



XIAMEN UNIVERSITY MALAYSIA

廈門大學 馬來西亞分校

PROGRAMME HANDBOOK

BACHELOR OF
ELECTRICAL AND ELECTRONICS
ENGINEERING (HONS)

ACADEMIC SESSION: 2026/09



Academic Affairs Office

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1. UNIVERSITY VISION AND MISSION

Vision

- Xiamen University Malaysia aspires to become a university with a distinct global outlook, featuring first-class teaching and research, and embracing cultural diversity.

Mission

- To nurture young talents with dignity and wisdom, turning them into fine citizens of the region who will contribute to the prosperity of the people and social progress of Malaysia, China and Southeast Asia.

2. PROGRAMME AIMS

The programme at XMU is designed to produce electrical and electronics engineering professionals who possess knowledge, skills and appropriate attitudes in the area of electrical and electronic engineering and technology which encompass core science engineering knowledge, wide range of soft skills including communication, analytical and problem solving, team-work, engineering economics and management skills.

3. PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The PEOs are to produce graduates who are:

Professionalism

PEO1

Graduates will be capable of using problem-solving techniques and critical analysis to establish themselves as practicing professionals and demonstrate leadership skills and entrepreneurial spirit in the field of Electrical and Electronics Engineering or related fields

PEO2

Continuous Personal Development

Graduates will engage in lifelong pursuit of knowledge and interdisciplinary learning appropriate for industrial and academic careers

PEO3

Societal Engagement

Graduates will contribute to sustainable development and the well-being of society

4. PROGRAMME LEARNING OUTCOMES (PLO)

At the end of the programme, graduates will be able to:

PLO1	Knowledge and Understanding	Apply knowledge of mathematics, natural science, computing, electrical & electronic engineering fundamentals and engineering specialisation principles to define and utilize engineering procedures, processes, systems and methodologies
PLO2	Cognitive Skills	Identify, formulate, research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development
PLO3	Practical Skills	Design solutions for complex engineering problems and systems, components or processes that meet specified needs with appropriate consideration for public health and safety, whole-life cost, net zero carbon as well as resource, cultural, societal, and environmental considerations
PLO4	Interpersonal Skills	Conduct investigation into complex problems using research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions
PLO5	Communication Skills	Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations
PLO6	Digital Skills	Apply reasoning informed by contextual knowledge to assess sustainable development, societal, health, safety, legal, and the environment in solving complex engineering problems
PLO7	Numeracy Skills	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion
PLO8	Leadership, Autonomy and Responsibility	Function effectively as an individual, and as a member or leader in diverse teams and inclusive and in multidisciplinary, face-to-face, remote and distributed settings
PLO9	Personal Skills	Communicate effectively and inclusively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, taking into account cultural, language, and learning differences
PLO10	Entrepreneurial Skills	Apply knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
PLO11	Ethics and Professionalism	Recognise the need for, and have the preparation and ability to engage in independent and life-long learning, adaptability to new and emerging technologies, critical thinking in the broadest context of technological change

5. EXPECTED AREAS OF GRADUATE EMPLOYMENT

Our graduates will have the opportunities to work in many industries, including:

- Electronics
- IT
- Telecoms
- Manufacturing
- Power
- Automotive systems
- Aerospace technology
- Renewable energy technology, etc.

6. CURRICULUM STRUCTURE

The minimum requirement for graduation will be **150** credits, with all the components meeting the minimum credit values specified in Table 1.

Table 1: Components of the Programme and its Value

	Course Classification	Credit Value	Percentage (%)
1	Compulsory courses/modules:		
	Core General Education	12	8.0%
	• Elective General Education	14	9.3%
2	• Core/Major(s)/Specialisation:		
	• Engineering Core 1	69	46.0%
	• Engineering Core 1	21	14.0%
	• Project	12	8.0%
3	Optional/elective courses:		
	• Engineering Elective	18	12.0%
4	Minor courses (if applicable)		
5	Industrial Training/Practicum	4	2.7%
6	Others (Specify)		
	Total Credit Value	150	100%

Compulsory Courses

Compulsory Courses refer to *Mata Pelajaran Pengajian Umum (MPU)*, or General Studies, which is a compulsory component of undergraduate education in Malaysia as mandated by the Ministry of Higher Education (MoHE), as shown in Table 2a below.

