

**MASTER OF SCIENCE IN MECHATRONICS ENGINEERING (COURSEWORK)
CURRICULUM STRUCTURE
1 YEAR
(INTEGRATED BACHELOR-MASTER PROGRAMME)**

Category		Course Codes	Course Name	Credit Hours	
Year 1	Semester 1	GENE 7000	Islamic Perspective on Technology and Society	3	
		MCTA 7950	Research Methodology and Seminar	3	
		MCTA 7102	Mechatronics System Design	3	
		MCTA 7212	Advanced Instrumentation and Measurement	3	
		MCTA 7222	Analog and Digital Control Systems	3	
	Semester 2			Elective 1	3
				Elective 2	3
		MCTA 7997	Project Paper		12
				Elective 1*	3
				Elective 2*	3
		Elective 3*	3		
TOTAL				42	

*If the students took the 3 Electives courses (PG Courses offered TO UG as in table)-the electives courses will be credit transferred if all the requirement is met.

Refer to Malaysian Qualifications Agency, MQA (MQA BIL. 6/2019) PROGRAM INTEGRASI SARJANA MUDA TAHAP 6 MQF DAN SARJANA TAHAP 7 MQF.

LIST OF ELECTIVE COURSES (PG Courses offered TO UG STUDENTS)

Course Code	Course Title	Credit Hours
MCTA 7102	Mechatronics System Design	3
MCTA 7212	Advanced Instrumentation and Measurement	3
MCTA 7222	Analog and Digital Control Systems	3
MCTA 7102	Mechatronics System Design	3

**MASTER OF SCIENCE IN MECHATRONICS ENGINEERING (COURSEWORK)
CURRICULUM STRUCTURE (FULL TIME)
NORMAL DURATION (4 SEMESTER)**

Category		Course Code	Course Name	Credit Hours
Year 1	Semester 1	GENE 7000	Islamic Perspective on Technology and Society	3
		MCTA 7950	Research Methodology and Seminar	3
		MCTA 7102	Mechatronics System Design	3
		MCTA 7212	Advanced Instrumentation and Measurement	3
	Semester 2	MCTA 7222	Analog and Digital Control Systems	3
			Elective 1	3
			Elective 2	3
Year 2	Semester 3		Elective 3	3
			Elective 4	3
			Elective 5	3
	Semester 4	MCTA 7997	Project Paper	12
				Total

LIST OF ELECTIVE COURSES

Course Code	Course Title	Credit Hours
INSTRUMENTATION AND CONTROL		
MCTA 7104	Modern Control Systems	3
MCTA 7108	Intelligent Machines	3
MCTA 7107	Vibration Analysis and Control	3
MCTA 7213	Advanced Digital Signal Processing	3
MCTA 7214	Nonlinear and Adaptive Control	3
ROBOTICS AND AUTOMATION		
MCTA 7103	Microprocessor in Mechanical Systems	3
MCTA 7210	Power Electronics Systems and Design	3
MCTA 7109	Advanced Topics in Robotics	3
MCTA 7311	Autonomous Agent Systems	3
MCTA 7211	Sensors and Actuators	3
MCTA 7106	Machine Vision	3

Kulliyyah of Engineering postgraduate students may select one elective course from any other programmes within the Kulliyyah of Engineering Elective courses listed in table below.

LIST OF FREE ELECTIVE COURSES

Course Code	Course Name	Credit Hours
EECE 7129	IoT and Cloud Computing	3
EECE 7130	Artificial Intelligence	3
EECE 7132	Big Data Analytics	3
EECE 7301	Circuits, Signals and Filters	3
EECE 7327	Microelectromechanical Sensors, Actuators and Systems	3

EECE 7328	Industrial Automation and Digital Control	3
MTRE 7003	Contemporary Materials for Engineering Applications	3
MTRE 7004	Advanced Metallic Materials	3
MTRE 7015	Sustainable Plastic	3
MFGA 7206	Additive Manufacturing	3
MFGA 7207	Project Management for Engineers	3
MFGA 7208	Managing Quality and Performance Excellence	3
MCTA 7311	Autonomous Agent Systems	3
MCTA 7107	Vibration Analysis and Control	3
MCTA 7210	Power Electronics Systems and Design	3
MECH 7112	MEMS/NEMS and Smart Material	3
MECH 7013	Applied Finite Element Methods	3
MECH 7016	Solar Energy System	3