRAMMING AND APPLICATION

This course is designed for students to study engineering programming. Fundamental concepts and principles of the chosen computer programming language are covered in this course. Considerable emphasis is placed on the understanding and application of computer programming.

SEMESTER 3

MET451 – THERMODYNAMICS

The course is designed for engineering technologist graduates to be able to comprehend and apply the concept of thermodynamics in Mechanical Engineering practice. Considerable emphasis is addressed on the Thermodynamics concept applied to power plant energy and commercial sectors, specifically evaluating thermal energy efficiency and awareness of energy recovery and sustainability issues.

MET441 – FLUID MECHANICS

This course covers the introduction of fundamental fluid mechanics theory including properties of fluid properties, hydrostatics, and control volume analysis. Applied topics covering internal and external flow measurements are also taught in synchronous with practical assignment and industrial site visit. Moreover, an introductory of computational fluid dynamics is to be covered as well.

MET435 – COMPUTER AIDED DESIGN (CAD)

This course introduces the various computer-based application such as Computer Aided Design (CAD), Computer Aided Engineering (CAE) and Computer Aided Manufacturing (CAM) and its peripherals leading to design process and the role of CAD. The topics cover in this course includes the constructive geometric modelling, solid model operations, engineering drawing, mechanical part and assembly design, and drafting practices conforming to current industry standards. This course also give opportunity to the students to expand and further develop their skills and enable the student to measure their knowledge and competency in using CAD software as a stepping stone towards higher certifications.

MET521 – MACHINE ELEMENT DESIGN

This course introduces the essential machine elements encountered in machine design. It covers mechanical joints such as power screws, fasteners, rivets and power transmission units such as bearings, shafts and their associated parts, belts and gears. It gives elementary exposure to design analysis of some of these machine elements.

MAT455 – FURTHER CALCULUS FOR ENGINEER

The three main topics covered in this course are infinite series, multiple integrals, and vector calculus. The first topic begins with the basic concepts of convergence of an infinite sequence and series, followed by the use of various tests to determine the convergence of infinite series. The second chapter introduces the evaluation of multiple integrals using various coordinate systems. The last chapter introduces the integration over paths and surfaces. Applications of three important theorems (Green's theorem, Stokes' theorem, and divergence theorem) are also included.

ENT600 – TECHNOLOGY ENTREPRENEURSHIP

Behind every successful technology company is a visionary, effective and efficient technopreneur. In this course, students will be exposed to entrepreneurship and apply their entrepreneurial skills in developing an advanced technology that could be a basis for the creation and development of a technology-based venture. This subject is designed to inculcate the entrepreneurial skills among science and technology cluster students and promote the development of technology-based entrepreneurship knowledge. The course delivery combines both theoretical and practical aspects of technology entrepreneurship. Theoretical aspect is looking at the important elements in understanding technology entrepreneurship, while practical aspect is engaging the students to develop their technology based idea business blueprint. The course has two key components of face-to-face lectures and practical project based assignments monitored with the course lecturer.

XYZ131 - CO-CURICULUM III

Rujuk senarai kurikulum

SEMESTER 4

METXXX – ELECTIVE I

Rujuk senarai kurikulum

MET522 – CONTROL TECHNOLOGY

The course covers introduction to mathematical modeling and control engineering, models of industrial control devices and systems, basic concepts and principles of feedback controls, system stability and its criteria, performance specifications, frequency response analysis, control system design via state-space formulation, and control design applications.

MET454 – THERMOFLUIDS LAB

The course consists of two parts, i.e., laboratory experimental work in thermodynamics and fluid mechanics. It provides the students with the opportunity to operate various experimental equipment under supervision. Students shall complete a minimum of three (3) thermodynamics laboratory experiments and three (3) fluid mechanics laboratory experiments and relate them to theoretical understandings of thermodynamics and fluid mechanics' course. Moreover, students will cooperate with teammates and staffs in completing tasks in line with professional manner.

MET524 – SENSOR & ACTUATOR

The course emphasizes basic concepts and principles of sensors and actuators. It covers basic principles and the usage of sensors and actuators in various industrial and engineering applications.