MPU aims to develop well-rounded graduates by complementing academic studies with broader knowledge, essential skills, ethical values, and social responsibility. Through courses that promote critical thinking, effective communication, integrity, and community engagement, MPU prepares students to become responsible citizens and lifelong learners in an increasingly interconnected world.

Table 2a: Components of the **Compulsory** Courses and its Value

No.	Name of Course	Course Code	Credit Value	International	Malaysian
U1 (3 courses @ 2 credits per course) Philosophy, Values & History Appreciation					
1	Bahasa Melayu Komunikasi 2	MPU1012	2	√	-
2	Integriti dan Antirasuah (Integrity and Anti-Corruption)	MPU1022	2	√	√
3	Aspirasi Negara Bangsa (Malaysian Nation-State Aspiration)	MPU1032	2	-	√
4	Falsafah dan Cabaran Semasa	MPU1042	2	-	√
5	Citra Malaysia (Malaysian Citra)	MPU1052	2	√	-
U2 (1 course @ 2 credits) Soft Skills					
6	Bahasa Kebangsaan A	MPU2012	2	-	1. Fail Bahasa Melayu SPM OR 2. Scored below C/ without credit in Bahasa Melayu SPM
7	Writing for Professional Purposes	MPU2022	2	√	1. Malaysian students with a credit in BM at SPM OR 2. Took and Passed Bahasa Kebangsaan A in diploma level MUST take Writing for Professional Purposes.
U3 (1 course @ 2 credits) Knowledge About Malaysia					
8	Artificial Intelligence and Malaysia's Digital Economy	MPU3012	2	√	√
U4 (1 course @ 2 credits) Practical Course (Community Service, Motivational, Co-curriculum)					
9	Community Service	MPU4012	2	√	√
Total Credit Value (Compulsory Courses)			12		

General Elective Courses

General Elective Courses refer to courses designed to give students options beyond their major-related courses in order to diversify their scope of knowledge.

Students in Science field can choose courses they are interested in from Group I (Arts), Group II (Business) and Group IV (Artificial Intelligence) as shown in Table 2b. Students in Electrical Engineering shall achieve at least a total of 14 credits with each group meets the minimum requirement of 1 course.

Table 2b: Components of the **General Elective** Courses and its Value

No.	Name of Course	Course Code	Credit Value	Remarks
Group I (Arts)				
	Group I comprises general elective courses in the field of Arts such as <i>Art Appreciation, Basic Korean Language, and Communication Skills for Job Search.</i>	G01XX/ G1XXX		Minimum 1 course
Group II (Business)				
	Group II comprises general elective courses in the field of Business such as <i>Introduction to Finance, Entrepreneurship and Sustainable Development, and Introduction to International Business</i>	G02XX		Minimum 1 course
Group IV (Artificial Intelligence)				
	Group IV comprises general elective courses in the field of Artificial Intelligence , comprising: • Discipline-based (Compulsory) • General (Optional)	G04XX		Minimum 1 course
Total Credit Value (General Elective Courses)			14	

*Note: The courses listed are provided as examples for reference only. The actual general elective courses offered may vary each semester. Students should refer to the **General Elective Course Library** for the list of general elective courses available in a particular semester.*

Engineering Core 1 Courses

Engineering Core Courses refer to courses designed to meet the core educational objectives; each major has its own features.

Table 2c: Components of the **Engineering Core 1** Courses and its Value

No.	Name of Course	Course Code	Credit Value
1	Programming Language C	COM102	3
2	Electronic Engineering	COM112	3
3	Electrical Engineering	COM111	3
4	Circuits and Devices	COM113	3
5	Computer Architecture	COM213	3
6	Microelectronic Devices and Circuits	COM212	3
7	Digital Electronics	COM214	3
8	Engineers and Society	EEE202	3
9	Instrumentation	EEE203	3
10	Signals and Systems	EEE221	3
11	Electromagnetic Field Theory and Waves	EEE330	3
12	Electrical Machinery and Drive	EEE303	3
13	High Voltage Engineering	EEE304	3
14	Embedded Systems	EEE305	3
15	RF and Microwave Circuits	EEE331	3
16	Semiconductor Physics and Device Processes	EEE313	3
17	Engineering Management	EEE316	3
18	Control System	EEE319	3
19	Power Electronics	EEE322	3
20	Statistical and Numerical Techniques	EEE401	3
21	Power System Analysis	EEE406	3
22	Electrical Energy Utilization	EEE407	3
23	Communication System	EEE411	3
Total Credit Value (Engineering Core 1 Courses)			69

