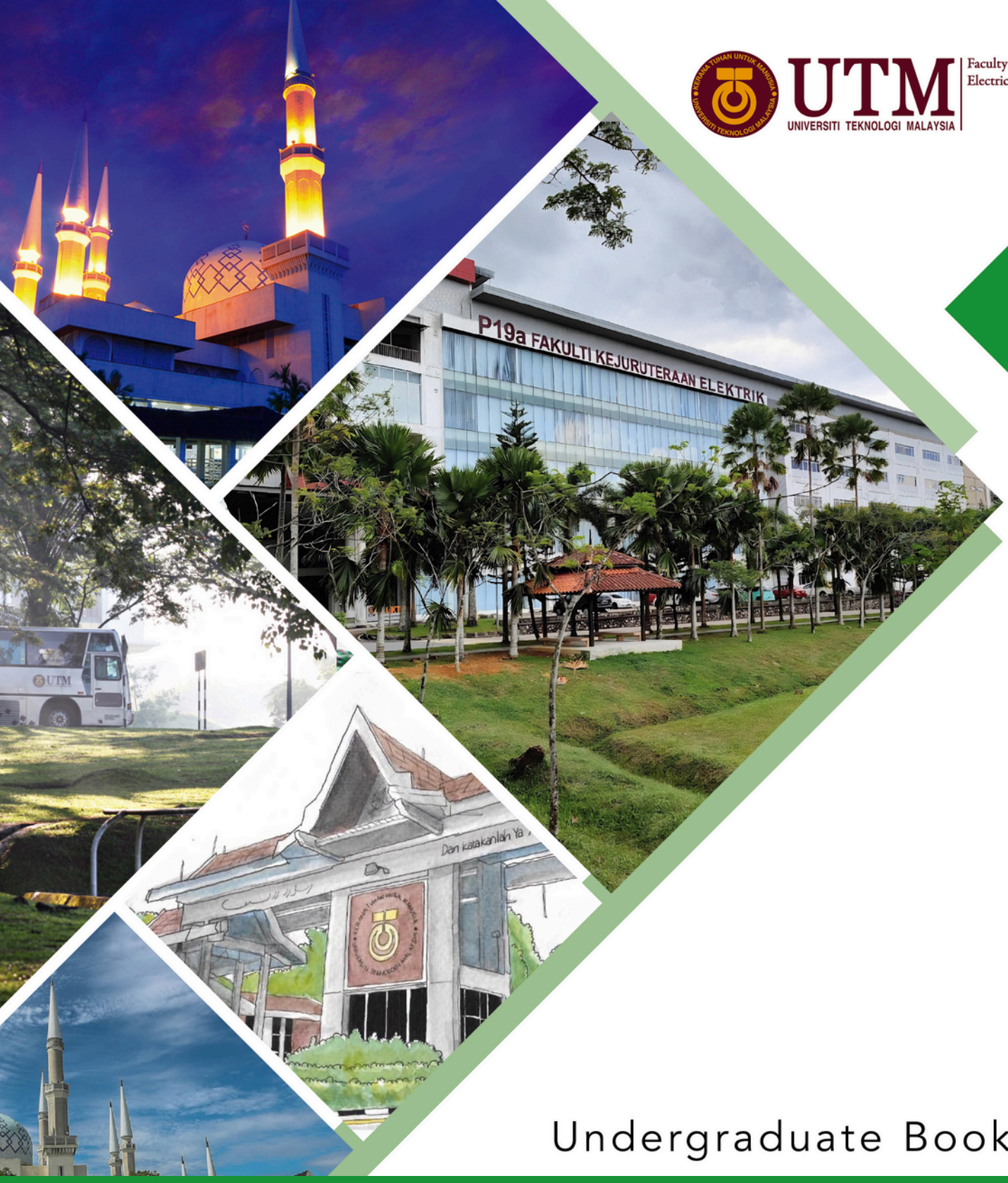


UTM UNIVERSITI TEKNOLOGI MALAYSIA
Faculty of Electrical Engineering

Undergraduate Booklet

BACHELOR OF BIOMEDICAL ENGINEERING WITH HONOURS (SKEBH) - 2023/2024

Rev 4.0

www.fke.utm.my

Student Profile

BACHELOR OF BIOMEDICAL ENGINEERING WITH HONOURS

Name	
Matric Number	
Phone Number	
Email	
Academic Advisor	

"If you set yourself up for success, everything is possible"

PROGRAMME GUIDELINES

The University adopts the semester system and each academic year is divided into two (2) normal semesters, namely Semester I and Semester II, and a short semester at the end of Semester II. The new intake of undergraduate students is normally made during Semester I of an academic year. The minimum duration of the programme is four (4) years which is equivalent to 8 semesters.

All courses offered by the faculty have credits, except for courses which are approved by the University Senate. One (1) credit is equivalent to 14 hours of lectures or 30 hours of practical sessions (studio/project), in a semester. The total number of credits for the Bachelor of Biomedical Engineering with Honours (SKEB) programme is 137.

All students' performance and achievements are assessed formally. Each course is generally assessed based on the coursework, which constitutes not less than 50% of the overall marks, and a final exam paper, which contributes another 50%. Coursework can be in the form of homework, assignments, quizzes, tests and presentations. The final examination is conducted at the end of each academic semester. Students' performance in a course is indicated by the letter grade with the passing grade of 'D+'. Students who failed any of the courses (grade 'D' and below) are required to repeat the course during the subsquent semesters or whenever it is offered. Students may improve the grade of any course graded with 'B-' or lower, with a maximum allowance of 15 credits. Subject to the Faculty and University's Academic Regulation, students may withdraw from a course within the stipulated period. Other information on academic rules and regulations can be retrieved from the UTM website (UTM Academic Regulations).

