

SARJANA MUDA KEJURUTERAAN BIOOPERUBATAN

*BACHELOR OF
BIOMEDICAL ENGINEERING*



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Pengenalan | Introduction

Program Kejuruteraan Bioperubatan mula ditawarkan pada tahun 1997 di bawah pentadbiran Pejabat Dekan. Empat tahun kemudian, sejajar dengan pertambahan bilangan kakitangan, program ini telah berkembang dan berjaya menubuhkan jabatannya sendiri. Tempoh dari penghujung tahun 1990-an hingga awal tahun 2000-an merupakan suatu fasa yang mencabar apabila pelbagai perubahan berlaku dalam sistem pendidikan, sama ada yang membawa kesan positif mahupun sebaliknya.

Di bawah kepimpinan dan hala tuju profesor-profesor kanan, iaitu Prof. Ir. Dr. Wan Abu Bakar Wan Abas dan YB Prof. Dato' Dr. Goh Sing Yau, jabatan ini terus berkembang dan memperkukuh kedudukannya dari tahun ke tahun. Jabatan ini juga berjaya memperoleh akreditasi penuh bagi sistem pengajian 3+1 (tiga tahun pengajian kejuruteraan dan satu tahun pengajian asas), sistem 4+1 (empat tahun pengajian kejuruteraan dan satu tahun pengajian asas), serta sistem pengajian empat tahun.

Bidang kejuruteraan bioperubatan merangkumi pelbagai cabang khusus, antaranya bioinformatik, biobahan, biomekanik, kejuruteraan tisu, neurokejuruteraan dan pengukuran fisiologi. Matlamat jabatan adalah untuk melahirkan jurutera profesional yang berkeupayaan membuat keputusan teknikal dalam bidang kejuruteraan bioperubatan.

The Biomedical Engineering programme was first started in 1997, under the auspices of the Dean's office. Four years later, as the rank of staff starts to swell, we managed to break off from the care of the Dean's office and form our own department. The years beginning from the late 1990s to early 2000 were challenging times where various changes had occurred in the education system, be it for better or for worse.

It must be noted that under the leadership direction given by very senior professors (Prof. Ir. Dr. Wan Abu Bakar Wan Abas and YB Prof. Dato' Dr. Goh Sing Yau), we managed to grow in strength throughout the years and have managed to obtain full accreditation for the 3+1 (3 years of engineering studies + 1 year of foundation studies) system, the 4+1 (4 years of engineering studies + 1 year of foundation study) system as well as the 4 years system.

There are many different taxonomic breakdowns within biomedical engineering such as bioinformatics, biomaterials, biomechanics, tissue engineering, neuroengineering and physiological measurements. The aim of the department is to produce professional engineers who are able to make technical decisions in the biomedical engineering field.

Objektif Pendidikan Program | Programme Educational Objectives (PEO)

PEO 1	Graduan akan menjadikan diri mereka sebagai profesional yang terlatih dalam bidang kejuruteraan bioperubatan atau bidang yang berkaitan (Profesionalisme) <i>Graduates will establish themselves as practicing professionals in Biomedical Engineering or related fields (Professionalism)</i>
PEO 2	Graduan akan terlibat dalam pencarian pengetahuan sepanjang hayat dan pembelajaran antara disiplin yang sesuai untuk kerjaya industri dan akademik (Pembangunan Peribadi Berterusan) <i>Graduates will engage in lifelong pursuit of knowledge and interdisciplinary learning appropriate for industrial and academic careers (Continuous Personal Development)</i>
PEO 3	Graduan akan menyumbang kepada pembangunan lestari dan kesejahteraan masyarakat (Penglibatan Sosial) <i>Graduates will contribute to sustainable development and the well-being of society (Societal Engagement)</i>

Hasil Pembelajaran Program | Programme Learning Outcome (PLO)

Pada akhir program, graduan dapat:

At the end of the programme, graduates are able to:

PLO 1	Apply knowledge of mathematics, natural science, computing and engineering fundamentals, and an engineering specialization to develop solutions to complex biomedical engineering problems. (WK1-WK4)
PLO 2	Identify, formulate, research literature and analyze complex biomedical engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development. (WK1-WK4)
PLO 3	Design creative solutions for complex biomedical engineering problems and design systems, components or processes to meet identified needs with appropriate consideration for public health and safety, wholelife cost, net zero carbon as well as resource, cultural, societal, and environmental considerations as required. (WK5)
PLO 4	Conduct investigation of complex biomedical engineering problems using research methods including research-based knowledge, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions. (WK8)
PLO 5	Create, select and apply, and recognize limitation of appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex biomedical engineering problems. (WK2 and WK6)
PLO 6	Analyze and evaluate sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving complex biomedical engineering problems. (WK1, WK5, and WK7)
PLO 7	Demonstrate an understanding of the need for diversity and inclusion. Apply ethical principles and commit to professional ethics and norms of biomedical engineering practice and adhere to relevant national and international laws. (WK9)
PLO 8	Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multidisciplinary, face-to-face, remote and distributed settings. (WK9)
PLO 9	Communicate effectively and inclusively on complex biomedical 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.
PLO 10	Apply knowledge and understanding of biomedical engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects in multidisciplinary environments.
PLO 11	Recognise the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

Pendidikan Berasaskan Hasil (OBE) | Outcome-Based Education (OBE)

Pendidikan Berasaskan Hasil (Outcome-Based Education, OBE) telah dilaksanakan di Fakulti Kejuruteraan sejak tahun 2004, selaras dengan arahan Kementerian Pengajian Tinggi Malaysia dan Lembaga Jurutera Malaysia (Board of Engineers Malaysia, BEM). Pelaksanaan OBE juga merupakan salah satu keperluan bagi Malaysia untuk menjadi ahli penuh Washington Accord (WA), iaitu sebuah perjanjian antarabangsa yang mengiktiraf secara bersama ijazah Sarjana Muda dalam bidang kejuruteraan.

