

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

Category		Course Codes	Course Name	Credit Hours
Year 1	Semester 1	GENE 8000	The Integration of Knowledge in Engineering: An Islamic Perspective	3
		CIVE 7950	Research Methodology and Seminar	3
		CIVE 7301	Principle of Structural Systems Analysis and Design*	3
		CIVE 7302	Advanced Hydrology*	3
		CIVE 7303	Advanced Soil Mechanics and Foundation Engineering*	3
	Semester 2	CIVE 7997	Project Paper	12
			Elective 1	3
			Elective 2	3
			Elective 3	3
			Elective 4	3
		Elective 5	3	
			TOTAL	42

*If the students took these 3 core courses (PG courses offered to UG as electives), these courses will be credit transferred if all the requirements are met.

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

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

Category		Course	Course Name	Credit Hours
Year 1	Semester 1	GENE 8000	The Integration of Knowledge in Engineering: An Islamic Perspective	3
		CIVE 7301	Principle of Structural Systems Analysis and Design	3
		CIVE 7302	Advanced Hydrology	3
		CIVE 7303	Advanced Soil Mechanics and Foundation Engineering	3
	Semester 2	CIVE 7950	Research Methodology and Seminar	3
			Elective 1	3
			Elective 2	3
Year 2	Semester 3		Elective 3	3
			Elective 4	3
	Semester 4		Elective 5	3
		CIVE 7997	Project Paper	12
				TOTAL

LIST OF ELECTIVE COURSES

No.	Elective by Specialization Courses		CREDIT HOURS
	STRUCTURE AND CONSTRUCTION ELECTIVES		
1	CIVE 7311	Advanced Prestressed Concrete Design	3
2	CIVE 7312	Advanced Solid Mechanics	3
3	CIVE 7313	Advanced Finite Elements Method	3
4	CIVE 7321	Advanced Concrete Technology	3
5	CIVE 7322	Advanced Construction Engineering	3
6	CIVE 7314	Advanced Steel Design	3
7	CIVE 7315	Bridge Analysis and Design	3
8	CIVE 7316	Structural Dynamics	3
9	CIVE 7317	Advanced Structural Wind Engineering	3
10	CIVE 7318	Seismic Design and Analysis of Concrete Structures	3
11	CIVE 7323	Construction Law	3
12	CIVE 7324	Advanced Construction Project Management	3
No.	Elective by Specialization Courses		CREDIT HOURS
	WATER RESOURCES AND ENVIRONMENT		
1	CIVE 7331	CFD Modelling	3
2	CIVE 7332	Coastal and Offshore Engineering	3
3	CIVE 7333	River Mechanics	3
4	CIVE 7334	Groundwater Engineering	3
5	CIVE 7341	Solid Waste Remediation and Utilisation	3
6	CIVE 7335	Integrated River Basin Management	3
7	CIVE 7342	Environmental Management	3
8	CIVE 7343	Environmental Biochemistry	3
9	CIVE 7344	Advanced Environmental Engineering	3
GEOTECHNICAL AND TRANSPORTATION			
1	CIVE 7352	Soil Dynamics	3
2	CIVE 7354	Advanced Slope Engineering	3
3	CIVE 7361	Urban Transportation Engineering	3
4	CIVE 7362	Intelligent Transport System	3
5	CIVE 7363	Pavement Analysis and Design	3
6	CIVE 7364	Pavement Management System	3
7	CIVE 7365	Traffic Management & Analysis	3
8	CIVE 7366	Railway Engineering	3

Kulliyah of Engineering postgraduate students may select one elective course from any other programmes within the Kulliyah 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