Table 2d: Components of the **Engineering Core 2** Courses and its Value

No.	Name of Course	Course Code	Credit Value
1	Engineering Mathematics (I)	COM110	3
2	Engineering Mathematics (II)	COM104	3
3	Engineering Mathematics (III)	COM211	3
4	Engineering Mathematics (IV)	COM208	3
5	Engineering Mathematics (V)	COM209	3
6	Engineering Physics (I)	COM105	3
7	Engineering Physics (II)	COM202	3
Total Credit Value (Engineering Core 2 Courses)			21

Table 2e: Components of the **Project** and its Value

No.	Name of Course	Course Code	Credit Value
1	Capstone Project I	EEE309	3
2	Capstone Project II	EEE414	3
3	Final Year Project I	EEE420	3
4	Final Year Project II	EEE421	3
Total Credit Value (Project)			12

Table 2f: Components of the **Industrial Training** and its Value

No.	Name of Course	Course Code	Credit Value
1	Industrial Training	EEE310	4
Total Credit Value (Industrial Training)			4

Engineering Elective Courses (courses marked with asterisk*)

Engineering Elective Courses refer to courses designed to help students to identify their interested field or direction within the major, which enable them to be better prepared for their careers pathways.

For major elective courses, students are required to choose designated courses based on table below:

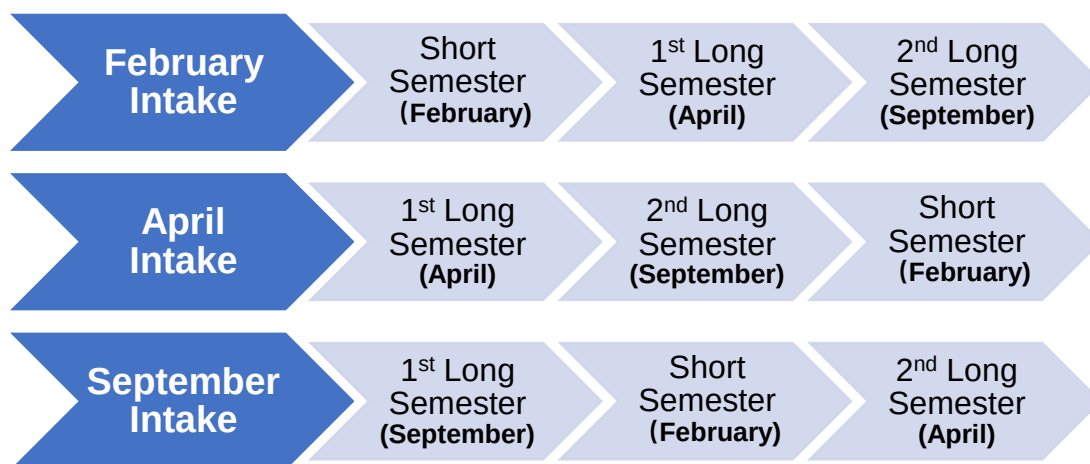
Table 2g: Components of the **Engineering Elective** Courses and its Value

No.	Name of Course	Course Code	Credit Value	Remarks
	<u>Group I</u>			
1	Data Structures	EEE211*	2	Minimum 4 credits
2	Laboratory on Circuit Analysis	EEE212*	2	
3	Engineering Graphics	EEE220*	2	
4	Artificial Intelligence	EEE215*	2	
5	Circuit SPICE Simulation	EEE216*	2	
6	Introduction to MATLAB Programming	EEE217*	2	
	<u>Group II</u>			
1	PCB Design and Techniques	EEE222*	2	Minimum 8 credits
2	Fundamentals of Microwave Technology	EEE307*	2	
3	Laboratory on Signals & Systems	EEE311*	2	
4	Programming Practice	EEE312*	2	
5	Digital System Design	EEE314*	2	
6	Advanced Analogue Circuit Design	EEE315*	2	
7	MCU Technology and Engineering	EEE317*	2	
8	Robotic Systems	EEE320*	2	
9	Digital Signal Processing	EEE323*	2	
10	Data Communication Networks	EEE324*	2	
11	Laboratory on Microwave Engineering	EEE325*	2	
12	Laboratory on Power Engineering	EEE326*	2	
13	Power Quality	EEE327*	2	
14	Laboratory on Electrical and Control System	EEE328*	2	