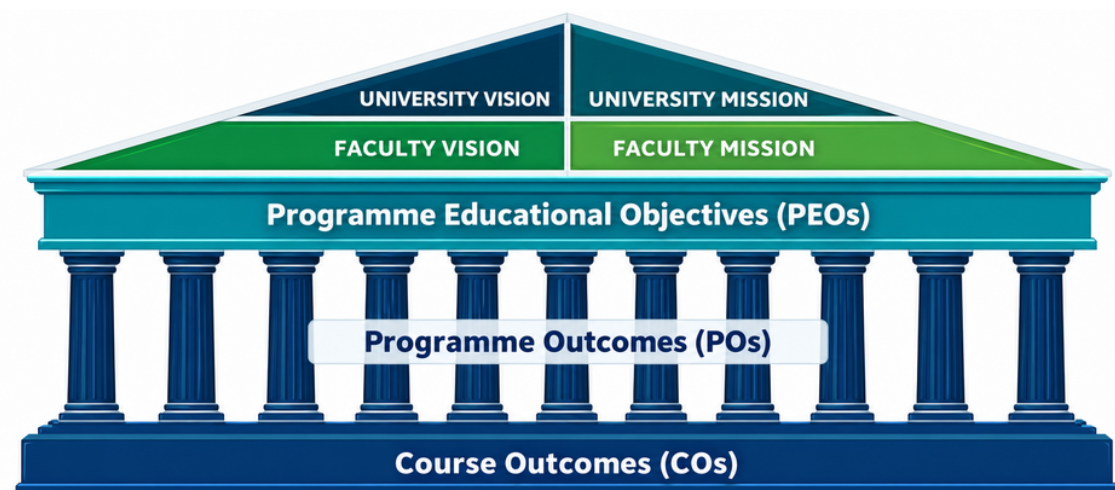
OBE merupakan model pendidikan yang diamalkan di peringkat antarabangsa dan memberi tumpuan kepada pengukuran hasil pembelajaran pelajar serta pelaksanaan tindakan penambahbaikan bagi mengatasi kekurangan dalam kaedah penyampaian kursus, kaedah penilaian, sikap pelajar dan aspek-aspek berkaitan. Kurikulum direka bentuk dengan hasil kursus (Course Outcomes, COs) yang khusus bagi mempersiapkan graduan untuk mencapai atribut graduan/hasil pembelajaran program (Programme Outcomes, POs) pada masa tamat pengajian.

POs pula dirangka bagi menghasilkan graduan yang bersedia untuk mencapai objektif pendidikan program (Programme Educational Objectives, PEOs) dalam tempoh 3 hingga 5 tahun selepas mereka menamatkan pengajian. PEOs dan POs telah dirumuskan melalui rundingan dengan semua pihak berkepentingan utama, termasuk majikan, alumni dan pelajar, bagi memenuhi tuntutan persekitaran pekerjaan yang semakin mencabar dan bersifat global.

Outcome-Based Education (OBE) had been implemented in the Faculty of Engineering since 2004, in accordance with the directives of the Ministry of Higher Education Malaysia and the Board of Engineers Malaysia (BEM). This is also one of the requirements for Malaysia to become a full member of the Washington Accord (WA), an international agreement to mutually recognize Bachelor degrees in the field of engineering.

OBE is an internationally practised educational model that focuses on the measurement of student outcomes and the implementation of corrective measures to overcome deficiencies in course delivery methods/assessment/student attitude, etc. Curriculum is designed with specific course outcomes (COs) to prepare the graduates to achieve the graduate attributes/programme outcomes (POs) at the point of graduation.

The POs are designed to produce graduates who are well-prepared to achieve the programme educational objectives (PEOs) 3 - 5 years after they have graduated. The PEOs and POs had been formulated in consultation with all major stakeholders (employers, alumni and students), to meet the demands of a challenging and globalized workplace.



PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN BIOPERUBATAN)							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (BIOMEDICAL STREAM)							
TAHUN SATU YEAR ONE							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
1	Kursus Universiti University Courses	GIG1003	Asas Pembudayaan Keusahawanan <i>Basic Entrepreneurship Enculturation</i>	2	GIG1017	Falsafah dan Cabaran Semasa <i>Philosophy and Current Affairs (Local Students ONLY)</i>	2
		GUL1001	UMLEADER 1: <i>Embrace@UMLEADER</i>	2	GIG1018	Citra Malaysia* <i>Malaysian Citra* (International Students ONLY)</i>	
					GLT10XX	Kursus Bahasa Universiti 1 <i>Language University Course 1</i>	2
						Kursus Ko-kurikulum <i>Co-curriculum Courses</i>	2
	Kursus Teras Fakulti Faculty Core Courses	KIX1001	Matematik Kejuruteraan 1 <i>Engineering Mathematics 1</i>	3	KIX1002	Matematik Kejuruteraan 2 <i>Engineering Mathematics 2</i>	3
	Kursus Teras Program Program Core Courses	KIB1009	Statistik untuk Kejuruteraan Bioperubatan <i>Statistics for Biomedical Engineering</i>	3	KIB1013	Makmal Kejuruteraan Bioperubatan 1 <i>Biomedical Engineering Lab 1</i>	2
		KIB1010	Anatomi dan Fisiologi <i>Anatomy and Physiology</i>	3	KIB1014	Sistem Rangka Otot Manusia <i>Human Musculoskeletal System</i>	2
		KIB1011	Statik dan Mekanik Bahan <i>Statics and Mechanics of Materials</i>	3	KIB1015	Dinamik <i>Dynamics</i>	3
		KIB1012	Teori Litar <i>Circuit Theory</i>	3	KIB1016	Alat Elektronik <i>Electronic Devices</i>	3
	Jumlah Kredit Total Credit			19			19

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN BIOPERUBATAN)							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (BIOMEDICAL STREAM)							
TAHUN DUA YEAR TWO							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
2	Kursus Universiti University Courses	GIG1019	Aspirasi Negara Bangsa <i>Malaysian Nation-State Aspiration (Local Students ONLY)</i>	2	GIG1016	Kursus Integriti dan Anti- Rasuah <i>Integrity and Anti- Corruption Course</i>	2
		GLT1049	Bahasa Melayu Komunikasi 2 <i>Malay Language Communication 2 (International Students ONLY)</i>		GLT2000	Bahasa Melayu Profesional Untuk Kerjaya & Organisasi <i>Professional Malay for Career and Organisation</i>	-
		GLT10XX	Kursus Bahasa Universiti 2 <i>Language University Course 2</i>	2			
		GUL2007	UMLEADER 2: <i>Ignite@UMLEADER</i>	2			
	Kursus Teras Fakulti Faculty Core Courses				KIX2005	Undang-Undang, Etika dan Kemampuan untuk Jurutera <i>Law, Ethics and Sustainability for Engineer</i>	3
	Kursus Teras Program Program Core Courses	KIB2009	Makmal Kejuruteraan Bioperubatan 2 <i>Biomedical Engineering Lab 2</i>	2	KIB2016	Mekanik Bendalir dan Proses Pengangkutan dalam Kejuruteraan Bioperubatan <i>Fluid Mechanics and Transport Processes in Biomedical Engineering</i>	3
		KIB2010	Kejuruteraan Bioperubatan, Penjagaan Kesihatan dan Etika <i>Biomedical Engineering, Healthcare and Ethics</i>	3	KIB2017	Elektromagnetisme dan Peranti Bioperubatan <i>Electromagnetism and Biomedical Devices</i>	3
		KIB2012	Reka Bentuk Kejuruteraan Bioperubatan 1 <i>Biomedical Engineering Design 1</i>	2	KIB2018	Biomekanik Gerakan Manusia <i>Biomechanics of Human Motion</i>	3
		KIB2013	Asas dalam Kejuruteraan Prostetik dan Ortotik <i>Fundamentals of Prosthetics and Orthotics Engineering</i>	3	KIB2019	Makmal Kejuruteraan Bioperubatan 3 <i>Biomedical Engineering Lab 3</i>	2
		KIB2014	Kaedah Perangkaan dan Pengaturcaraan <i>Numerical Methods and Programming</i>	2	KIB2020	Reka Bentuk Kejuruteraan Bioperubatan 2 <i>Biomedical Engineering Design 2</i>	2
		Jumlah Kredit Total Credit			18		18

