

**Bachelor of Mechanical Engineering (Hons.): Programme Structure for Malaysian Students  
(for Normal Semester Intake Starting from Semester 2, 2013/2014)**

Semester	Code	Courses	Credit Hours	Pre-requisite	Co-requisite
Semester I	MATB113	Advanced Calculus & Analytical Geometry	3	NONE	NONE
	MEMB113	Engineering Graphics & CAE	3	NONE	NONE
	CSEB113	Principles of Programming	3	NONE	NONE
	TTTB113	Tamadun Islam Tamadun Asia	3	NONE	NONE
	METB113	Engineering Materials	3	NONE	NONE
	<b>Total Credit Hours</b>			<b>15</b>	
Semester II	MATB143	Differential Equations	3	NONE	NONE
	ICSB112/MCSB112	Islam/Moral & Civil Society I	2	NONE	NONE
	MEFB121	Manufacturing Processes Lab.	1	METB113	NONE
	MEMB123	Mechanics I: Statics	3	NONE	NONE
	MATB253	Linear Algebra	3	NONE	NONE
	TECB213	Technical Communications	3	MEMB113, METB113	NONE
<b>Total Credit Hours</b>			<b>15</b>		
Semester III	MEFB213	Manufacturing Processes	3	MEFB121	NONE
	MEHB213	Thermodynamics I	3	NONE	NONE
	MEMB233	Mechanics II: Dynamics	3	MEMB123	NONE
	EEEEB113	Circuits Analysis I	3	NONE	MATB113
	EEEEB111	Electrical Measurement Lab.	1	NONE	EEEEB113
	ICSB212/MCSB212	Islam/Moral & Civil Society II	2	ICSB112/ MCSB112	NONE
<b>Total Credit Hours</b>			<b>15</b>		
Semester IV	COEB223	Numerical Methods For Engineers	3	MATB143, MATB253	CSEB113
	MEMB243	Mechanics of Materials	3	MEMB123, MATB113	NONE
	MEMB221	Mechanics and Materials Lab.	1	METB113	MEMB243
	MEHB223	Mechanics of Fluids I	3	MEMB123	NONE
	MEHB221	Fluids Mechanics Lab	1	NONE	MEHB223
	MEMB263	Theory of Machines	3	MEMB233	NONE
<b>Total Credit Hours</b>			<b>14</b>		
Semester V	MEHB312	Thermodynamics II	2	MEHB213	NONE
	MEHB332	Mechanics of Fluids II	2	MEHB223	NONE
	MESB323	Modeling & Control of Dynamic Systems	3	MATB143	NONE
	MEMB333	Machine Design	3	MEMB243, MEFB213, MEMB263	NONE
	MEMB331	Machine Design & CAD Lab	1	MEMB263, MEMB113	NONE
	MESB333	Engineering Measurements & Lab	3	MATB143, EEEB113, MEHB223, MEMB243	NONE
	COEB442	Engineering Economics	2	MEFB213	NONE
<b>Total Credit Hours</b>			<b>16</b>		
Semester VI	MEHB323	Heat Transfer	3	MEHB213, MEHB223	NONE
	MEHB321	Heat Transfer & Applied Thermo. Lab.	1	MEHB213, MEHB223	NONE
	MEMB343	Mechanical Vibration	3	MEMB233, MEMB263	NONE
	MEMB322	Mechanical Design Process	2	MEMB333	MEHB323
	ICSB312/MCSB312	Islam/Moral & Civil Society III	2	ICSB212/ MCSB212	NONE
	**	Literature and Sociology	3	NONE	NONE
	COEB422	Engineers in Society	2	MEMB333	NONE
<b>Total Credit Hours</b>			<b>16</b>		

Semester	Code	Courses	Credit Hours	Pre-requisite	Co-requisite
Special Semester	COEB314	Industrial Training	4	70 credit hours, MEMB263	NONE
		<b>Total Credit Hours</b>	<b>4</b>		
Semester VII	MPRB412	Project 1	2	MEMB322	NONE
	COEB432	Principles of Management	2	MEMB243	NONE
	MESB443	Electro-Mechanical Systems	3	MATB113, EEEB113, MEMB333	NONE
	HESB113	Hubungan Etnik	3	NONE	NONE
	**	Technical Elective I	3	**	**
	**	Technical Elective II	3	**	**
		<b>Total Credit Hours</b>	<b>16</b>		
Semester VIII	MPRB424	Project 2	4	COEB314, MPRB412	NONE
	MEMB483	Capstone Design	3	MEMB322	MESB443
	**	Technical Elective III	3	**	**
	**	Technical Elective IV	3	**	**
	**	Technical Elective V	3	**	**
		<b>Total Credit Hours</b>	<b>16</b>		
<b>OVERALL CREDIT HOURS</b>			<b>127</b>		