	Group III			
1	Microwave EDA	EEE403*	3	Minimum 6 credits
2	Optoelectronic Technology	EEE412*	3	
3	Antenna and Radio Wave Propagation	EEE413*	3	
4	Laboratory on Advanced Circuit Technique	EEE415*	3	
5	RF and MW Measurements	EEE416*	3	
6	Application Themes: Device and System Design	EEE417*	3	
7	Renewable Energy	EEE418*	3	
8	Computer Vision and Robotics	EEE422*	3	
9	Power System Protection	EEE423*	3	
10	Industrial Automation	EEE424*	3	
11	Integrated Circuit Packaging	EEE425*	3	
Total Credit Value (Engineering Elective Courses)			18	

7. LIST OF COURSES OFFERED FOR EACH ACADEMIC YEAR

There are three (3) semesters in each academic year: two (2) long semesters and one (1) short semester. The sequence of course registration varies according to the intake:



Students should be aware that the total number of credits shall not exceed **20** for long semester and **7** for a short semester.

It is important to note that the arrangement of courses for each academic year listed below is subject to change based on programme needs or institutional requirements.

Year	Semester	Course Name	Course Code	Classification	Credit
Year 1	1 st Long Semester	Engineering Mathematics (I)	COM110	Engineering Core 2	3
		Programming Language C	COM102	Engineering Core 1	3
		Electrical Engineering	COM111	Engineering Core 1	3
		Bahasa Melayu Komunikasi 2	MPU1012	Compulsory	2
		Aspirasi Negara Bangsa (Malaysian Nation-State Aspiration)	MPU1032	Compulsory	
		Falsafah dan Cabaran Semasa	MPU1042	Compulsory	2
		Citra Malaysia (Malaysian Citra)	MPU1052	Compulsory	
		Selection from General Electives	Gxxxx	Elective General Education	2
		Total Credit Value			
	2 nd Long Semester	Engineering Mathematics (II)	COM104	Engineering Core 2	3
		Electronic Engineering	COM112	Engineering Core 1	3
		Engineering Physics (I)	COM105	Engineering Core 2	3
		Circuits and Devices	COM113	Engineering Core 1	3
		Integriti dan Antirasuah (Integrity and Anti-Corruption)	MPU1022	Compulsory	2
		Bahasa Kebangsaan A	MPU2012	Compulsory	2
		Writing for Professional Purposes	MPU2022	Compulsory	
		Selection from General Electives	Gxxxx	Elective General Education	2
		Total Credit Value			
	Short Semester	Selection from General Electives	Gxxxx	Elective General Education	2
		Selection from General Electives	Gxxxx	Elective General Education	2
		Total Credit Value			
Year 2	1 st Long Semester	Engineering Mathematics (III)	COM211	Engineering Core 2	3
		Engineering Physics (II)	COM202	Engineering Core 2	3
		Microelectronic Devices and Circuits	COM212	Engineering Core 1	3
		Engineers and Society	EEE202	Engineering Core 1	3
		Instrumentation	EEE203	Engineering Core 1	3
		Selection from Table 2g Group I		Engineering Elective	4
		Total Credit Value			
	2 nd Long Semester	Engineering Mathematics (IV)	COM208	Engineering Core 2	3