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN BIOPERUBATAN)							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (BIOMEDICAL STREAM)							
TAHUN TIGA YEAR THREE							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
3	Kursus Teras Fakulti Faculty Core Courses	KIX2006	Ekonomi Kejuruteraan dan Pengurusan Projek Engineering Economics and Project Management	3			
	Kursus Teras Program Program Core Courses	KIB2015	Keselamatan dan Piawaian dalam Kejuruteraan Bioperubatan Safety and Standards in Biomedical Engineering	2	KIB3030	Projek Reka Bentuk Bersepadu Bioperubatan 2 Biomedical Integrated Design Project 2	3
		KIB3015	Kelestarian dan Amalan dalam Kejuruteraan Bioperubatan Sustainability and Practice in Biomedical Engineering	3			
		KIB3016	Pemprosesan Isyarat Bioperubatan Biomedical Signal Processing	3			
		KIB3018	Eksperimen dan Komputasi Biomekanik Experimental and Computational Biomechanics	3			
		KIB3019	Projek Reka Bentuk Bersepadu Bioperubatan 1 Biomedical Integrated Design Project 1	3			
	Kursus Elektif Program Program Elective Courses				KIB3021	Fotonik dalam Kejuruteraan Bioperubatan Photonics in Biomedical Engineering	3
					KIB3022	Sistem Kawalan Bioperubatan Biomedical Control System	3
					KIB3023	Mikrokomputer dan Sistem Digit Microcomputer and Digital System	3
					KIB3024	Elektronik Perubatan Medical Electronics	3
	Jumlah Kredit Total Credit				17		

SEMESTER KHAS <i>SPECIAL SEMESTER</i>				
Tahun Year	Komponen Component	SEMESTER KHAS <i>SPECIAL SEMESTER</i>		
		Kod Code	Kursus Courses	Kredit Credit
3	Kursus Teras Program <i>Program Core Courses</i>	KIB3031	Latihan Industri <i>Industrial Training</i>	5
	Jumlah Kredit <i>Total Credit</i>			5

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING							
TAHUN EMPAT YEAR FOUR							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
4	Kursus Teras Fakulti <i>Faculty Core Courses</i>	KIX2007	Jurutera Terimbuh Kecerdasan Buatan <i>Artificial Intelligence Augmented Engineer</i>	2			
	Kursus Teras Program <i>Program Core Courses</i>	KIB2011	Biobahan <i>Biomaterials</i>	3	KIB3017	Pengimejan Perubatan <i>Medical Imaging</i>	3
		KIB4020	Projek Pengijazahan (P1) <i>Final Year Project (P1)</i>		KIB4020	Projek Pengijazahan (P2) <i>Final Year Project (P2)</i>	6
	Kursus Elektif Program <i>Program Elective Courses</i>	KIB4014	Instrumentasi dan Pengukuran <i>Instrumentation and Measurement</i>	3	KIB3020	Reka Bentuk Keselamatan Elektrik bagi Peranti dan Sistem Perubatan <i>Electrical Safety Design of Medical Devices and System</i>	3
		KIB4015	Pemodelan Pengkomputeran dalam Kejuruteraan Bioperubatan <i>Computational Modelling in Biomedical engineering</i>	3	KIB4021	Kecerdasan Buatan dalam Kejuruteraan Bioperubatan <i>Artificial Intelligence in Biomedical Engineering</i>	3
		KIB4016	Teknologi Penjagaan Kesihatan dan Pengurusan Klinikal <i>Healthcare Technology and Clinical Management</i>	3	KIBXXXX	Kursus Elektif Terbuka 3 <i>Open Elective Course 3</i>	2
		KIBXXXX	Kursus Elektif Terbuka 1 <i>Open Elective Course 1</i>	2	KIBXXXX	Kursus Elektif Terbuka 4 <i>Open Elective Course 4</i>	2
		KIBXXXX	Kursus Elektif Terbuka 2 <i>Open Elective Course 2</i>	2			
	Jumlah Credit <i>Total Credit</i>			18			19
	Jumlah Keseluruhan <i>Total Credits Overall</i>						148

KURSUS ELEKTIF TERBUKA PROGRAM | PROGRAM OPEN ELECTIVE COURSES

Bil. No.	Kod Kursus Course Code	Tajuk Kursus Course Title	Kredit Credit
1	KIB4023	Biomekanik Sukan dan Pemulihan <i>Sports Biomechanics and Rehabilitation</i>	2
2	KIB4024	Teknologi Bantuan dalam Pemulihan <i>Assistive Technology in Rehabilitation</i>	2
3	KIB4025	Sokongan Peredaran Darah dan Pernafasan Mekanikal <i>Mechanical Circulatory and Respiratory Support</i>	2
4	KIB4026	Biomekatronik <i>Biomechatronics</i>	2
5	KIB4027	Analisis Corak dan Imej <i>Pattern and Image Analysis</i>	2
6	KIB4028	Teknologi Mikro untuk Kejuruteraan Bioperubatan <i>Micro Technologies for Biomedical Engineering</i>	2
7	KIB4029	Teknologi Maklumat Perubatan dan Teleperubatan <i>Medical IT and Telemedicine</i>	2
8	KIB4030	Prostetik Klinikal <i>Clinical Prosthetics</i>	2
9	KIB4031	Ortotik Klinikal <i>Clinical Orthotics</i>	2
10	KIB4032	Ortosis Tulang Belakang <i>Spinal Orthoses</i>	2
11	KIB4033	Kejuruteraan Tisu <i>Tissue Engineering</i>	2
12	KIB4034	Biobahan Lanjutan <i>Advanced Biomaterials</i>	2
13	KIB4035	Biokimia dan Teknik Analisis <i>Biochemistry and Analytical Techniques</i>	2
14	KIB4036	Pemindahan Kuasa Tanpa Wayar dalam Kejuruteraan Bioperubatan <i>Wireless Power Transfer in Biomedical Engineering</i>	2