EPE491 – ELECTRICAL POWER AND MACHINE

The course covers introduction to electrical supply system, single and three-phase supply, elements of industrial power system, operation and industrial applications of electrical machines, power transformers, single phase motors, solid-state drives and aspects of electrical safety.

CTU552 – FALSAFAH DAN ISU SEMASA

The course encompasses the relationship between philosophical knowledge and the National Philosophy of Education and Rukunegara (National Principles). It emphasizes the use of philosophy as a tool to refine cultural thinking in life through art, methods of thinking, and the concept of humanity. The main topics in philosophy, namely epistemology, metaphysics, and ethics, are discussed in the context of current issues. Emphasis is placed on philosophy as the foundation for fostering dialogue between cultures and cultivating shared values. By the end of the course, students will be able to perceive disciplines of knowledge as a comprehensive and interconnected body of knowledge.

ELC501 – ENGLISH FOR CRITICAL ACADEMIC READING

This course is designed to develop students' ability to read analytically and think critically. It focuses on the relationship between reading and critical thinking and provides students with a structured method for interpreting content and organization of written texts. Tasks and activities suggested are discipline-based.

BXY401 - THIRD LANGUAGE 1 (APB List of Elective)

Rujuk senarai kurikulum

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AWARDS AND GRADING SCHEME

AWARD OF BACHELOR DEGREE

Student will be awarded a Bachelor Of Mechanical Engineering Technology, CEEM246 when they fulfill all the following criteria:

- obtained a minimum Cumulative Grade Point Average (CGPA) of 2.00.
- passed all courses as required by the program of study.
- fulfilled all the conditions and requirements set by the University.
- approved by the University Senate.

CLASSIFICATION

The Diploma classification is determined as follows:

Degree Classification	CGPA
First Class	3.50 - 4.00
Second Class Upper	3.00 - 3.49
Second Class Lower	2.20 - 2.99
Third Class	2.00 - 2.19

GRADING SCHEME

After the final score has been finalized (inclusive of all assessments and final exam scores), the grade will be categorized according to the following marking scheme:

Range of Score	Grade	Grade Points	Result
90 - 100	A+	4.00	Pass
80 - 89	A	4.00	Pass
75 - 79	A -	3.67	Pass
70 -74	B +	3.33	Pass
65 - 69	B	3.00	Pass
60 - 64	B -	2.67	Pass
55 - 59	C +	2.33	Pass
50 - 54	C	2.00	Pass
47 - 49	C -	1.67	Fail
44 - 46	D +	1.33	Fail
40 - 43	D	1.00	Fail
30 - 39	E	0.67	Fail
0 - 29	F	0.00	Fail

FINAL YEAR PROJECT

The Final Year Project (FYP) is a mandatory component for the completion of the Bachelor of Mechanical Engineering for Technologist degree. The FYP will be conducted during the WBL period in semesters 7 and 8. The topic of the FYP will be selected from various areas related to mechanical engineering, including engineering management, mechanics, robotics, manufacturing, thermofluids, and other research areas.

The FYP will be supervised by a project supervisor and coordinated by a Final Year Project Coordinator. The lecturer who proposes the project topics will be assigned as the project advisor.

The project will span two semesters, namely semester 7 and semester 8. During these semesters, students will be expected to integrate and apply the knowledge and skills they have acquired throughout their studies. They will work under the guidance of a project supervisor, who will provide support and monitor the progress of their work. All activities, including planning, implementation, and scheduling, must be recorded in a logbook. The assessment of the project will take place at the end of semester 7 and semester 8.

The FYP serves as an opportunity for students to demonstrate their understanding and application of mechanical engineering principles in a practical context. It allows them to showcase their problem-solving skills, research abilities, and project management capabilities. Successful completion of the FYP is essential for the fulfillment of the requirements for the Bachelor of Mechanical Engineering for Technologist degree.

WORK-BASED LEARNING

Work-Based Learning (WBL) or internship refers to work experiences that are relevant for professional development prior to graduation. One of the requirements for the award of the Diploma is that students must complete a designated period of WBL.

