

PROGRAMME STRUCTURE

BACHELOR OF BIOMEDICAL ENGINEERING

FIRST INTAKE: OCTOBER 2025/2026

COURSES COMPONENT	CONTENT	CREDIT								
University	GIG1012: Philosophy and Current Issues (Local) GLT1049: Bahasa Melayu Komunikasi (International)	2								
	GIG1013: Appreciation of Ethics and Civilization 2	2								
	GIG1003: Basic Entrepreneurship Enculturation	2								
	English – GLT 1. English I 2. English II	4								
	Student Holistic Empowerment (SHE) – 4 Courses Cluster: <table border="1"><tr><td>Cluster 1</td><td>Thinking Matters: Mind and Intellect</td></tr><tr><td>Cluster 2</td><td>Emotional, Physical, and Spiritual Intelligence: Mind, Body & Soul [GQX0056 KIAR is a compulsory course]</td></tr><tr><td>Cluster 3</td><td>Technology/Artificial Intelligence and Data Analytics: i-Techie</td></tr><tr><td>Cluster 4</td><td>Global Issues and Community Sustainability: Making the World a Better Place</td></tr></table>	Cluster 1	Thinking Matters: Mind and Intellect	Cluster 2	Emotional, Physical, and Spiritual Intelligence: Mind, Body & Soul [GQX0056 KIAR is a compulsory course]	Cluster 3	Technology/Artificial Intelligence and Data Analytics: i-Techie	Cluster 4	Global Issues and Community Sustainability: Making the World a Better Place	8
	Cluster 1	Thinking Matters: Mind and Intellect								
	Cluster 2	Emotional, Physical, and Spiritual Intelligence: Mind, Body & Soul [GQX0056 KIAR is a compulsory course]								
	Cluster 3	Technology/Artificial Intelligence and Data Analytics: i-Techie								
	Cluster 4	Global Issues and Community Sustainability: Making the World a Better Place								
	Co-curriculum	2								
Sub-total Credit		20								
Core	Faculty Core Courses	12								
	Department Core Courses	81								
Sub-total Credit		93								
Elective	Department Open Elective Courses	8								
	Specialization Elective Courses	27								
Sub-total Credit		35								
TOTAL CREDIT		148								