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN PROSTETIK & ORTOTIK)							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (PROSTHETICS & ORTHOTICS)							
TAHUN SATU YEAR ONE							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
1	Kursus Universiti University Courses	GIG1003	Asas Pembudayaan Keusahawanan <i>Basic Entrepreneurship Enculturation</i>	2	GIG1017	Falsafah dan Cabaran Semasa <i>Philosophy and Current Affairs (Local Students ONLY)</i>	2
		GUL1001	UMLEADER 1: <i>Embrace@UMLEADER</i>	2	GIG1018	Citra Malaysia* <i>Malaysian Citra* (International Students ONLY)</i>	
					GLT10XX	Kursus Bahasa Universiti 1 <i>Language University Course 1</i>	2
						Kursus Ko-kurikulum <i>Co-curriculum Courses</i>	2
	Kursus Teras Fakulti Faculty Core Courses	KIX1001	Matematik Kejuruteraan 1 <i>Engineering Mathematics 1</i>	3	KIX1002	Matematik Kejuruteraan 2 <i>Engineering Mathematics 2</i>	3
	Kursus Teras Program Program Core Courses	KIB1009	Statistik untuk Kejuruteraan Bioperubatan <i>Statistics for Biomedical Engineering</i>	3	KIB1013	Makmal Kejuruteraan Bioperubatan 1 <i>Biomedical Engineering Lab 1</i>	2
		KIB1010	Anatomi dan Fisiologi <i>Anatomy and Physiology</i>	3	KIB1014	Sistem Rangka Otot Manusia <i>Human Musculoskeletal System</i>	2
		KIB1011	Statik dan Mekanik Bahan <i>Statics and Mechanics of Materials</i>	3	KIB1015	Dinamik <i>Dynamics</i>	3
		KIB1012	Teori Litar <i>Circuit Theory</i>	3	KIB1016	Alat Elektronik <i>Electronic Devices</i>	3
	Jumlah Kredit Total Credit			19			19

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN PROSTETIK & ORTOTIK)							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (PROSTHETICS & ORTHOTICS)							
TAHUN DUA YEAR TWO							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
2	Kursus Universiti University Courses	GIG1019	Aspirasi Negara Bangsa <i>Malaysian Nation-State Aspiration (Local Students ONLY)</i>	2	GIG1016	Kursus Integriti dan Anti- Rasuah <i>Integrity and Anti- Corruption Course</i>	2
		GLT1049	Bahasa Melayu Komunikasi 2 <i>Malay Language Communication 2 (International Students ONLY)</i>		GLT2000	Bahasa Melayu Profesional Untuk Kerjaya & Organisasi <i>Professional Malay for Career and Organisation</i>	-
		GLT10XX	Kursus Bahasa Universiti 2 <i>Language University Course 2</i>	2			
		GUL2007	UMLEADER 2: <i>Ignite@UMLEADER</i>	2			
	Kursus Teras Fakulti Faculty Core Courses				KIX2005	Undang-Undang, Etika dan Kemampuan untuk Jurutera <i>Law, Ethics and Sustainability for Engineer</i>	3
	Kursus Teras Program Program Core Courses	KIB2009	Makmal Kejuruteraan Bioperubatan 2 <i>Biomedical Engineering Lab 2</i>	2	KIB2016	Mekanik Bendalir dan Proses Pengangkutan dalam Kejuruteraan Bioperubatan <i>Fluid Mechanics and Transport Processes in Biomedical Engineering</i>	3
		KIB2010	Kejuruteraan Bioperubatan, Penjagaan Kesihatan dan Etika <i>Biomedical Engineering, Healthcare and Ethics</i>	3	KIB2017	Elektromagnetisme dan Peranti Bioperubatan <i>Electromagnetism and Biomedical Devices</i>	3
		KIB2012	Reka Bentuk Kejuruteraan Bioperubatan 1 <i>Biomedical Engineering Design 1</i>	2	KIB2018	Biomekanik Gerakan Manusia <i>Biomechanics of Human Motion</i>	3
		KIB2013	Asas dalam Kejuruteraan Prostetik dan Ortotik <i>Fundamentals of Prosthetics and Orthotics Engineering</i>	3	KIB2019	Makmal Kejuruteraan Bioperubatan 3 <i>Biomedical Engineering Lab 3</i>	2
		KIB2014	Kaedah Perangkaan dan Pengaturcaraan <i>Numerical Methods and Programming</i>	2	KIB2020	Reka Bentuk Kejuruteraan Bioperubatan 2 <i>Biomedical Engineering Design 2</i>	2
		Jumlah Kredit Total Credit		18			18

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN PROSTETIK & ORTOTIK)							
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (PROSTHETICS & ORTHOTICS)							
TAHUN TIGA YEAR THREE							
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2		
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit
3	Kursus Teras Fakulti Faculty Core Courses	KIX2006	Ekonomi Kejuruteraan dan Pengurusan Projek Engineering Economics and Project Management	3			
	Kursus Teras Program Program Core Courses	KIB2015	Keselamatan dan Piawaian dalam Kejuruteraan Bioperubatan Safety and Standards in Biomedical Engineering	3	KIB3030	Projek Reka Bentuk Bersepadu Bioperubatan 2 Biomedical Integrated Design Project 2	3
		KIB3015	Kelestarian dan Amalan dalam Kejuruteraan Bioperubatan Sustainability and Practice in Biomedical Engineering	3			
		KIB3016	Pemprosesan Isyarat Bioperubatan Biomedical Signal Processing	3			
		KIB3018	Eksperimen dan Komputasi Biomekanik Experimental and Computational Biomechanics	3			
		KIB3019	Projek Reka Bentuk Bersepadu Bioperubatan 1 Biomedical Integrated Design Project 1	2			
	Kursus Elektif Program Program Elective Courses				KIB3025	Biomekanik dalam Prostetik dan Ortotik Biomechanics in Prosthetics and Orthotics	3
					KIB3026	Prostetik Bawah Lutut Below Knee Prosthetics	3
					KIB3028	Prinsip Reka Bentuk Ortotik Anggota Bawah Principles of Lower Limb Orthotics Design	3
					KIB3029	Prostetik Atas Lutut Above Knee Prosthetics	3
	Jumlah Kredit Total Credit				17		

SEMESTER KHAS <i>SPECIAL SEMESTER</i>				
Tahun Year	Komponen Component	SEMESTER KHAS <i>SPECIAL SEMESTER</i>		
		Kod Code	Kursus Courses	Kredit Credit
3	Kursus Teras Program <i>Program Core Courses</i>	KIB3031	Latihan Industri <i>Industrial Training</i>	5
	Jumlah Kredit <i>Total Credit</i>			5

PELAN PENGAJIAN SARJANA MUDA KEJURUTERAAN BIOPERUBATAN (ALIRAN PROSTETIK & ORTOTIK)								
STUDY PLAN BACHELOR OF BIOMEDICAL ENGINEERING (PROSTHETICS & ORTHOTICS)								
TAHUN EMPAT YEAR FOUR								
Tahun Year	Komponen Component	SEMESTER 1			SEMESTER 2			
		Kod Code	Kursus Courses	Kredit Credit	Kod Code	Kursus Courses	Kredit Credit	
4	Kursus Teras Fakulti Faculty Core Courses	KIX2007	Jurutera Terimbuh Kecerdasan Buatan Artificial Intelligence Augmented Engineer	2				
	Kursus Teras Program Program Core Courses	KIB2011	Biobahan Biomaterials	3	KIB3017	Pengimejan Perubatan Medical Imaging	3	
		KIB4020	Projek Pengijazahan (P1) Final Year Project (P1)	2	KIB4020	Projek Pengijazahan (P2) Final Year Project (P2)	4	
	Kursus Elektif Program Program Elective Courses	KIB4017	Reka Bentuk Prostetik Industri Industrial Prosthetics Design	3	KIB3027	Prinsip Reka Bentuk Prostetik dan Ortotik Anggota Atas Principles of Upper Limb Prosthetics and Orthotics Design	3	
		KIB4018	Reka Bentuk Ortotik Industri Industrial Orthotics Design	3	KIB4022	Kejuruteraan Prostetik dan Ortotik Lanjutan Advanced Prosthetics and Orthotics Engineering	3	
		KIB4019	Pengurusan Amalan Prostetik dan Ortotik Practice Management in Prosthetic and Orthotics	3	KIBXXXX	Kursus Elektif Terbuka 3 Open Elective Course 3	2	
		KIBXXXX	Kursus Elektif Terbuka 1 Open Elective Course 1	2	KIBXXXX	Kursus Elektif Terbuka 4 Open Elective Course 4	2	
		KIBXXXX	Kursus Elektif Terbuka 2 Open Elective Course 2	2				
	Jumlah Kredit Total Credit				18			19
	Jumlah Keseluruhan Total Credits Overall						148	