Students should note that WBL is an essential component in the development of practical and professional skills required to support forthcoming graduate employment. Many employers regard this period as an opportunity to assess and select potential future employees.

All students should put considerable effort and thought into obtaining the most relevant and effective WBL placement. It is desirable to experience a wide range of work activities related to the field of study. Developing an awareness of general workplace ethics and interpersonal skills are important objectives of the WBL experience.

Normally, students will undergo WBL during a specific semester and secure placements in appropriate companies of their choice. The College's Coordinator of Work-Based Learning (C-WBL) will provide a briefing prior to the application process, with the assistance of appointed lecturers, to provide a deeper understanding of the WBL process and procedures. During this briefing, students will receive general guidelines on how to apply, what to do before, during, and after WBL, and the rules and regulations pertaining to the WBL program.

The objectives of the program are:

- To expose students to the actual working culture and industrial practices.
- To allow students to apply their theoretical knowledge into practice.
- To foster the development of proper work attitudes and professionalism to enhance employability potential.
- To facilitate students' interaction with potential employers.

During the WBL period, students are required to abide by the rules and regulations set by both the College and the Company. They must maintain a daily logbook to record their activities. At the end of the WBL, each student is required to submit a comprehensive report containing detailed job descriptions. Assigned academic staff will evaluate the students and assess the company's suitability for the WBL program. The C-WBL will monitor all students during their WBL. Any matters related to WBL should be referred to the C-WBL before making any decisions.

Assessment for WBL will be based on the daily logbook, WBL report, feedback from the WBL supervisor, and evaluations from appointed academic staff.

STUDENT PORTFOLIO

As a UiTM student, students must keep a portfolio that descript you experience, achievements, result and anything related to you during your time studying in the University. This portfolio can then be an extension to your personal portfolio in your future achievements. University has prepared an electronic system that you use and can be access via istudent portal under myE-Portfolio. The direct link to myE-Porfolio is http://myeportfolio.uitm.edu.my/.

OUTCOME BASED EDUCATION

Outcome Based Education (OBE) is the paradigm shift resulting from the re-evaluation of Traditional Education (TE). TE narrowly focused on the content and produced students with varying degrees of achievement levels (stratification of achievers). Thus, this model did not produce learners, which could perform effectively in the workplace. OBE has changed the focus of learning institutions from the content to the learner. According to William Spady, (1998,1999) a major proponent of OBE, three goals drive this approach to creating academic curricula. 1) All students can learn and succeed but may not be on the same day or in the same way. 2) Each success achieved by a student breed more success. 3) Academic institutions control the conditions of success.

CURRICULUM DESIGN FOR OBE

OBE is a methodology of curriculum design and teaching that focuses on students' capability of applying what has been taught to them. OBE focuses on these key questions which are:

a. What should the students learn?
b. What is the motivation for the students to learn it?
c. How can the academic institution and its resources help students learn it?
d. How will it be determined what the students have learned (assessment)?

Thus, the OBE's instructional planning process is a reverse of that associated with traditional educational planning. The desired outcome is determined first, and the curriculum, instructional materials and assessments are designed around to support and facilitate the intended outcome (Spady 1988; 1993). All curriculum and teaching decisions are made based on how best to facilitate the desired outcome.

SAMPLE OF BLOOM'S TAXONOMY

Cognitive Skills (C)

KNOWLEDGE

Arrange, define, duplicate, identify, label, list, match, memorize, name, order, outline, recognize, recall, relate, repeat, reproduce, select, state

COMPREHENSION

Classify, convert, defend, describe, distinguish, estimate, explain, express, extend, generalize, give example, identify, indicate, infer, locate, paraphrase, predict, recognize, report, review, rewrite, select, summarize, translate

APPLICATION

Apply, change, choose, compute, demonstrate, discover, dramatize, employ, illustrate, interpret, manipulate, modify, operate, practice, predict, prepare, produce, relate, schedule, show, sketch, solve, use, write

ANALYSIS

Analyze, appraise, break down, calculate, categorize, compare, contrast, criticize, diagram, differentiate, discriminate, distinguish, examine, experiment, identify, illustrate, infer, model, outline, point out, question, relate, select, separate, subdivide, and test.