YEAR	SEMESTER	COURSES COMPONENT	CODE	MODULE		CREDIT	TOTAL SEMESTER CREDIT
ONE (1)	01	UNIVERSITY: FIS/PEP/APK	GIG1003	ASAS PEMBUDAYAAN KEUSAHAWANAN	BASIC ENTREPRENEURSHIP ENCULTURATION	2	19
		UNIVERSITY: LANGUAGE	GLTXXX	KURSUS BAHASA INGGERIS I	ENGLISH I	2	
		FACULTY CORE	KIX1001	MATEMATIK KEJURUTERAAN 1	ENGINEERING MATHEMATICS 1	3	
		DEPARTMENT CORE	KIB1009	STATISTIK UNTUK KEJURUTERAAN BIOOPERUBATAN	STATISTICS FOR BIOMEDICAL ENGINEERING	3	
		DEPARTMENT CORE	KIB1010	ANATOMI DAN FISILOGI	ANATOMY AND PHYSIOLOGY	3	
		DEPARTMENT CORE	KIB1011	STATIK DAN MEKANIK BAHAN	STATICS AND MECHANICS OF MATERIALS	3	
		DEPARTMENT CORE	KIB1012	TEORI LITAR	CIRCUIT THEORY	3	
	02	UNIVERSITY: FIS/PEP/APK	GIG1012 / GLT1049	FALSAFAH DAN ISU SEMASA (WARGANEGARA) BAHASA MELAYU ASAS (PELAJAR ANTARABANGSA SAHAJA)	PHILOSOPHY AND CURRENT ISSUES (MALAYSIAN) BASIC MALAY LANGUAGE (INTERNATIONAL)	2	19
		UNIVERSITY: LANGUAGE	GLTXXX	KURSUS BAHASA INGGERIS II	ENGLISH II	2	
		UNIVERSITY: KO-K	XXXX	KO-KURIKULUM	CO-CURRICULUM	2	
		FACULTY CORE	KIX1002	MATEMATIK KEJURUTERAAN 2	ENGINEERING MATHEMATICS 2	3	
		DEPARTMENT CORE	KIB1013	MAKMAL KEJURUTERAAN BIOOPERUBATAN 1	BIOMEDICAL ENGINEERING LAB 1	2	
		DEPARTMENT CORE	KIB1014	SISTEM RANGKA OTOT MANUSIA	HUMAN MUSCULOSKELETAL SYSTEM	2	
		DEPARTMENT CORE	KIB1015	DINAMIK	DYNAMICS	3	
		DEPARTMENT CORE	KIB1016	ALAT ELEKTRONIK	ELECTRONIC DEVICES	3	
TWO (2)	03	UNIVERSITY: FIS/PEP/APK	GIG1013	PENGHAYATAN ETIKA DAN PERADABAN	APPRECIATION OF ETHICS AND CIVILISATIONS	2	17
		DEPARTMENT CORE	KIB2009	MAKMAL KEJURUTERAAN BIOOPERUBATAN 2	BIOMEDICAL ENGINEERING LAB 2	2	
		DEPARTMENT CORE	KIB2010	KEJURUTERAAN BIOOPERUBATAN, PENJAGAAN KESIHATAN DAN ETIKA	BIOMEDICAL ENGINEERING, HEALTHCARE AND ETHICS	3	
		DEPARTMENT CORE	KIB2011	BIOBAHAN	BIOMATERIALS	3	
		DEPARTMENT CORE	KIB2012	REKA BENTUK KEJURUTERAAN BIOOPERUBATAN 1	BIOMEDICAL ENGINEERING DESIGN 1	2	
		DEPARTMENT CORE	KIB2013	ASAS DALAM KEJURUTERAAN PROSTETIK DAN ORTOTIK	FUNDAMENTALS OF PROSTHETICS AND ORTHOTICS ENGINEERING	3	
		DEPARTMENT CORE	KIB2014	KAEDAH PERANGKAAAN DAN PENGATURCARAAN	NUMERICAL METHODS AND PROGRAMMING	2	
	04	FACULTY CORE	KIX2005	UNDANG-UNDANG, ETIKA DAN KEMAMPAHAN UNTUK JURUTERA	LAW, ETHICS AND SUSTAINABILITY FOR ENGINEERS	3	18
		DEPARTMENT CORE	KIB2016	MEKANIK BENDALIR DAN PROSES PENGANGKUTAN DALAM KEJURUTERAAN BIOOPERUBATAN	FLUID MECHANICS AND TRANSPORT PROCESSES IN BIOMEDICAL ENGINEERING	3	
		DEPARTMENT CORE	KIB2017	ELEKTROMAGNETISME DAN PERANTI BIOOPERUBATAN	ELECTROMAGNETISM AND BIOMEDICAL DEVICES	3	
		DEPARTMENT CORE	KIB2018	BIOMEKANIK GERAKAN MANUSIA	BIOMECHANICS OF HUMAN MOTION	3	
		DEPARTMENT CORE	KIB2019	MAKMAL KEJURUTERAAN BIOOPERUBATAN 3	BIOMEDICAL ENGINEERING LAB 3	2	
		DEPARTMENT CORE	KIB2020	REKA BENTUK KEJURUTERAAN BIOOPERUBATAN 2	BIOMEDICAL ENGINEERING DESIGN 2	2	
		UNIVERSITY: SHE	SHE	SHE (KLUSTER 2) GQX0056	SHE (CLUSTER 2) GQX0056	2	