KURSUS ELEKTIF TERBUKA PROGRAM | PROGRAM OPEN ELECTIVE COURSES

Bil. No.	Kod Kursus Course Code	Tajuk Kursus Course Title	Kredit Credit
1	KIB4023	Biomekanik Sukan dan Pemulihan <i>Sports Biomechanics and Rehabilitation</i>	2
2	KIB4024	Teknologi Bantuan dalam Pemulihan <i>Assistive Technology in Rehabilitation</i>	2
3	KIB4025	Sokongan Peredaran Darah dan Pernafasan Mekanikal <i>Mechanical Circulatory and Respiratory Support</i>	2
4	KIB4026	Biomekatronik <i>Biomechatronics</i>	2
5	KIB4027	Analisis Corak dan Imej <i>Pattern and Image Analysis</i>	2
6	KIB4028	Teknologi Mikro untuk Kejuruteraan Bioperubatan <i>Micro Technologies for Biomedical Engineering</i>	2
7	KIB4029	Teknologi Maklumat Perubatan dan Teleperubatan <i>Medical IT and Telemedicine</i>	2
8	KIB4030	Prostetik Klinikal <i>Clinical Prosthetics</i>	2
9	KIB4031	Ortotik Klinikal <i>Clinical Orthotics</i>	2
10	KIB4032	Ortosis Tulang Belakang <i>Spinal Orthoses</i>	2
11	KIB4033	Kejuruteraan Tisu <i>Tissue Engineering</i>	2
12	KIB4034	Biobahan Lanjutan <i>Advanced Biomaterials</i>	2
13	KIB4035	Biokimia dan Teknik Analisis <i>Biochemistry and Analytical Techniques</i>	2
14	KIB4036	Pemindahan Kuasa Tanpa Wayar dalam Kejuruteraan Bioperubatan <i>Wireless Power Transfer in Biomedical Engineering</i>	2

PEJABAT TIMBALAN DEKAN (IJAZAH DASAR)

OFFICE OF DEPUTY DEAN (UNDERGRADUATE STUDIES)

Pejabat Ijazah Dasar bertujuan untuk membantu pelajar, serta menguruskan hal-hal ehwal berkenaan pengurusan program Sarjana Muda Fakulti Kejuruteraan.

The Office of the Deputy Dean (Undergraduate Studies) aims to assist students, as well as managing the Faculty of Education's Undergraduate programs.

AHLI PEJABAT IJAZAH DASAR | MEMBERS OF THE OFFICE

Timbalan Dekan (Ijazah Dasar) <i>Deputy Dean (Undergraduate Studies)</i>	Associate Prof. Dr. Raja Ariffin Raja Ghazilla r_ariffin@um.edu.my	
Pembantu Tadbir <i>Administrative Assistant</i>	ELITE@UM Finance/UMAtlas	Mohd Rafizudin Rafiz m.rafizudin@um.edu.my
Penolong Pendaftar (Ijazah Dasar) <i>Assistant Registrar (Undergraduate Studies)</i>	Nur Syazana Mohammad Nizar syazananzar@um.edu.my +603-7967 7636	
Penolong Pegawai Tadbir <i>Assistant Administrative Officer</i>	Civil Engineering Curricular Review Accreditation	Nurhani Muhamad Zainalid nurhani@um.edu.my
Pembantu Tadbir Kanan <i>Senior Administrative Assistant</i>	Biomedical Engineering Pre-Exam Process	Noor Arhanani Hasan hananie_77@um.edu.my
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Pembantu Tadbir Kanan <i>Senior Administrative Assistant</i>	Chemical Engineering Timetable Awards	Munirah Kamaral Zaman munirah26@um.edu.my
Pembantu Tadbir Kanan <i>Senior Administrative Assistant</i>	Mechanical Engineering Admission Industrial Training	Norazirah Mohd Supi norazirah@um.edu.my

MAKLUMAT PERHUBUNGAN UTAMA PEJABAT

MAIN OFFICE CONTACT DETAILS

Emel : **fk_tdid@um.edu.my**
Email

No Tel :

Laman Web : **<https://engine.um.edu.my/>**
Website

MAKLUMAT AM PROGRAM SARJANA MUDA

UNDERGRADUATE PROGRAMME GENERAL INFO

TEMPOH PENGAJIAN

DURATION OF STUDY

Tempoh pengajian **minimum** dan **maksimum** pelajar mengikut program adalah seperti berikut.

The **minimum** and **maximum** duration of study for the respective programme as follow.

Program <i>Programme</i>	Tempoh Minimum <i>Minimum Duration of Study</i>	Tempoh Maksimum <i>Maximum Duration of Study</i>
1. Sarjana Muda Kejuruteraan Awam <i>Bachelor of Civil Engineering</i> 2. Sarjana Muda Kejuruteraan Bioperubatan <i>Bachelor of Biomedical Engineering</i> 3. Sarjana Muda Kejuruteraan Elektrik <i>Bachelor of Electrical Engineering</i> 4. Sarjana Muda Kejuruteraan Kimia <i>Bachelor of Chemical Engineering</i> 5. Sarjana Muda Kejuruteraan Mekanik <i>Bachelor of Mechanical Engineering</i>	8 Semester Biasa & 1 Semester Khas <i>8 Normal Semesters & 1 Special Semester</i>	12 Semester Biasa <i>12 Normal Semesters</i>

KURSUS UNIVERSITI

UNIVERSITY COURSES

Pelajar **WAJIB** menyempurnakan **kursus-kursus universiti** (setiap kursus membawa 2 jam kredit) berdasarkan penyempurnaan dan pelan pengajian program masing-masing.

Student are **REQUIRED** to complete **university courses** (each carries 2 credit) based on the respective study plan of the programme.

