

**BACHELOR OF MATERIALS ENGINEERING WITH HONOURS**

<b>TYPE OF COURSES</b>	<b>CREDIT HOURS</b>	<b>ELEMENT</b>
<b>A. University Required Course (UNICORE)</b>	20	UNGS, ENGLISH, BAHASA MELAYU, TILAWAH, USRAH, ARABIC LANGUAGE, CO CURRICULUM
<b>B. Kulliyah Required Courses (KRC)</b>	14	MATHS, ENTREP
<b>C. Engineering Core Courses</b>	91	GENE, MANAGEMENT
<b>D. Engineering Elective Courses</b>	6	
<b>E. Free Elective/ Extra Courses</b>	6	
<b>TOTAL</b>	<b>137</b>	

**A. UNIVERSITY REQUIRED COURSES (UNICORE)**

<b>No .</b>	<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>Pre-Requisite</b>	<b>Requirement</b>
1.	CCUB 1061	Usrah 1	0.5		
2.	CCUB 1062	Usrah 2	0.5	CCUB 1061	
3.	CCUB 2163	Usrah in Action 1 (Community profiling)	1	UNGS 1201	Year 2
4.	CCUB 3164	Usrah in Action 2	1	CCUB 2163	Year 3
5.	LEED 1301	English for Academic Writing	3		Year 1
6.	*LMBD 1131	Bahasa Melayu 1 (Non Malay speakers)	1		Required only for non malay speakers
7.	*LMBD 1132 / LM 2026	Bahasa Melayu 2 (Non Malay Speakers)	1	LMBD 1132	Required only for non malay speakers
8	TQTD 1002	Tilawah Al- Quran 1	0.5		Year 1
9.	TQTD 2002	Tilawah Al Quran 2	0.5	TQTD 1002	Year 2
10.	UNGS 1201	Sustainable Development : Issues, Policies and Practices	2		Year 1
11	UNGS 1301	Basic Philosophy in Islamic Worldview	3		Year 1
12	UNGS 2290	Knowledge and Civilization in Islam	2	UNGS 1301	
13	UNGS 2380	Ethic and Fiqh of Contemporary issues	3		
14	CCLM 2051	Leadership	0.5		
15	CCFM 2061	Family Management	0.5		
16	CCSS 1010/ 2010/3010	Skill 1	0.5		
17	CCSS 1010/	Skill 2	0.5		

	2010/3010				
18	LQAD 1003	Arabic for Ibadah 1	0.5		Year 1
19	LQAD 2003	Arabic for Ibadah 2	0.5	LQAD 1003	Year 2

\* Credit Hours Not counted

#### B. KULLIYAH REQUIRED COURSE (KRC)

No	Course Code	Course Title	Credit Hours	Pre-Requisite	Requirement
1.	MATH 1310	Engineering Mathematics 1	3		
2.	MATH 1321	Engineering Mathematics 2	3	MATH 1310	
3.	MATH 2311	Differential Equations	3	MATH 1321	
4.	MATH 2330	Computational Methods and Statistics	3	MATH 2311	
5.	MFGA 4210	Technology Entrepreneurship	2	MTRE 3300	

#### C. ENGINEERING CORE COURSES

No	Course Code	Course Title	Credit Hours	Pre-Requisite	Requirement
1	EECE 1316	Fundamental of Electrical and Electronics	3		
2	MECH 1340	Engineering Mechanics	3		
3	MTRE 1201	CAD and Simulation	2		
4	MFGA 1141	Introduction to Engineering Workshop		MTRE 1201	
5	EECE 1317	Engineering Programming	3		
6	MTRE 1302	Fundamental of Materials Science and Engineering	3		
7	MTRE 1101	Materials Engineering Lab 1	1		
8	MTRE 2301	Thermodynamics of Materials	3		
9	MTRE 2302	Materials Fluid Dynamics	3	MATH 1321	
10	MTRE 2303	Polymers	3	MTRE 1302	

11	MTRE 2101	Materials Engineering Lab 2	1	MTRE 1101	
12	MECH 2342	Mechanics of Materials	3	MECH 1340	
13	MTRE 2304	Extractive and Physical Metallurgy	3	MTRE 1302	
14	MTRE 2305	Heat and Mass Transfer	3		
15	MTRE 2306	Ceramics	3	MTRE 1302	
16	MTRE 2100	Engineering Conceptual Design	1		
17	MTRE 2102	Materials Engineering Lab 3	1	MTRE 2101	
18	MTRE 3301	Materials Processing Technology	3	MTRE 1302	
19	MTRE 3302	Materials Characterization and Non Destructive Testing	3	MTRE 1302	
20	MTRE 3303	Component Design and Materials Selection	3	MTRE 2100	
21	MTRE 3304	Composites	3	MTRE 2304	
22	MTRE 3101	Materials Engineering Lab 4	1	MTRE 2102	
23	MFGA 3342	Project Management and Engineering Economics	3	MATH 1321	
24	MFGA 3312	Quality Control and Improvement	3	MATH 2330	
25	MTRE 3300	Integrated Design Project	3	MTRE 1302, MTRE 2100, MTRE 3303	
26	MTRE 3305	Heat Treatment and Microstructure Control	3	MTRE 2304	
27	MTRE 3306	Semiconductors	3	EECE 1316, MTRE 3302	
28	MTRE 3500	Engineering Industrial Training	5	90 Credit Hours & CGPA 2.0	
29	MTRE 4301	Corrosion	3	MTRE 2304	

30	MTRE 4200	Final Year Project 1	2		
31	GENE 4301	Engineering Ethics, Safety and Environment	3	UNGS 2380	
32	MTRE 4302	Surface Engineering and Tribology	3	MTRE 1302	
33	MTRE 4400	Final Year Project 2	4	MTRE 4200	

**D. ENGINEERING ELECTIVES COURSES (CHOOSE 2 COURSES OUT OF 7)**

No	Course Code	Course Title	Credit Hours	Pre-Requisite	Requirement
1	MTRE 4311	Nanomaterials	3	4 <sup>th</sup> Year Standing	
2	MTRE 4312	Smart Materials	3		
3	MTRE 4313	Powder Metallurgy	3		
4	MTRE 4314	Waste Materials Processing	3		
5	MTRE 4315	Electroceramics	3		
6	MTRE 4316	Electronic Packaging Technology	3		
7	MTRE 4317	Failure Analysis of Materials	3		

**F. FREE ELECTIVES/ EXTRA COURSES**

No	Course Code	Course Title	Credit Hours	Pre-Requisite	Requirement
1.					
2.					