Technical Elective Courses

**Thermal Engineering**

MEHB403	Power Generation	3	MEHB312, MEHB332	NONE
MEHB413	Heating, Ventilation & Air Conditioning <i>(only offered in Semester 1)</i>	3	MEHB312, MEHB223, MEHB323	NONE
MEHB423	Turbomachinery	3	MEHB312, MEHB332	NONE
MEHB433	Combustion Engineering	3	MEHB312, MEHB332	NONE
MEHB443	Environmental Engineering	3	MEHB312, MEHB332	NONE
MEHB453	Industrial Energy Management	3	MEHB323	NONE
MEHB463	Computational Fluid Dynamics	3	MEHB332, COEB223	NONE
MEHB483	Thermal Systems Design and Optimization	3	MEHB323	NONE
MEHB493	Internal Combustion Engines	3	MEHB312	NONE
MEHB503	Renewable Energy	3	MEHB213, COEB442	NONE
MEHB513	Introduction to Nuclear Technology <i>(only offered in Semester 2)</i>	3	COEB442	NONE
MEHB523	Introduction to Sustainability Engineering	3	COEB442	NONE

**Nuclear Engineering**

MENB403	Introduction to Nuclear Engineering <i>(only offered in Semester 1)</i>	3	COEB422	NONE
MENB413	Radiation Detection and Nuclear Instrumentation <i>(only offered in Semester 1)</i>	3	COEB422	NONE
MENB423	Introduction to Reactor Physics <i>(only offered in Semester 1)</i>	3	COEB422	NONE
MENB433	Radiation Safety and Nuclear Waste Management <i>(only offered in Semester 2)</i>	3	COEB422	NONE
MENB443	Reactor Thermal-hydraulic	3	MEHB323	NONE
MENB453	Nuclear Policy, Security and Safeguards <i>(only offered in Semester 2)</i>	3	COEB422	NONE

		<b>Applied Mechanics</b>			
Technical Elective Courses	MEMB403	Condition Monitoring and Maintenance Eng	3	MEMB333, MESB323	NONE
	MEMB413	Engineering Mechanics - Simulation	3	MEMB333, MESB323	NONE
	MEMB423	Finite Element Method <i>(only offered in Semester 1)</i>	3	MEMB333, COEB223	NONE
	MEMB453	Non Destructive Testing	3	MEMB333	NONE
	MEMB463	Failure Analysis and Design <i>(only offered in Semester 1)</i>	3	MEMB333, METB113	NONE
	MEMB473	Advanced Mechanics of Materials	3	MEMB243	NONE
	METB413	Advanced Materials	3	MEMB333, METB113	NONE
		<b>Mechatronics</b>			
Technical Elective Courses	MESB403	Automation & Robotics <i>(only offered in Semester 2)</i>	3	MESB323, MEFB213	NONE
	MESB413	Elements of Mechatronics <i>(only offered in Semester 1)</i>	3	MESB323	NONE
	MESB423	Robot Design	3	MEMB333, MESB323	NONE
	ECEB463	Artificial Intelligence and Neural Fuzzy System	3	MESB323	NONE
		<b>Manufacturing Systems</b>			
MQA Courses	MEFB413	Advanced Manufacturing Processes	3	MEMB333, MEFB213	NONE
	MEFB433	Production, Planning and Control	3	MEMB333, MEFB213	NONE
	MEFB443	Industrial Engineering	3	MEMB333, MEFB213	NONE
	MEFB453	Total Quality Management	3	MEMB333, MEFB213	NONE
	MEFB473	Computer Aided Manufacturing <i>(only offered in Semester 2)</i>	3	MEMB331, MEFB213	NONE
	EEIB413	Process Control & Instrumentation	3	MESB323	NONE
		<b>MQA and University (Compulsory)</b>			
MQA Courses	TTTB113	Tamadun Islam Tamadun Asia	3	NONE	NONE
	ICSB112/MCSB112	Islam/Moral & Civil Society I	2	NONE	NONE
	ICSB212/MCSB212	Islam/Moral & Civil Society II	2	ICSB112/ MCSB112	NONE
	ICSB312/MCSB312	Islam/Moral & Civil Society III	2	ICSB212/ MCSB212	NONE
	HESB113	Hubungan Etnik	3	NONE	NONE
		<b>Literature and Sociology (Take any 1 subject)</b>			
Literature & Sociology Courses	MLKB113	Bahasa Melayu <i>(compulsory for Malaysian students without Credit in Bahasa Malaysia SPM)</i>	3	NONE	NONE
	KDKB113	Kepimpinan & Keusahawanan	3	NONE	NONE
	SPRB113	Sports & Recreation at Workplaces	3	NONE	NONE
	KKSB113	Kaunseling & Kerja Sosial	3	NONE	NONE
	RELB113	Comparative Religion	3	NONE	NONE
	PKIB113	Creative Thinking	3	NONE	NONE
	SPYB113	Introduction to Social Psychology	3	NONE	NONE
	MANB113	Mandarin	3	NONE	NONE
	FRAB113	French	3	NONE	NONE
	GERB113	German	3	NONE	NONE
JAPB113	Japanese	3	NONE	NONE	