Pelajar Warganegara <i>Local Student</i>	Pelajar Antarabangsa <i>International Student</i>
- GIG1017 Falsafah dan Cabaran Semasa <i>Philosophy and Current Affairs</i> - GIG1019 Aspirasi Negara Bangsa <i>Malaysian Nation-State Aspiration</i> - GIG1003 Asas Pembudayaan Keusahawanan <i>Basic Entrepreneurship Enculturation</i> - GIG1016 Kursus Integriti dan Anti-Rasuah <i>Integrity and Anti-Corruption Course</i> - GLT2000 Bahasa Melayu Profesional Untuk Kerjaya & Organisasi (Tidak Berkredit) <i>Professional Malay for Career and Organisation (Non-Credit-Bearing)</i> - GLTXXXX Kursus Bahasa Inggeris Universiti 1/2 <i>Language University Courses 1/2</i> - GKXXXXX Kursus Ko-kurikulum <i>Co-curriculum Courses</i> - GUL1001 UMLEADER 1: Embrace@UMLEADER - GUL2007 UMLEADER 2: Ignite@UMLEADER	- GIG1018 Citra Malaysia <i>Malaysian Citra</i> - GIG1016 Kursus Integriti dan Anti-Rasuah <i>Integrity and Anti-Corruption Course</i> - GLT1049 Bahasa Melayu Komunikasi <i>Malay Language Communication</i> - GIG1003 Asas Pembudayaan Keusahawanan <i>Basic Entrepreneurship Enculturation</i> - GLTXXXX Kursus Bahasa Inggeris Universiti 1/2 <i>Language University Courses 1/2</i> - GKXXXXX Kursus Ko-kurikulum <i>Co-curriculum Courses</i> - GUL1001 UMLEADER 1: Embrace@UMLEADER - GUL2007 UMLEADER 2: Ignite@UMLEADER

KURSUS BAHASA INGGERIS UNIVERSITI LANGUAGE UNIVERSITY COURSES

Pelajar **WAJIB** menyempurnakan **DUA (2)** kursus Bahasa Inggeris. *Student are **REQUIRED** to complete **TWO (2)** English Language Communication courses (each carries 2 credit) according to the assigned pathway based on the results of the English Proficiency Test.*

Komunikasi (setiap kursus membawa 2 jam kredit) mengikut laluan yang telah ditetapkan berdasarkan pencapaian Ujian Kemahiran Bahasa Inggeris pelajar.

Semester Enrolment/ Path	PATH 1 Entry: A2/ B1 Exit: High B1/ Low B2	PATH 2 Entry: High B1/ Low B2 Exit: High B2/ Low C1	PATH 3 (Foreign Language) Entry: A1/ A2 Exit: B1
Semester 1 (if applicable) Placement test[#] <i>- for students without recognised English qualifications upon entry</i>	• CEFR A2 and B1 • MUET Band 2, 2.5, 3 & 3.5 • IELTS Band 4.0 – 5.0 • TOEFL Paper-Based Test (437 – 510) • TOEFL Computer-Based Test (123 – 180) • TOEFL Internet-Based Test (TBC) • TOEFL Essentials (Online) (Band 3 – 7.5) • PTE (Academic) – (10 – 41) • IGCSE/GCSE (English) (D, E, F, and G)	• CEFR B2 • MUET Band 4 & 4.5 • IELTS Band 5.5 – 6.0 • TOEFL Paper-Based Test (513 – 547) • TOEFL Computer-Based Test (183 – 210) • TOEFL Internet-Based Test (TBC) • TOEFL Essentials (Online) (Band 8 – 9.5) • PTE (Academic) – (42 – 57) • GCE A Level (English) (Minimum C) • IGCSE/GCSE (English) (C)	• CEFR C1 and C2 • MUET Band 5, 5+ & 6 • IELTS Band 6.5 – 9.0 • TOEFL Paper-Based Test (550 – 677) • TOEFL Computer-Based Test (213 – 300) • TOEFL Internet-Based Test (TBC) • TOEFL Essentials (Online) (Band 10 – 12) • PTE (Academic) (58 – 90) • GCE A Level (English) (A and B) • IGCSE/GCSE (English) (A and B)
Semester 2	Arts Stream GLT1050 Intermediate Reading and Writing for Social Sciences and Humanities	Arts Stream GLT1054 Advanced Reading and Writing for Social Sciences and Humanities	GLTxxxx Foreign Languages
	Science Stream GLT1051 Intermediate Reading and Writing for Science	Science Stream GLT1055 Advanced Reading and Writing for Science	
Semester 3	GLT1052 Intermediate Speaking Skills		GLTxxxx Foreign Languages

PETIKAN DARIPADA KAEDAH DAN PERATURAN

EXCERPTS FROM RULES AND REGULATIONS

PENDAFTARAN KURSUS

COURSE REGISTRATION

- Pelajar dikehendaki mengikuti program pengajiannya berdasarkan struktur program pengajian sepertimana yang ditentukan oleh Fakulti dan diluluskan oleh Senat.
 - Pendaftaran kursus hendaklah disempurnakan sebelum sesuatu semester bermula. Pelajar yang tidak menyempurnakan pendaftaran dalam tempoh yang ditetapkan tidak dibenarkan untuk mengikuti kursus berkenaan.
 - Pelajar bertanggungjawab menyemak dan memastikan kod kursus yang didaftar adalah betul. Selepas tamat tempoh yang ditetapkan, kursus yang didaftar adalah muktamad dan sebarang pindaan tidak dibenarkan
 - Jumlah kredit maksimum yang boleh didaftar oleh pelajar adalah seperti berikut:
- *A student is required to pursue his programme of study based on the structure of the programme of study as prescribed by the Faculty and approved by the Senate.*
 - *Registration for any course must be completed before the semester starts. Any student who does not complete his registration within the duration prescribed will not be allowed to pursue the course concerned.*
 - *A student is responsible to check and ensure that the course code that is registered for is correct. At the end of the prescribed period, the courses that are registered is final and no further changes are allowed.*
 - *The maximum number of credits which can be registered by a student is as follows:*

Status Pelajar <i>Student's Status</i>	Semester Biasa <i>Normal Semester</i>	Semester Khas <i>Special Semester</i>
Pelajar Biasa <i>Normal Student</i>	22 Kredit <i>22 Credits</i>	11 Kredit <i>11 Credits</i>
Pelajar di bawah Tempoh Pemerhatian Akademik (PEMERHATIAN) <i>Students under the Academic Probationary Period (PROBATION)</i>	15 Kredit <i>15 Credits</i>	9 Kredit <i>9 Credits</i>

KEHADIRAN

ATTENDANCE

- Pelajar **diwajibkan** menghadiri semua aktiviti pengajaran dan pembelajaran berkaitan dengan program pengajian yang diikutinya.
- Pelajar yang tidak menghadiri mana-mana aktiviti pengajaran dan pembelajaran dikehendaki memaklumkan alasan ketidakhadirannya kepada guru dengan segera dengan menyertakan dokumen sokongan yang berkaitan. Guru hendaklah memaklumkan kepada pelajar akibat ketidakhadiran dan bertanggungjawab menyimpan rekod pemakluman dan kehadiran kelas.
- *It is **compulsory** for a student to attend all teaching and learning activities related to his programme of study*
- *A student who does not attend any teaching and learning activities is required to inform the reason for his absence to the teacher immediately together with the relevant supporting documents. The teacher shall inform the student of the consequences of being absent and is responsible to keep the records of the notification and class attendance.*

SKIM PEMARKAHAN

GRADING SCHEME

Gred rasmi Universiti serta markah dan maksudnya adalah seperti berikut.