SYNTHESIS

Arrange, assemble, categorize, collect, combine, comply, compile, compose, construct, create, devise, design, develop, explain, formulate, generate, integrate, manage, modify, organize, plan, propose, repair, rearrange, reconstruct, relate, reorganize, revise, rewrite, set-up, summarize, synthesize, tell, write

EVALUATION

Appraise, argue, assess, attach, choose, compare, conclude, contrast, criticize, defend, discriminate, evaluate, judge, justify, interpret, predict, rate, relate, select, summarize, support, value

Affective Skills (A)

RECEIVING (willingness to attend)

ask, choose, describe, follow, give, hold, identify, locate, name, point to, select, reply, use

RESPONDING (active participation)

answer, assist, compile, comply, conform, discuss, greet, help, label, perform, practice, present, read, recite, report, select, tell, write

VALUING (worth or value a student attach to a particular object)

complete, describe, differentiate, explain, follow, form, initiate, invite, join, justify, propose, read, report, select, share, study, work

ORGANIZATION (bringing together different values)

adhere, alter, arrange, combine, compare, complete, defend, explain, generalize, identify, integrate, modify, order, organize, prepare, relate, synthesize

CHARACTERIZATION BY A VALUE

act, discriminate, display, influence, listen, modify, perform, practice, propose, qualify, question, revise, serve, solve, use, verify

Psychomotor Skills (P)

PERCEPTION

Choose, describe, detect, differentiate, distinguish, identify, isolate, relate, select, separate

MECHANISM

Assemble, build, calibrate, construct, dismantle, display, dissect, fasten, fix, grind, heat, manipulate, measure, mend, mix, organize, sketch

COMPLEX OR OVERT RESPONSE

Assemble, build, calibrate, construct, dismantle, display, dissect, fasten, fix, grind, heat, manipulate, measure, mend, mix, organize, sketch

ADAPTATION

Adapt, alter, change, rearrange, reorganize, revise, vary

ORIGINATION

Arrange, combine, compose, construct, create, design, originate.

PROGRAM EDUCATIONAL OUTCOME (PEO) & PROGRAM OUTCOMES (PO)

PROGRAM EDUCATIONAL OBJECTIVES (PEO)

PEOs are specific attributes expected in graduate within 3 to 5 years after graduation during their career and professional life. These attributes are consistent with the mission and vision of Institute of Higher Learning (IHL).

DESCRIPTION	PEO
Mechanical Technologists adapt and transform the acquired knowledge in public and private sectors with respect to related professional fields.	PEO1
Mechanical Technologists are expert and competent in their professional fields.	PEO2
Mechanical Technologists are globally competitive and professionally employed in multinational / international organizations.	PEO3
Mechanical Technologists practice ethical and professional values in their respective fields.	PEO4

PROGRAM OUTCOMES (PO)

Program outcomes are statements that describe what students are expected to know and be able to perform or attain upon graduation. These relate to the skills, knowledge, and behavior that students acquire through the program. The Key Performance Indicator (KPI) for the PO attainment: 75% out of total students should achieve a minimum of 50% marks for each PO at the end of the program

