PROGRAMME STRUCTURE

BACHELOR OF ELECTRICAL ENGINEERING

Courses	Content	Credit Hours
University Courses	GIG1012: Philosophy and Current Issues[*] / GLT1049: Malay Language Communication[**]	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 33.

ACADEMIC PLANNER

INTAKE SESSION 2024/2025

CODE	COURSE	S1	S2	SS	TOTAL CREDIT	PRE-REQUISITE
YEAR 1						
UNIVERSITY COURSES						
GIG1012 / GLT1049	Philosophy And Current Issues* / Malay Language Communication**	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**	

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**	

CODE	COURSE	S1	S2	SS	TOTAL CREDIT	PRE-REQUISITE
YEAR 3						
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	

UNIVERSITY COURSES

The list of university courses offered for each semester could be found through the following link:

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

A. Student Holistic Empowerment (SHE)

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

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

All students are required to register one (1) course from each cluster.

B. 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

PATH FOR ENGLISH COMMUNICATION PROGRAMME

ENGLISH COMMUNICATION PROGRAMME (UNIVERSITY COURSE) LIST OF COURSES TO BE COMPLETED BY ALL STUDENTS			
PATH 1	**PATH 2**	**PATH 3**	**PATH 4**
• MUET BAND 2 • IELTS Band 4.0 • TOEFL Paper – Based Test (437 – 473) • TOEFL Computer – Based Test (123 – 150) • TOEFL Internet – Based Test (41 – 52) • PTE (Academic) – (10 – 28)	• MUET BAND 3 • IELTS Band 4.5 – 5.0 • TOEFL Paper – Based Test (477 – 510) • TOEFL Computer – Based Test (153 – 180) • TOEFL Internet – Based Test (53 – 64) • PTE (Academic) – (29 - 41)	• MUET BAND 4 • IELTS Band 5.5 – 6.0 • TOEFL Paper – Based Test (513 – 547) • TOEFL Computer – Based Test (183 – 210) • TOEFL Internet – Based Test (65-78) • PTE (Academic) – (42 – 57) • FCE (B & C) • GCE A Level (English) (Minimum C) • IGCSE/GCSE (English) (A, B & C)	• MUET BAND 5 & BAND 6 • IELTS Band 6.5 – 9.0 • TOEFL Paper – Based Test (550 – 677) • TOEFL Computer – Based Test (213 – 300) • TOEFL Internet – Based Test (79 – 120) • PTE (Academic) (58 – 90) • FCE (A) • GCE A Level (English) (B & A)
Students need to complete 2 courses (2 courses x 2 credits each) from this PATH	Students need to complete 2 courses (2 courses x 2 credits each) from this PATH	Students need to complete 2 courses (2 courses x 2 credits each) from this PATH	Students need to complete 2 courses (2 courses x 2 credits each) from this PATH
COMPULSORY GLT1018 – Proficiency in English I	**COMPULSORY** GLT1021 – Proficiency in English II	**COMPULSORY** GLT1024 – Proficiency in English III	**CHOOSE TWO:** • GLT1027 – Advanced Oral Communication* • GLT1028 – Advanced Business Writing* • Alternative courses - Foreign Language *Students can only register for one course per semester
** CHOOSE ONE: • GLT1019 – Let's Speak • GLT1020 – Fundamental Writing	**** CHOOSE ONE:** • GLT1022 – Speak Up • GLT1023 – Effective Workplace Writing	**** CHOOSE ONE:** • GLT1025 – Effective Oral Communication • GLT1026 – Writing at the Workplace	

** These courses have prerequisites and students can only register for them after obtaining a PASS in the compulsory course as stipulated in the respective PATH.

LIST OF FOREIGN LANGUAGE COURSES

Alternative Courses for Path 4

No.	Course Code	Course Name	Credit Hours
1	GLT1029	Bahasa Arab Asas 1 / *Basic Arabic Language 1*	2
2	GLT1030	Bahasa Arab Asas 2 / *Basic Arabic Language 2*	2
3	GLT1031	Bahasa Jepun Asas 1 / *Basic Japanese Language 1*	2
4	GLT1032	Bahasa Jepun Asas 2 / *Basic Japanese Language 2*	2
5	GLT1033	Bahasa Korea Asas 1 / *Basic Korean Language 1*	2
6	GLT1034	Bahasa Korea Asas 2 / *Basic Korean Language 2*	2
7	GLT1035	Bahasa Parsi Asas / *Basic Persian Language*	2
8	GLT1036	Bahasa Portugis Asas 1 / *Basic Portuguese Language 1*	2
9	GLT1037	Bahasa Portugis Asas 2 / *Basic Portuguese Language 2*	2
10	GLT1038	Bahasa Rusia Asas 1 / *Basic Russian Language 1*	2
11	GLT1039	Bahasa Rusia Asas 2 / *Basic Russian Language 2*	2
12	GLT1040	Bahasa Sepanyol Asas 1 / *Basic Spanish Language 1*	2
13	GLT1041	Bahasa Sepanyol Asas 2 / *Basic Spanish Language 2*	2
14	GLT1042	Bahasa Thai Asas 1 / *Basic Thai Language 1*	2
15	GLT1043	Bahasa Thai Asas 2 / *Basic Thai Language 2*	2
16	GLT1044	Bahasa Turki Asas / *Basic Turkish Language*	2