

Programme Structure

Bachelor of Electrical Engineering

Courses	Content	Credit Hours
University Courses	GIG1012: Philosophy and Current Issues* / GLT1017: Basic Malay Language**	2
	GIG1013: Appreciation of Ethics and Civilization	2
	GIG1003: Basic Entrepreneurship Enculturation	2
	GLTXXXX: English Communication Programme †	4
	University Elective Courses (Student Holistic Empowerment)	8
	Co-Curriculum	2
Sub-total Credit Hours		20
Faculty Courses	Faculty Core Courses	12
Sub-total Credit Hours		12
Department Courses	Department Core Courses	91
	Department Elective Courses	14
Sub-total Credit Hours		105
Total Credit Hours		137

* Compulsory for local students.

** Compulsory for international students.

† Students are required to complete the courses based on their English Proficiency qualification (MUET/IELTS/TOEFL), as stipulated in the respective PATH on page 30.

Academic Planner

Intake Session 2023/2024

YEAR 1						
CODE	COURSE	S1	S2	SS	TOTAL CREDIT	PRE-REQUISITE
UNIVERSITY COURSES						
GIG1012 / GLT1017	Philosophy And Current Issues* / Basic Malay Language**	2				
GLTXXXX	English Communication Programme I	2				
GIG1013	Appreciation of Ethics and Civilisations		2			
Sub-total Credit Hours		4	2		6	
UNIVERSITY ELECTIVE COURSES (STUDENT HOLISTIC EMPOWERMENT)						
Cluster 1	Thinking Matters: Mind and Intellect		2			
Sub-total Credit Hours			2		2	
FACULTY COURSES						
KIX1001	Engineering Mathematics 1	3				
KIX1002	Engineering Mathematics 2		3			
Sub-total Credit Hours		3	3		6	
DEPARTMENT CORE COURSES						
KIE1003	Digital System	3				
KIE1004	Programming I	3				
KIE1005	Circuit Analysis I	3				
KIE1001	Lab 1		1			
KIE1006	Electronic Physics		3			
KIE1007	Electronic Circuits I		3			
KIE2006	Signals and Systems		3			
Sub-total Credit Hours		9	10		19	
TOTAL CREDIT HOURS		16	17	0	33	

* Compulsory for local students.

** Compulsory for international students.

YEAR 2						
CODE	COURSE	S1	S2	SS	TOTAL CREDIT	PRE-REQUISITE
UNIVERSITY COURSES						
GLTXXXX	English Communication Programme II	2				
GIG1003	Basic Entrepreneurship Enculturation		2			
	Co-Curriculum		2			
Sub-total Credit Hours		2	4		6	
UNIVERSITY ELECTIVE COURSES (STUDENT HOLISTIC EMPOWERMENT)						
Cluster 2	Emotional, Physical and Spiritual Intelligence: Heart, Body & Soul	2				
Cluster 3	Technology/Artificial Intelligence and Data Analytics: i-Techie		2			
Sub-total Credit Hours		2	2		4	
FACULTY COURSES						
KIX2006	Engineering Economics and Project Management		3			
Sub-total Credit Hours			3		3	
DEPARTMENT CORE COURSES						
KIE1002	Lab 2	1				
KIE1008	Programming II	3				
KIE2004	Electronic Circuit II	3				
KIE2007	Basic Electromagnetics	3				
KIE2010	Microprocessors and Microcontrollers	3				
KIE2001	Lab 3		1			
KIE2008	Communication Systems		3			
KIE2009	Machines and Drives		3			
KIE2011	Digital Design		3			
Sub-total Credit Hours		13	10		23	
TOTAL CREDIT HOURS		17	19		36	