DESCRIPTION	PO
Knowledge: apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to defined and applied engineering procedures, processes, systems, or methodologies; (SK1 to SK4)	PO1
Problem analysis: Identify, formulate, research literature, and analyze broadly-defined engineering problems reaching substantiated conclusions using analytical tools appropriate to their discipline or area of specialization; (SK1 to SK4)	PO2
Design/development of solutions: Design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components, or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations; (SK5)	PO3
Investigation: Conduct investigations of broadly-defined problems; locate, search, and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions; (SK8)	PO4
Modern Tool Usage: Select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems, with an understanding of the limitations; (SK6)	PO5
The Engineer and Society: Demonstrate understanding of the societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to engineering technology practice and solutions to broadly-defined engineering problems; (SK7)	PO6
Environment and Sustainability: Understand the impact of engineering technology solutions of broadly-defined engineering problems in societal and environmental context and demonstrate knowledge of and need for sustainable development; (SK7)	PO7
Ethics: Understand and commit to professional ethics and responsibilities and norms of engineering technology practice; (SK7)	PO8
Individual and Teamwork: Function effectively as an individual, and as a member or leader in diverse technical teams.	PO9
Communications: Communicate effectively 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, and give and receive clear instructions.	PO10
Project Management and Finance: Demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member and leader in a team and to manage projects in multidisciplinary environments.	PO11
Lifelong Learning: Recognize the need for and have the ability to engage in independent and life-long learning in specialist technologies.	PO12

MAPPING OF COURSES TO PROGRAM LEARNING OUTCOMES (PO)

SEM	COURSE CODE	COURSE NAME	Knowledge: apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to defined and applied engineering procedures, processes, systems, or methodologies; (SK1 to SK4)	Problem analysis: Identify, formulate, research literature, and analyze broadly-defined engineering problems reaching substantiated conclusions using analytical tools appropriate to their discipline or area of specialization; (SK1 to SK4)	Design/development of solutions: Design solutions for broadly-defined engineering technology problems and contribute to the design of systems, components, or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations; (SK5)	Investigation: Conduct investigations of broadly-defined problems; locate, search, and select relevant data from codes, data bases and literature, design and conduct experiments to provide valid conclusions; (SK8)	Modern Tool Usage: Select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to broadly-defined engineering problems, with an understanding of the limitations; (SK6)	The Engineer and Society: Demonstrate understanding of the societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to engineering technology practice and solutions to broadly-defined engineering problems; (SK7)	Environment and Sustainability: Understand the impact of engineering technology solutions of broadly-defined engineering problems in societal and environmental context and demonstrate knowledge of and need for sustainable development; (SK7)	Ethics: Understand and commit to professional ethics and responsibilities and norms of engineering technology practice; (SK7)	Individual and Teamwork: Function effectively as an individual, and as a member or leader in diverse technical teams.	Communications: Communicate effectively 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, and give and receive clear instructions.	Project Management and Finance: Demonstrate knowledge and understanding of engineering management principles and apply these to one' s own work, as a member and leader in a team and to manage projects in multidisciplinary environments.	Lifelong Learning: Recognize the need for and have the ability to engage in independent and life-long learning in specialist technologies.
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1	MET400	INTRODUCTION TO ENGINEERING TECHNOLOGY AND PROFESSIONALISM	√				√			√			√	
	MET412	STATICS	√	√		√								

	MET481	MATERIALS SCIENCE	√	√					√					
	MET460	WORKSHOP PRACTICE	√				√				√			
	MET431	ENGINEERING DRAWING	√		√		√							
	MAT438	CALCULUS 1												
	XYZ111	CO-CURRICULUM I (HEP List of Elective)												
2	MET411	STRENGTH OF MATERIALS	√	√				√						
	MET420	DYNAMICS	√	√								√		
	MET560	MANUFACTURING PROCESSES AND TECHNOLOGY	√	√		√								
	MET424	MECHANICS AND MATERIALS LAB		√			√				√			
	MAT518	CALCULUS FOR ENGINEER												
	CSC430	COMPUTER PROGRAMMING AND APPLICATION												
	XYZ121	CO-CURRICULUM II (HEP List of Elective)												
3	MET451	THERMODYNAMICS		√	√				√					
	MET441	FLUID MECHANICS	√	√				√						
	MET435	COMPUTER AIDED DESIGN (CAD)	√				√					√		
	MET521	MACHINE ELEMENT DESIGN		√		√						√		
	MAT	FURTHER CALCULUS FOR ENGINEER												
	ENT600	TECHNOLOGY ENTREPRENEURSHIP												
	XYZ131	CO-CURRICULUM III (HEP List of Elective)												
4	METXXX	ELECTIVE 1		√			√		√					
	MET522	CONTROL TECHNOLOGY		√			√					√		
	MET454	THERMOFLUIDS LAB					√			√	√			
	MET524	SENSOR & ACTUATOR		√		√							√	