The official grade of the University and its meaning are as follow.

Markah Marks	Gred Grade	Mata Gred Grade Pointer	Maksud Meaning
90.00 - 100.00 80.00 - 89.99 75.00 - 79.99	A+ A A-	4.00 4.00 3.70	Amat Cemerlang <i>High Distinction</i> Cemerlang <i>Distinction</i> Cemerlang <i>Distinction</i>
70.00 - 74.99 65.00 - 69.99 60.00 - 64.99	B+ B B-	3.30 3.00 2.70	Kepujian <i>Good</i> Kepujian <i>Good</i> Kepujian <i>Good</i>
55.00 - 59.99 50.00 - 54.99	C+ C	2.30 2.00	Lulus <i>Pass</i> Lulus <i>Pass</i>
45.00 - 49.99 40.00 - 44.99 35.00 - 39.99 00.00 - 34.99	C- D+ D F	1.70 1.30 1.00 0.00	Gagal <i>Fail</i> Gagal <i>Fail</i> Gagal <i>Fail</i> Gagal <i>Fail</i>

- **Gred lulus** bagi semua kursus adalah **gred C**.
- Pelajar **hendaklah memperoleh PNG dan PNGK tidak kurang daripada 2.00** pada setiap semester sehingga tamat pengajiannya.
- *The **passing grade** for all courses is **grade C**.*
- *A student **shall obtain a GPA and CGPA of not less than 2.00** for each semester until the completion of his studies.*

RAYUAN TERHADAP KEPUTUSAN PEPERIKSAAN

APPEAL AGAINST EXAMINATION RESULTS

- Pelajar yang tidak berpuas hati dengan keputusan peperiksaannya termasuk komponen penilaian berterusan dan/atau peperiksaan akhir kursus boleh merayu untuk semakan semula keputusan peperiksaan. Rayuan hendaklah dibuat dalam tempoh tujuh (7) hari dari tarikh pengumuman rasmi keputusan peperiksaan.
- Satu (1) bayaran atas kadar yang ditetapkan hendaklah dikenakan bagi memproses rayuan untuk semakan semula keputusan peperiksaan. Bayaran itu tidak akan dikembalikan sama ada rayuan berjaya atau tidak.
- Borang rayuan tidak akan diterima sekiranya ia:
 - a) dikemukakan selepas tempoh yang dinyatakan dalam subperaturan (1) di atas;
 - b) tidak lengkap; atau
 - c) dikemukakan tanpa resit bayaran.
- *A student who is not satisfied with his examination results including the continuous assessment component and/or final examination of the course may appeal for a review of his examination results. The appeal shall be made within **seven (7) days** from the official date of announcement of his examination results.*
- *A payment based on the prescribed rate shall be made to process the application for examination results to be reviewed. The payment made is non-refundable regardless whether the appeal is successful or otherwise.*
- *The form for an appeal will not be accepted if it is:*
 - a) *submitted after the period stipulated in subregulation (1) above;*
 - b) *incomplete; or*
 - c) *submitted without the payment receipt*

ANUGERAH DEKAN

DEAN'S LIST AWARD

- Pelajar hendaklah memperolehi PNG dan **PNGK tidak kurang daripada 2.00** pada setiap semester sehingga tamat pengajiannya
- Pelajar yang mencapai PNG 3.70 dan ke atas bagi mana-mana semester dan memenuhi syarat berikut layak diberikan Anugerah Dekan bagi semester berkenaan.
 - a) Menyempurnakan sekurang-kurangnya 15 kredit dalam semester berkenaan yang mengandungi empat (4) kursus, tidak termasuk kursus yang kreditnya tidak diambil kira dalam pengiraan kredit kira.
 - b) Memperolehi tidak kurang daripada gred C bagi semua kursus yang disempurnakan dalam semester berkenaan; dan
 - c) Tidak pernah mengulang kursus yang gagal dan/atau mempertingkatkan gred kursus dalam semester berkenaan.
- *A student should strive to maintain a **CGPA of 2.00** and above each semester until the end of his/her studies.*
- *A student who obtains a GPA of 3.70 and above in any semester and fulfills the following conditions shall be awarded Dean's list Award for the semester.*
 - a) *has completed a minimum of 15 credits in the respective semester with a minimum of four (4) courses, not including courses which the credits are not taken into account in the calculation of credit counted.*
 - b) *has obtained not lower than a C grade for all the courses completed in the respective semester.*
 - c) *Has not repeat any of the course in which he has failed prior and/or improved his grade in the respective semester.*

GAGAL KELUAR DAN DITAMATKAN PENGAJIAN

FAILED AND TERMINATED FROM PROGRAMME OF STUDY

- Pelajar boleh gagal keluar dan ditamatkan daripada program pengajiannya sekiranya:
 - a) sedang berada dalam Tempoh Pemerhatian Akademik dan selepas itu mendapat PNG 1.30 atau kurang untuk dua (2) semester berturut-turut;
 - b) memperoleh PNG kurang daripada 2.00 untuk empat (4) semester berturut-turut;
 - c) memperoleh gred F sebanyak tiga (3) kali bagi kursus yang sama;
 - d) memperoleh PNGK kurang daripada 1.00 untuk dua (2) semester berturut-turut; atau
 - e) gagal menyempurnakan keperluan program pengajiannya dalam tempoh maksimum yang ditetapkan.
- *A candidate is termed as failed and terminated from the programme of study if:*
 - a) *is placed under an Academic Probationary Period and subsequently obtains a GPA of 1.30 or less for two (2) consecutive semesters;*
 - b) *obtains a GPA of less than 2.00 for four (4) consecutive semesters;*
 - c) *obtains a grade F three (3) times for the same course;*
 - d) *obtains a CGPA of less than 1.00 for two (2) consecutive semesters; or*
 - e) *fails to complete the requirements of his programme of study within the prescribed maximum period.*
- Apabila seseorang pelajar ditamatkan daripada program pengajiannya, notis penamatan hendaklah dihantar kepada pelajar oleh Universiti.
- *When a student has been terminated from his programme of study, the termination notice shall be sent to the student by the University*
- Mana-mana pelajar yang merayu dan diterima masuk semula akan ditamatkan pengajiannya sekiranya memperoleh PNG kurang daripada 2.00 pada semester di mana pelajar tersebut diterima masuk semula. Pelajar tersebut juga masih tertakluk kepada syarat-syarat seperti yang dinyatakan di dalam subperaturan (1) di atas.
- *Any student who appealed and is re-admitted after being terminated from his programme of study, shall have his study terminated if he obtains a GPA of less than 2.00 for the semester in which the student is re-admitted. The said student remains subjected to the conditions stated in the subregulation (1) above.*

