

## General Information

1. Awarding Institution		Universiti Teknologi Malaysia		
2. Teaching Institution		Universiti Teknologi Malaysia		
3. Programme Name		Master of Science (Mechanical Engineering)		
4. Final Award		Master of Science (Mechanical Engineering)		
5. Programme Code		MEMM		
6. Professional or Statutory Body of Accreditation		Malaysian Qualification Agency, MQA		
7. Language(s) of Instruction		English		
8. Mode of Study		Conventional		
9. Mode of operation		Self-governing		
10. Study Scheme (Full Time/Part Time)		Full Time / Part Time		
11. Study Duration		Minimum : 1 year Maximum : 4 years		
Type of Semester	No. of Semesters		No of Weeks/Semester	
	Full Time	Part Time	Full Time	Part Time
Normal	8	8	14	14
Short	4	4	8	8

## Course Classification

Course Category	Code	Course	Credit	Percentage
University General Courses	U### ###3	University Elective	3	7.5%
Programme Core	MEMM1013	Emerging Technologies and Management	3	22.5%
	MEMM1023	Product Innovation and Development	3	
	MEMM1903	Research Methodology	3	
Project	MEMM1914	Master Project I	4	25%
	MEMM2926	Master Project II	6	

<b>Materials Engineering</b>	<i>Choose 5 courses from this track</i>		
	MEMB1613	Advanced Materials Processing	3
	MEMB1623	Smart Materials	3
	MEMB1633	Assets Integrity and Management	3
	MEMB1643	Structural composites	3
	MEMB2613	Advanced Materials Characterization	3
	MEMB2623	Advanced Surface Modification for Metallic Materials	3
	MEMB2633	Electron Microscopy for Nanomaterials	3
	MEMB2643	Mechanical Behavior of Materials	3
	MEMB2653	Corrosion and Materials Degradation	3

## MSc. With IMM Certification Programme Structure (1 year 6 months)

Dr. Habibah G

Semester 1	Semester Break	Semester 2	Semester 3	Industrial Attachment
MEMB 2653 - Corrosion and Materials Degradation		MEMB 2623 - Advanced Surface Modification of Metallic Materials  MEMB 1633 - Assets Integrity and Management (AIM)  Master Project I - Industrial based project (1 month)	Master Project II - Industrial based project (3 months - Full time)	**The industrial attachment will be with selected company for duration of 6 months

\*\* For candidate who has industrial experiences in coating related field can be waived this industrial attachment subject to approval by IMM

<b>Free Elective</b>	M### ##3	<i>Choose any 1 course cross discipline / area / track / school</i>	3	7.5%
<b>Total Credit Value</b>			<b>40</b>	<b>100%</b>

The following pages shows option of ONE (1) Free electives



## Programme Track Electives

<i>Choose 5 courses from any tracks (1 to 12)</i>			
<b>General Mechanical</b>	MEMM1133	Elasticity and Plasticity	3
	MEMM1143	Plates, Shell, and Pressure Vessels	3
	MEMM1223	Adaptive control and Intelligent System	3
	MEMM1233	Robotic System and Control	3
	MEMM2213	Advanced Control System	3
	MEMM1253	Acoustics	3
	MEMM1273	Vibration Measurement and Control	3
	MEMM1283	Structural Dynamics	3
	MEMM1313	Viscous Fluid Flow	3
	MEMM1323	Compressible Flows	3
	MEMM1423	Thermo Fluid Measurement and Diagnostic	3
	MEMM1453	Indoor Environmental Quality	3
	MEMM2413	Advanced Engineering Thermodynamics	3
	MEMM2423	Advanced Combustion	3
	MEMM1533	Virtual Reality for Engineers	3
MEMM1553	Creative Design Engineering	3	
<i>Choose 5 courses from this track</i>			
<b>Structural Health and monitoring</b>	MEMM1213	Automatic Control & Instrumentation	3
	MEMM1263	Condition Monitoring	3
	MEMM1463	Conduction And Convection Heat Transfer	3
	MEMM1123	Computational Method in Solid Mechanics	3
	MEMM1343	Friction, Wear & Lubrication	3
	MEMB1633	Assets Integrity & Management	3
	MEMM1113	Fatigue & Fracture Mechanics	3