Year	Semester	Course Name	Course Code	Classification	Credit
		Computer Architecture	COM213	Engineering Core 1	3
		Digital Electronics	COM214	Engineering Core 1	3
		Signals and Systems	EEE221	Engineering Core 1	3
		Semiconductor Physics and Device Processes	EEE313	Engineering Core 1	3
		Engineering Mathematics (V)	COM209	Engineering Core 2	3
		Total Credit Value			18
	Short Semester	Selection from General Electives	Gxxxx	Elective General Education	2
		Selection from General Electives	Gxxxx	Elective General Education	2
		Total Credit Value			4
Year 3	1 st Long Semester	Electromagnetic Field Theory and Waves	EEE330	Engineering Core 1	3
		Electrical Machinery and Drive	EEE303	Engineering Core 1	3
		High Voltage Engineering	EEE304	Engineering Core 1	3
		Engineering Management	EEE316	Engineering Core 1	3
		Control System	EEE319	Engineering Core 1	3
		Selection from Table 2g Group II		Engineering Elective	4
		Total Credit Value			19
	2 nd Long Semester	Embedded Systems	EEE305	Engineering Core 1	3
		RF and Microwave Circuits	EEE331	Engineering Core 1	3
		Capstone Project I	EEE309	Project	3
		Power Electronics	EEE322	Engineering Core 1	3
		Statistical and Numerical Techniques	EEE401	Engineering Core 1	3
		Selection from Table 2g Group II		Engineering Elective	4
		Total Credit Value			19
	Short Semester	Industrial Training (Malaysia/Xiamen)	EEE310	Industrial Training	4
		Total Credit Value			4
Year 4	1 st Long Semester	Final Year Project I	EEE420	Project	3
		Power System Analysis	EEE406	Engineering Core 1	3
		Electrical Energy Utilization	EEE407	Engineering Core 1	3
		Communication System	EEE411	Engineering Core 1	3
		Capstone Project II	EEE414	Project	3

Year	Semester	Course Name	Course Code	Classification	Credit
		Total Credit Value			15
	2 nd Long Semester	Final Year Project II	EEE421	Project	3
		Selection from Table 2g Group III		Engineering Elective	6
		Total Credit Value			9
	Short Semester	General Elective Course (Group IV Discipline-based)	G4xxx	Elective General Education	2
		Artificial Intelligence and Malaysia's Digital Economy	MPU3012	Compulsory	2
		Community Service	MPU4012	Compulsory	2
		Total Credit Value			6
	Grand Total				150

8. PREREQUISITE COURSES

A prerequisite is a course that must be completed before taking a more advanced course.

Course Code	Course Name	Prerequisites
COM113	Circuits and Devices	COM11 Electrical Engineering
COM202	Engineering Physics (II)	COM105 Engineering Physics I
COM213	Computer Architecture	COM102 Programming Language C
COM212	Microelectronic Devices and Circuits	COM113 Circuits and Devices
COM214	Digital Electronics	COM113 Circuits and Devices
COM208	Engineering Maths (IV)	COM110 Engineering Maths (I)
		COM211 Engineering Maths (III)
COM209	Engineering Maths (V)	COM110 Engineering Maths (I)
COM211	Engineering Maths (III)	COM110 Engineering Maths (I)
EEE203	Instrumentation	COM113 Circuits and Devices
EEE211*	Data Structures	COM102 Programming Language C
EEE214*	Training on Electronic Design and Techniques A	COM113 Circuits and Devices
EEE215*	Artificial Intelligence	COM102 Programming Language C
EEE221	Signals and Systems	COM211 Engineering Maths (III)
		COM113 Circuits and Devices
EEE330	Electromagnetic Field Theory and Waves	COM202 Engineering Physics (II)
EEE303	Electrical Machinery and Drive	COM111 Electrical Engineering
EEE304	High Voltage Engineering	COM11 Electrical Engineering
EEE305	Embedded Systems	COM214 Digital Electronics
EEE331	RF and Microwave Circuits	EEE330 Electromagnetic Field Theory and Waves
EEE309	Capstone Project I	EEE316 Engineering Management
EEE310	Industrial Training (in Malaysia/Xiamen)	CGPA must or more than 2.00
EEE312*	Programming Practice	COM102 Programming Language C
EEE313	Semiconductor Physics and Device Processes	COM202 Engineering Physics (II)
EEE314*	Digital System Design	COM214 Digital Electronics
EEE315*	Advanced Analogue Circuit Design	COM113 Circuits and Devices
		Microelectronic Devices and Circuits
EEE317*	MCU Technology and Engineering	COM213 Computer Architecture

9. IMPORTANT NOTE

Threshold Requirement

A grade threshold refers to the minimum number of marks that a student needs to obtain in a particular component of the course.

Electrical and Electronics Engineering students must obtain a threshold mark of 40 in the final examination and achieve an overall mark of 55 or above to pass a core / major / elective course.

Note: The above information is subject to change as new information becomes available in accordance with the guiding standards and requirements set by relevant authorities.