PENGANUGERAHAN IJAZAH SARJANA MUDA LULUS DENGAN KEPUJIAN

CONFERMENT OF BACHELOR'S DEGREE WITH HONOURS

- Pelajar boleh dianugerahkan ijazah apabila telah memenuhi keperluan program pengajian seperti yang ditetapkan dalam Peraturan 46 di atas.
- Ijazah yang dianugerahkan adalah ijazah kepujian berdasarkan PNGK terakhir. Untuk melayakkan dianugerahkan ijazah Lulus Dengan Kepujian ini, **pelajar hendaklah mencapai PNGK terakhir tidak kurang daripada 2.00.**
- *A student may be awarded a degree once he has fulfilled the requirements of his programme of study as prescribed in Regulation 46 above.*
- *The degree awarded is an honours degree based on the final CGPA. In order to qualify to be awarded a Pass With Honours degree, the student shall obtain a final CGPA of not less than 2.00.*

PENGANUGERAHAN IJAZAH SARJANA MUDA LULUS DENGAN KEPUJIAN (DENGAN CEMERLANG)

CONFERMENT OF BACHELOR'S DEGREE WITH HONOURS (WITH DISTINCTION)

- Pelajar layak dianugerahkan ijazah Sarjana Muda Lulus Dengan Kepujian (Dengan Cemerlang) sekiranya:
 - a) mencapai PNGK terakhir 3.70 dan ke atas;
 - b) tidak pernah mendapat gred F bagi mana-mana kursus sepanjang tempoh program pengajiannya;
 - c) tidak pernah mengulang kursus yang gagal dan/atau mempertingkatkan gred kursus; dan
 - d) berjaya menamatkan program pengajian dalam tempoh minimum atau tempoh yang diluluskan.
- *A student is qualified to be awarded with Bachelor's Degree of a Pass With Honours (With Distinction) if he:*
 - a) *achieves a final CGPA of 3.70 and above;*
 - b) *has never obtained grade F for any course throughout the duration of his programme of study;*
 - c) *has never repeated any course where he failed and/or upgraded his course grade; and*
 - d) *has successfully completed his programme of study within the minimum duration or approved duration.*

Sila rujuk Pelan Pengajian Program serta **Kaedah-Kaedah & Peraturan-Peraturan Universiti Malaya (Ijazah Sarjana Muda) 2024**

*Kindly refer to your Programme Structure as well as the **Universiti Malaya (Bachelor's Degree) Rules and Regulations 2024***

KEMUDAHAN DAN PETA FAKULTI

FACILITIES AND FACULTY MAP



DIRECTORY BUILDING, FACULTY OF ENGINEERING UNIVERSITI MALAYA



Block A	Lecturer Rooms (Biomedical Engineering) / Biomedical Engineering Labs / Meeting Room		Block M	Level 1	FESEM Lab / Mechanical Engineering Lab
Block B	Lecture Hall 1 (DK1)			Level 2	CAREF Lab / Mechanical Engineering Labs
Block C	Level B	Mechanical Engineering Labs		Level 3	Mechanical Engineering Labs / Chemical Engineering Labs
	Level 1	Biomedical Engineering Labs / Green House (Outside)		Level 4	Mechanical Engineering Labs / Biomedical Engineering Labs / Electrical Engineering Labs
	Level 2	Biomedical Engineering Labs		Level 5	Postgraduate Rooms / Biomedical Engineering Labs / Electrical Engineering Labs
	Level 3	Biomedical Engineering Labs / Industrial Engineering Labs		Level 6	Library
	Level 4	Biomedical Engineering Labs / Industrial Engineering Labs	Block N	Civil Engineering Labs	
	Level 5	Industrial Engineering Labs / Mechanical Engineering Labs / Biomedical Engineering Labs		Block P	Civil Engineering Labs / Chemical Engineering Labs
Level 6	Industrial Engineering Labs		Block Q	Mechanical Engineering Labs	
Block D	Level 1	Idea Realization Cube (IR Cube) / Biomedical Engineering Labs	Block R	Mechanical Engineering Labs / Electrical Engineering Labs	
	Level 2	The Cube 1 (Red, Orange, Green, Purple)	Block T	Multiple Level Parking Block	
	Level 3	The Cube 2 (Red, Orange, Green) / BP204			
Block E	Postgraduate Rooms (Electrical Engineering) / Electrical Engineering Labs				
Block F	Civil Engineering Labs			Block U	Level 1
Blok G	Lecturer Rooms	Level 2	Classrooms (BK101 - BK105)		
	Civil Engineering Labs	Level 3	Classrooms (BK201 - BK205)		
	Postgraduate Rooms (Civil Engineering)	Level 4	Classroom (BK301) / Auditorium 1		
Block H	Canteen		Block V	Level 1	Lecturer Rooms (Chemical Engineering) / Chemical Engineering Labs / Meeting Room / Male & Female Prayer Room
Block J	Student Centre (Mechanical Engineering)			Level 2	Chemical Engineering Labs
	Level 2	Engineering Computer Center 1 (ECC1)		Level 3	Engineering Computer Center 4 (ECC4) / Engineering Computer Center 5 (ECC5) / The Purple Cube (meeting room) / Classrooms (BKK3 & BKK4)
	Level 3	Engineering Computer Center 2 (ECC2)	Block W	Chemical Engineering Labs / Postgraduate Rooms / Lecturer Rooms (Chemical Engineering) / Male & Female Prayer Room	
Block K	Student Workshop / Mechanical Engineering Labs			Block X	Mechanical Engineering Labs
	Male Prayer Room				
Block L	Level 1	Café / Gallery / E-Rock Shop (vending machine)	Block Y	Level 1	Lecture Hall 7/8/9 (DK7/DK8/DK9) / Auditorium 2 / The Cube 2 / Electrical Engineering Labs / Walkway to Faculty of Built Environment / Male & Female Prayer Room
	Level 2	Deputy Dean's (Development) Office / The Cube (meeting room) / Female Prayer Room / Infineon Corner (student study area) / Lecture Hall 4 (DK4) / Lecture Hall 5 (DK5)		Level 2	Lecturer Rooms (Electrical Engineering) / Electrical Engineering Labs / Meeting Room
	Level 3	Dean's Office / Faculty Manager Office / Finance Office / Deputy Dean's (Undergraduate Studies) Office / Deputy Dean's (Postgraduates Studies) Office		Level 3	Lecturer Rooms (Electrical Engineering) / Student Centre (Electrical Engineering) / Electrical Engineering Labs
	Level 4	Deputy Dean's (Research) Office / Deputy Dean's (Student Affairs) Office / Conference Room / Dean's Meeting Room / Lecture Hall 6 (DK6)		Level 4	Engineering Computer Center 6 (ECC6) / Engineering Computer Center 7 (ECC7) / Engineering Computer Center 8 (ECC8) / Electrical Engineering Labs
	Level 5	Lecturer Rooms / Meeting Room		Level 5	Electrical Engineering Labs
	Level 6	Head of Department's Office / Lecturer Rooms			
	Level 7	Lecturer Rooms			
	Level 8	Lecturer Rooms			