	EPE491	ELECTRICAL POWER AND MACHINE												
	CTU552	FALSAFAH DAN ISU SEMASA												
	ELC501	ENGLISH FOR CRITICAL ACADEMIC READING												
5	METXXX	ELECTIVE 2				√		√				√		
	MET525	APPLIED VIBRATION		√		√								√
	MET635	FINITE ELEMENT ANALYSIS FOR TECHNOLOGIST		√		√	√							
	MET641	APPLIED COMPUTATIONAL FLUID DYNAMICS		√			√							√
	CTU554	PENGHAYATAN ETIKA DAN PERADABAN II												
	EWC661	ENGLISH FOR REPORT WRITING												
	BXY451	THIRD LANGUAGE 2 (APB List of Elective)												
6	METXXX	ELECTIVE 3			√		√			√				
	METXXX	ELECTIVE 4					√				√		√	
	MET685	FLUID POWER TECHNOLOGY			√		√					√		
	MET526	INTERNET OF THINGS (IoT)			√		√				√			
	MET523	RAPID MANUFACTURING			√		√		√					
	EET699	ENGLISH EXIT TEST												
	BXY501	THIRD LANGUAGE 3 (APB List of Elective)												
7	MET601	FINAL YEAR PROJECT I (WBL)				√		√	√			√		
	MET665	RELIABILITY MAINTENANCE (WBL)		√		√		√						
	MET603	OCCUPATIONAL SAFETY AND HEALTH (WBL)				√				√				√
8	MET602	FINAL YEAR PROJECT II (WBL)			√		√			√			√	√
	MET677	OPERATION MANAGEMENT (WBL)				√	√							√

List of Elective (Mechanical)														
MEX5XX	MET562	ERGONOMICS DESIGN		√			√		√					
MEX5XX	MET531	MECHANICAL ENGINEERING DESIGN I				√		√				√		
MEX5XX	MET532	MECHANICAL ENGINEERING DESIGN II			√		√			√				
MEX5XX	MET562	PRODUCT FABRICATION					√				√		√	
List of Elective (Naval Architecture)														
MEX5XX	MST574	SHIP HYDROMECHANICS		√			√		√					
MEX5XX	MST531	SHIP DESIGN I				√		√				√		
MEX5XX	MST532	SHIP DESIGN II			√		√			√				√
MEX5XX	MST562	SHIP CONSTRUCTION					√				√		√	

RULES AND REGULATIONS

GENERAL RULES

- Students should always refer to the Academic and Student handbook regarding academic matters and while in the university. The latest Academic Handbook can be access from the link below: https://hea.uitm.edu.my/v1/index.php?option=com_content&view=article&id=84:academic-regulations&catid=58:academic-regulations

- Students should always be aware of the updated information and announcements posted on the notice boards in the college and also at istudent portal.

ATTIRE AND DISCIPLINE

- Proper and formal attire must be worn during lectures and other programs conducted by the college and university.

- Male students must wear necktie on every Monday during lectures.

- No round-neck T-shirt, sandals, or shoes being worn while attending lectures and other official activities.

- Remember the University's compound is a Non-Smoking Zone.

- Students should follow the rules and regulations to avoid any disciplinary action taken by the University/college.

EXAMINATION RULES

- Sitting for the final examination papers is compulsory to all students.
- Students must check the examination schedule regarding the date, time, and venue.
- Students must ensure that the examination statements (slip penyata peperiksaan) are correct as per registered courses.
- Students must bring together the examination statement and identification card when sitting for the examinations.
- Students must adhere to the University's rules and regulations for the final examination before entering the exam hall.

WORK BASED LEARNING (WBL)

- WBL is compulsory to all CEEM246 students as part of their requirement for graduation.
- Students go for industrial training for the whole semester during Semester 7 and 8.
- Students must be in good health and fit enough before they can perform WBL.