THREE (3)	05	FACULTY CORE	KIX2006	EKONOMI KEJURUTERAAN DAN PENGURUSAN PROJEK	ENGINEERING ECONOMICS AND PROJECT MANAGEMENT	3	19
		DEPARTMENT CORE	KIB3015	KELESTARIAN DAN AMALAN DALAM KEJURUTERAAN BIOOPERUBATAN	SUSTAINABILITY AND PRACTICE IN BIOMEDICAL ENGINEERING	3	
		DEPARTMENT CORE	KIB3016	PEMROSESAN ISYARAT BIOOPERUBATAN	BIOMEDICAL SIGNAL PROCESSING	3	
		DEPARTMENT CORE	KIB3018	EKSPERIMEN DAN KOMPUTASI BIOMEKANIK	EXPERIMENTAL AND COMPUTATIONAL BIOMECHANICS	3	
		DEPARTMENT CORE	KIB3019	PROJEK REKA BENTUK BERSEPADU BIOOPERUBATAN 1	BIOMEDICAL INTEGRATED DESIGN PROJECT 1	3	
		DEPARTMENT CORE	KIB2015	KESELAMATAN DAN PIAWAIAN DALAM KEJURUTERAAN BIOOPERUBATAN	SAFETY AND STANDARDS IN BIOMEDICAL	2	
		DEPARTMENT CORE	SHE	SHE (KLUSTER 1/3/4)	SHE (KLUSTER 1/3/4)	2	
	06	DEPARTMENT CORE	KIB3030	PROJEK REKA BENTUK BERSEPADU BIOOPERUBATAN 2	BIOMEDICAL INTEGRATED DESIGN PROJECT 2	3	18
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 1	SPECIALIZATION ELECTIVE COURSE 1	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 2	SPECIALIZATION ELECTIVE COURSE 2	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 3	SPECIALIZATION ELECTIVE COURSE 3	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 4	SPECIALIZATION ELECTIVE COURSE 4	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 5	SPECIALIZATION ELECTIVE COURSE 5	3	
SPECIAL SEMESTER	SS	DEPARTMENT CORE	KIB3031	LATIHAN INDUSTRI	INDUSTRIAL TRAINING	5	5
FOUR (4)	07	DEPARTMENT CORE	KIB4020	PROJEK PENGIJAZAHAN (P)	FINAL YEAR PROJECT (P)	2	17
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 6	SPECIALIZATION ELECTIVE COURSE 6	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 7	SPECIALIZATION ELECTIVE COURSE 7	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 8	SPECIALIZATION ELECTIVE COURSE 8	3	
		OPEN ELECTIVE	KIB4XXX	KURSUS ELEKTIF TERBUKA 1	OPEN ELECTIVE COURSE 1	2	
		UNIVERSITY: SHE	SHE	SHE (KLUSTER 1/3/4)	SHE (CLUSTER 1/3/4)	2	
		UNIVERSITY: SHE	SHE	SHE (KLUSTER 1/3/4)	SHE (CLUSTER 1/3/4)	2	
	08	DEPARTMENT CORE	KIB4020	PROJEK PENGIJAZAHAN	FINAL YEAR PROJECT	4	16
		DEPARTMENT CORE	KIB3017	PENGIMEJAN PERUBATAN	MEDICAL IMAGING	3	
		SPECIALIZATION ELECTIVE	KIB4XXX	KURSUS ELEKTIF PENGKHUSUSAN 9	SPECIALIZATION ELECTIVE COURSE 9	3	
		OPEN ELECTIVE	KIB4XXX	KURSUS ELEKTIF TERBUKA 2	OPEN ELECTIVE COURSE 2	2	
		OPEN ELECTIVE	KIB4XXX	KURSUS ELEKTIF TERBUKA 3	OPEN ELECTIVE COURSE 3	2	
		OPEN ELECTIVE	KIB4XXX	KURSUS ELEKTIF TERBUKA 4	OPEN ELECTIVE COURSE 4	2	
TOTAL CREDITS FOR THE PROGRAMME							148

DEPARTMENT ELECTIVE COURSES

CODE	COURSE NAME	CREDIT HOURS
PROGRAMME ELECTIVE COURSES IN BIOMEDICAL		
KIB3020	Electrical Safety Design of Medical Devices and System	3
KIB3021	Photonics In Biomedical Engineering	3
KIB3022	Biomedical Control System	3
KIB3023	Microcomputer And Digital System	3
KIB3024	Medical Electronics	3
KIB4014	Instrumentation And Measurement	3
KIB4015	Computational Modelling in Biomedical Engineering	3
KIB4016	Healthcare Technology and Clinical Management	3
KIB4021	Artificial Intelligence in Biomedical Engineering	3
PROGRAMME ELECTIVE COURSES IN PROSTHETICS AND ORTHOTICS		
KIB3025	Biomechanics in Prosthetics and Orthotics	3
KIB3026	Below Knee Prosthetics	3
KIB3027	Principles of Upper Limb Prosthetics and Orthotics Design	3
KIB3028	Principles of Lower Limb Orthotics Design	3
KIB3029	Above Knee Prosthetics	3
KIB4017	Industrial Prosthetics Design	3
KIB4018	Industrial Orthotics Design	3
KIB4019	Practice Management in Prosthetic and Orthotics	3
KIB4022	Advanced Prosthetics and Orthotics Engineering	3
OPEN PROGRAMME ELECTIVE COURSES		
KIB4023	Sports Biomechanics and Rehabilitation	2
KIB4024	Assistive Technology in Rehabilitation	2
KIB4025	Mechanical Circulatory and Respiratory Support	2
KIB4026	Biomechatronics	2
KIB4027	Pattern and Image Analysis	2
KIB4028	Micro Technologies for Biomedical Engineering	2
KIB4029	Medical IT and Telemedicine	2
KIB4030	Clinical Prosthetics	2
KIB4031	Clinical Orthotics	2
KIB4032	Spinal Orthoses	2
KIB4033	Tissue Engineering	2
KIB4034	Advanced Biomaterials	2
KIB4035	Biochemistry and Analytical Techniques	2
KIB4036	Wireless Power Transfer in Biomedical Engineering	2