YEAR 3						
CODE	COURSE	S1	S2	SS	TOTAL CREDIT	PRE-REQUISITE
UNIVERSITY ELECTIVE COURSES (STUDENT HOLISTIC EMPOWERMENT)						
Cluster 4	Global Issues and Community Sustainability: Making the World a Better Place		2			
Sub-total Credit Hours			2		2	
FACULTY COURSES						
KIX2005	Law, Ethics and Sustainability for Engineers	3				
Sub-total Credit Hours		3			3	
DEPARTMENT CORE COURSES						
KIE2002	Lab 4	1				
KIE3004	Applied Electromagnetics	3				KIE2007
KIE3005	Numerical Analysis	3				
KIE3006	Control System	3				KIE2006
KIE3007	Digital Signal Processing	3				
KIE3012	Integrated Design Project	3	3			KIE1003, KIE1004, KIE1005, KIE1007, KIE2001
KIE3001	Lab 5		1			
KIE3008	Power Electronics		3			
KIE3009	Energy Conversion and High Voltage Transmission		3			
KIE3010	Instrumentation		3			
KIE3011	Digital Communications		3			KIE2008
KIE3003	Industrial Training			5		
Sub-total Credit Hours		16	16	5	37	
TOTAL CREDIT HOURS		19	18	5	42	

YEAR 4						
CODE	COURSE	S1	S2	SS	TOTAL CREDIT	PRE-REQUISITE
DEPARTMENT CORE COURSES						
KIE4002	Final Year Project	3	3			KIE1008, KIE2004, KIE2006, KIE2007
KIE4004	Power System	3				
KIE4028	Electrical Energy Utilization	3				
Sub-total Credit Hours		9	3		12	
DEPARTMENT ELECTIVE COURSES						
	Elective Course I	2				
	Elective Course II	2				
	Elective Course III	2				
	Elective Course IV		2			
	Elective Course V		2			
	Elective Course VI		2			
	Elective Course VII		2			
Sub-total Credit Hours		6	8		14	
TOTAL CREDIT HOURS		15	11		26	

Department Elective Courses

CODE	COURSE	CREDIT HOURS	PRE-REQUISITE
Sustainable Energy Technologies			
KIE4010	Electrical Energy Conversion Technologies	2	
KIE4011	Renewable Energy Technologies	2	
KIE4012	Nanotechnology for Sustainable Energy	2	
KIE4013	High Voltage Engineering	2	
KIE4029	Electrical Power Quality	2	
KIE4030	Power System Economics	2	
Information Communication Technologies			
KIE4014	Wireless Communication	2	
KIE4015	Optical Communication	2	
KIE4016	Antenna and Propagation	2	
KIE4017	Optical Waveguides	2	
KIE4026	Data Communication Networks	2	
Integrated Micro/Nano Electronics			
KIE4018	VLSI Design	2	
KIE4019	Analog VLSI Circuit Design	2	
KIE4020	Microwave Electronics and Systems	2	
KIE4021	Analog Electronics Design	2	
Cyberphysical Systems			
KIE4022	Embedded Systems	2	
KIE4023	Digital Control System	2	KIE3006
KIE4024	Optimization Methods	2	
KIE4031	Machine Learning	2	
KIE4032	Human-Computer Interaction	2	
KIE4033	Data Analytics	2	

Co-curricular Courses

The list of co-curricular courses available is as follows:

CODE	COURSE
GKA1001	Attach@Industry
GKI1001	Independent Research
GKK1001	Community Services
GKP1001	Talent Development
GKS1001	Volunteerism
GKU1001	Entrepreneurship

Student Holistic Empowerment Courses

The Student Holistic Empowerment (SHE) courses are categorized into four (4) clusters:

CLUSTER	COURSE
CLUSTER 1:	Thinking Matters: Mind and Intellect
CLUSTER 2	Emotional, Physical and Spiritual Intelligence: Heart, Body & Soul
CLUSTER 3	Technology/Artificial Intelligence and Data Analytics: I-Techie
CLUSTER 4	Global Issues And Community Sustainability: Making The World A Better Place

Note:

ALL STUDENTS ARE REQUIRED TO REGISTER ONE (1) COURSE FROM EACH CLUSTER

The list of Co-Curricular and SHE courses offered for each semester could be found through the following link:

<https://citra.um.edu.my/list-of-university-courses>