SAFETY ISSUES

- Students are advised to be aware of all safety rules and regulations of the University/college to avoid unnecessary accidents.
- The University/college is not responsible for any accident occurred due to violation of the rules and regulations.

STUDENT ACTIVITIES

- Students are strictly prohibited from indulging in activities that violates the University Act.
- Please refer to the respective Head of Program (*Ketua Program*) before involving in any activities outside the university programs.

PLAGIARISM

The College of Mechanical Engineering upholds its professionalism and academic integrity by all mean and is against all acts and forms of plagiarism by the students. Students must comply to proper citation and copyright at all time in their academic work. Students must aware that stealing someone else's work is wrong and is deemed as intellectual dishonesty which carries stern disciplinary penalties. These are some examples amounted to plagiarism but not limited to:

- Copying an article or a paper from the website or an online data base, or from books or journals without a proper citation.
- Conducting cut and paste to create a paper from several sources without proper acknowledgement.
- Quoting copied words whether in a full or part sentence. A student who quotes a sentence or two and then continues copying from the same source without citing it.
- Faking a citation. Giving a citation when one does not actually quote from it.

The following guideline provide the basic requirements for the acknowledgement of sources in your academic work.

1. BIBLIOGRAPHIES AND FOOTNOTES

   All sources - printed materials such as books and journals, or electronic materials such as websites, CD-ROM, and electronic mails, and other sources which have been consulted in the preparation of your academic work should be listed in a bibliography shall not be considered as adequate for the specific use of that source within the report. Therefore, the extent of indebtedness to the source must be made clear.

2. QUOTATIONS

   Any sentence or phrase, however small, which is not your original work must be properly acknowledged. It must be placed in quotation marks or clearly indented beyond the regular margin.

3. PARAPHRASING

   Any material which is paraphrased or summarized must also be specifically acknowledged in a footnote or in the text.

4. FACTS, FORMULAS, AND IDEAS

Any facts, formulas, ideas, and other kinds of information which are borrowed should be specifically acknowledged in a footnote or in the text. However, those which are widely known and are considered to be in the "public domain" of common knowledge do not always require citation. Students when in doubt should consult any of the college member.

5. HOMEWORK, LABORATORY WORK, PROBLEM SETS AND COMPUTER PROGRAMS

The organization and presentation of laboratory and computational courses may vary from one course to another. Often students work in a group and as such, a proper acknowledgement of the extent of the collaborated work must appear when submitting the reports.

In cases where there are two or more signatories to a submitted report, each student's signature is sufficient to signify that the student has contributed fairly in the submitted work'.

6. MULTIPLE SUBMISSIONS

Occasionally the student may be permitted to rewrite an earlier work or to satisfy two academic requirements by producing a single piece of work more extensive than that which would satisfy either requirement on its own. In such cases, the student must obtain a prior written permission of each instructor. In cases where the previously submitted work, or a portion of it, is submitted in its original or revised form to another instructor, the student must also submit the original work with the revised version. If a single extended work is written for more than one course, a student must clearly indicate that at the beginning of the report.

7. ORAL REPORTS

In such cases where written notes for oral reports is to be submitted, students must clearly acknowledge any work that is not of their own in accordance with the requirements stated earlier.

8. STANDARD FORMS OF REFERENCE

Students should refer to sample sheets provided by the college for standard format for acknowledgement of sources of references. In general, a precise indication of the source of reference must include the author, title, place and date of publication, and page number.

Definitions of Academic Violations under the Jurisdiction of the College of Mechanical Engineering on Discipline.

Regarding to written assignments such as essays, laboratory reports or any other written work submitted officially to fulfill the academic requirements, the following acts are considered as academic infractions:

UNAUTHORIZED MULTIPLE SUBMISSION

Failure to obtain a prior written permission from relevant instructors for the submission of any work that has been submitted before in identical or similar for min fulfillment of any academic requirement at any institution.

FALSE CITATION

Citation of a source from which the material is in question is not truly obtained.

FALSE DATA

Use and submission of false data or information.