

BACHELOR OF ENGINEERING (MECHANICAL-AUTOMOTIVE) (HONOURS) CURRICULUM STRUCTURE

SEMESTER I - 17.5 c.h. (16.5 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
EECE 1311	Electric Circuits	3		
MANU 1201	Engineering Drawing	2		
MECH 1301	Statics	3		
MATH 1310	Engineering Mathematics I	3		
LE 4000	English for Academic Purposes	3		
LM 1030	Bahasa Melayu 1 for Foreign Students	0(1)		
LM 2026	Bahasa Melayu for Engineering	2(0)		
TQ 1011	Tilawah I	1		
CCXX YYYY	Study Circle	0.5		

SEMESTER II - 16.5 c.h. (17.5 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 1302	Dynamics	3	MECH 1301	
EECE 1312	Electronics	3	EECE 1311	
MATH 1320	Engineering Mathematics II	3	MATH 1310	
EECE 1101	Electrical Engineering Lab	1	EECE 1311	
EECE 1313	Programming for Engineers	3		
MANU 1202	Workshop Technology	2	MANU 1201	
LM 1031	Bahasa Melayu 2 for Foreign Students	0(1)		
TQ 2011	Tilawah II	1		
CCXX YYYY	Study Circle	0.5		

Note: credit hours in bracket is for international students

SEMESTER III (15.5 c.h./16.5 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MATR 2381	Materials Science and Engineering	3	MANU 1202	
MECH 2310	Thermodynamics	3	MATH 1320	
MECH 2211	Introduction to Automotive Engineering	2		
MECH 2118	Automotive Engineering Lab I	1		MECH 2310 MATR 2381
MATH 2320	Ordinary Differential Equations and Statistics	3	MATH 1320	
UNGS 2030	The Islamic Worldview	3		
LM 1031/ LM 1040	Bahasa Melayu II untuk Pelajar Asing Bahasa Melayu Nusantara II	(1)*		
CCXX XXXX	Co-curriculum	0.5		

* For international students

SEMESTER IV (16.5 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 2342	Mechanics of Materials	3	MECH 1301	
MANU 2381	Manufacturing Processes	3	MANU 1202	
MECH 2340	Fluid Mechanics	3	MATH 2320	
MECH 2119	Automotive Engineering Lab II	1		MECH 2342 MECH 2340 MECH 2312
MECH 2312	Dynamics of Machinery	3	MECH 1302 MATH 2320	
MATH 2350	Partial Differential Equations	3	MATH 2320	
CCXX XXXX	Co-curriculum	0.5		

SEMESTER V (18 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 3310	Heat Transfer	3	MECH 2310 MECH 2340	
MECH 3211	Instrumentations and Measurements	2	EECE 1312 MECH 2211	
UNGS 2040	Islam, Knowledge and Civilization	3	UNGS2030	
MECH 3340	Control Systems	3	MATH 2350 MECH 2312	
MECH 3312	Machine Design	3	MECH 2342	
MANU 3314	Project and Operation Management	3	MATH 2320	
MECH 3100	Seminar	1		

SEMESTER VI (17 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 3313	Internal Combustion Engines	3	MECH 2211 MECH 2312	
MECH 3300	Integrated Design Project (IDP)	3	MECH 3310 MECH 3312 MECH 3340 MANU 3314	
MECH 3118	Automotive Engineering Lab III	1	MECH 3310 MECH 3340	MECH 3313
MECH 3314	Vehicle Structures Design	3	MECH 3312	
MANU 3316	Computer Aided Design and Manufacturing (CAD/CAM)	3	MANU 2381	
MANU 3318	Engineering Economics and Management	3	MANU 3314	
CCXX XXXX	Co-Curriculum	0.5		
CCXX XXXX	Co-Curriculum	0.5		

INDUSTRIAL TRAINING (5 c.h.)

Course Code	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
EITK 3512	Engineering Industrial Training	5		

SEMESTER VII (17 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 4398	Project I	3		
MECH 43XX	Department Elective I	3		
MECH 4310	Vehicle Electrical and Electronics Systems	3	MECH 3211 MECH 2211	
MECH 4311	Mechanical Vibrations	3	MECH 2312	
UNGS 2050	Ethics and Fiqh for Everyday Life	3	UNGS 2040	
MANU 4211	Technology Entrepreneurship	2	MANU 3318	

SEMESTER VIII (16 c.h.)

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 4399	Project II	3		
MECH 4XXX	Department Elective II	3		
MECH 4312	Vehicle Dynamics and Chassis Systems	3	MECH 2312 MECH 2211	
MECH 4313	Power Train Systems Design	3	MECH 3312 MECH 2312	
MECH 4119	Automotive Engineering Lab IV	1	MANU 3316 MECH 3314 MECH 4310	
GENE 4300	Engineering ethics from Islamic Perspective	3	UNGS 2050	

LIST OF ELECTIVE COURSES FOR MECHANICAL-AUTOMOTIVE ENGINEERING

The elective courses are divided into three groups or streams. This is to promote focus towards a particular area.

DESIGN AND MANUFACTURING

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 4380	Finite Element Analysis	3	MECH 2342	
MECH 4381	Computer Aided Engineering	3	MECH 3312	
MANU 3313	Quality Control	3	MATH 2330	

THERMOFLUID SYSTEMS

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 4351	Refrigeration and Air Conditioning	3	MECH 3310	
MECH 4383	Computational Fluid Dynamics	3	MECH 2340	
MECH 4384	Renewable Energy	3	MECH 2310 MECH 3310	

STRUCTURES

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 4386	Nondestructive Evaluation of Structures	3		
MECH 4387	Composite Structures	3	MECH 2342	
MECH 4352	Acoustics and Noise Control	3	MECH 4311	

SPECIAL TOPICS

Course Codes	Course Title	Credit Hours	Pre-Requisites	Co-Requisites
MECH 4358	Special Topics in Automotive Engineering I	3		
MECH 4359	Special Topics in Automotive Engineering II	3		