<b>Future generation vehicle</b>	<i>Choose 5 courses from this track</i>		
	MEMV2213	Automotive Noise, Vibration and Harshness	3
	MEMV1313	Advanced Vehicle Dynamics	3
	MEMV1613	Future Mobility Solution	3
	MEMV1203	Automotive Electronics & Control	3
	MEMV1623	Vehicle Connectivity	3
	MEMV1013	Advanced Automotive Technology	3
<b>Energy efficient vehicle</b>	<i>Choose 5 courses from this track</i>		
	MEMV2213	Automotive Noise, Vibration and Harshness	3
	MEMV1403	Internal Combustion Engine & Boosting System	3
	MEMV1503	Advanced Vehicle Powertrain	3
	MEMV2413	Low Carbon Fuel	3
	MEMV2513	Automotive Tribology	3
	MEMV1013	Advanced Automotive Technology	3
<b>Industrial Aerodynamics</b>	<i>Choose 5 courses from this track</i>		
	MEMF1313	Advanced Aerodynamics	3
	MEMF2323	Computational Aerodynamics	3
	MEMF2343	Industrial Aerodynamic and Wind Engineering	3
	MEMF2353	Experimental Aerodynamics	3
	MEMF2213	Advanced Aircraft Dynamics and Control	3
<b>Advanced Aerospace Engineering</b>	<i>Choose 5 courses from this track</i>		
	MEMF1313	Advanced Aerodynamics	3
	MEMF2213	Advanced Aircraft Dynamics and Control	3
	MEMF2013	Computational Method for Aerostructures	3
	MEMF2113	Advanced Aircraft Structures and Materials	3
	MEMF2423	Jet Propulsion	3
	MEMF2433	Rocket Technology	3
	MEMF2443	Gas Turbine Technology	3
MEMF2513	Helicopter System and Performance	3	

<b>Sustainable Engineering</b>	<i>Choose 5 courses from this track</i>		
	MEMM1213	Automatic Control & Instrumentation	3
	MEMM1413	Energy Management	3
	MEMM1433	Sustainable Energy System and Technology	3
	MEMM2113	Advanced Mechanics of Composite Structure	3
	MEMM1543	Engineering Design and Reliability	3
	MEMP1723	Green Manufacturing Technology	3
<b>Computational Mechanics</b>	<i>Choose 5 courses from this track</i>		
	MEMM1913	Advance Engineering Mathematics	3
	MEMM1123	Computational Method in Solid Mechanics	3
	MEMM1333	Computational Fluid Dynamics	3
	MEMM1513	CAD and It's Applications	3
	MEMM2223	Advanced Industrial Automation	3
	MEMM1523	Optimization in Engineering Design	3
<b>Manufacturing Engineering</b>	<i>Choose 5 courses from this track</i>		
	MEMP1733	Digital Manufacturing	3
	MEMP2733	IT for Manufacturing	3
	MEMP1713	Statistical Quality Engineering	3
	MEMP2703	Automation Systems and Robotics	3
	MEMP1723	Green Manufacturing Technology	3
	MEMP2763	Advanced Manufacturing Processes	3
	MEMP2773	Machining and Machine Tools Technology	3
	MEMP2713	Welding technologies and Applications	3
	MEMP2723	Smart Manufacturing	3
	MEMP1753	Manufacturing Science	3

<b>Ship technology</b>	MEMO1213	Dynamic of Marine Structures (compulsory)	3
	MEMO2813	Safety, Risk and Reliability in Marine Operation (compulsory)	3
	MEMO2113	Strength and Vibration of Marine Structures (compulsory)	3
	MEMO2003	Marine Environment and Renewable Energy	3
	MEMO1713	Ship Repair, Survey, and Inspection	3
	MEMO2313	Ship Powering and Propulsion	3
	MEMO1413	Dynamic of Marine Power Plant	3
	MEMO2833	Marine Transport System	3
	MEMO3843	Maritime Management and Law	3
	MEMO2513	Design for Advance Marine Vehicles	3
	<i>Choose 5 courses from this track</i>		
<b>Offshore technology</b>	MEMO1213	Dynamic of Marine Structures (compulsory)	3
	MEMO2813	Safety, Risk and Reliability in Marine Operation (compulsory)	3
	MEMO2113	Strength and Vibration of Marine Structures (compulsory)	3
	MEMO2003	Marine Environment and Renewable Energy	3
	MEMO2123	Decommissioning and Recycling of Marine Structures	3
	MEMO2223	Mooring and Riser Analysis	3
	MEMO2723	Unmanned Underwater Vehicles for Offshore Operations	3