A student must pass all courses specified in his/her programme of study and fulfil all the requirements specified for his/her programme of study set by the Faculty and University in order to be awarded with a Bachelor degree.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

After gaining 3 to 5 years of work experience, our graduates should have developed into professionals who demonstrate the following competencies :

PEO	PEO STATEMENTS
PEO1	Become Biomedical Engineers who are competent, innovative, and productive in addressing stakeholders' needs.
PEO2	Grow professionally with proficient soft skills.
PEO3	Demonstrate high standards of ethical conduct, positive attitude, and societal responsibilities.

PROGRAMME LEARNING OUTCOMES (PLO)

PLO	PLO STATEMENTS
PLO1 (Engineering Knowledge)	Mengaplikasi pengetahuan matematik, sains dan kejuruteraan elektrik untuk penyelesaian masalah kejuruteraan yang kompleks *Apply knowledge of mathematics, science, and electrical engineering to the solution of complex engineering problems.*
PLO2 (Problem Analysis)	Mengenalpasti, merumus dan menjalankan kajian literatur untuk menganalisa masalah kejuruteraan yang kompleks menggunakan pengetahuan kejuruteraan. *Identify, formulate, and conduct research literature to analyse complex engineering problems using engineering knowledge.*
PLO3 (Designs)	Mereka bentuk penyelesaian untuk masalah kejuruteraan yang kompleks dan mereka bentuk sistem dan proses yang memenuhi keperluan spesifik dengan pertimbangan yang sesuai untuk kesihatan dan keselamatan awam, budaya, masyarakat dan alam sekitar. *Design solutions for complex engineering problems and design systems and processes that meet specified needs with appropriate consideration for public health and safety, culture, society, and environment.*
PLO4 (Investigation)	Melakukan analisis berasaskan penyelidikan, menjalankan eksperimen dan mentafsir data untuk masalah kejuruteraan yang kompleks. *Perform research-based analysis, conduct experiments and interpret data for complex engineering problems.*
PLO5 (Modern Tool Usage)	Mengaplikasi amalan kejuruteraan dan menggunakan peralatan kejuruteraan dan IT yang moden untuk masalah kejuruteraan yang kompleks dengan pemahaman tentang batasan teknologi. *Apply engineering practice and use modern engineering, and IT tools for complex engineering problems with an understanding of the limitations of the technology.*
PLO6 (Engineer & Society)	Memahami kesan isu global dan kontemporari, peranan jurutera ke atas masyarakat, termasuk isu kesihatan, keselamatan, perundangan dan budaya, serta tanggungjawab yang berkaitan dengan amalan kejuruteraan profesional dan masalah kejuruteraan yang kompleks. *Comprehend the impact of global and contemporary issues, the role of engineers on society, including health, safety, legal and cultural issues, and the consequent responsibilities relevant to professional engineering practices and complex engineering problems.*

PROGRAMME LEARNING OUTCOMES (PLO)

PLO	PLO STATEMENTS
PLO7 (Environment & Sustainability)	Memahami dan menilai kemampanan dan impak kerja kejuruteraan profesional dalam penyelesaian masalah kejuruteraan yang kompleks dalam konteks masyarakat dan alam sekitar. *Comprehend and evaluate the sustainability and impact of professional engineering work in the solutions of complex engineering problems in societal and environmental contexts*
PLO8 (Ethics)	Menguasai dan melaksanakan tanggungjawab secara profesional dan beretika dalam amalan kejuruteraan profesional. *Grasp and execute responsibility professionally and ethically in professional engineering practices.*
PLO9 (Individual & Teamwork)	Berfungsi secara berkesan sebagai individu, dan sebagai ahli atau ketua dalam pelbagai kumpulan. *Function effectively as an individual, and as a member or leader in diverse teams.*
PLO10 (Communication)	Menyatakan idea, berkomunikasi secara berkesan, secara bertulis dan lisan, mengenai aktiviti kejuruteraan yang kompleks dengan komuniti kejuruteraan dan dengan keseluruhan masyarakat. *Articulate ideas, communicate effectively, in writing and verbally, on complex engineering activities with the engineering community and with society at large.*
PLO11 (Project Management)	Menunjukkan pengetahuan dan pemahaman tentang prinsip kejuruteraan dan pengurusan, dan membuat keputusan secara ekonomik untuk mengurus projek dalam persekitaran pelbagai disiplin. *Demonstrate knowledge and understanding of engineering and management principles, and economic decision-making to manage projects in multidisciplinary environments.*
PLO12 (Life-long Learning)	Mengenalpasti keperluan dan mempunyai persediaan serta keupayaan untuk melibatkan diri dalam pembelajarankendiri dan pembelajaran sepanjang hayat merangkumi konteks perubahan teknologi yang luas. *Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.*

PROFESSIONAL SKILLS CERTIFICATE (PSC)

UTM has designed its own UTM Professional Skills Certificate (UTM PSC) programme managed by UTM Institute for Life Ready Graduate (UTM iLeague) to enhance the knowledge and skills of UTM students. It provides students with value-added courses so that they will have a competitive-edge skills when they enter the employment market. Students will receive a Certificate of UTM Professional Skills Programme and the courses taken will appear in the student transcript. Students are required to undertake and must pass five (5) PSC courses as listed as follows in order to graduate:

COMPULSORY COURSES (ALL THREE (3) COURSES)

NO	COURSES	CODE
1	Design Thinking for Entrepreneur	GLRB0010
2	Talent and Competency Management	GLRM0010
3	English Communication Skills for Graduating Students	GLRL0010

ELECTIVE COURSES (ANY TWO (2) OF THESE COURSES

NO	COURSES	CODE
1	Data Analytics for Organization	GLRT0010
2	Professional Ethics and Integrity	GLRM0020
3	Construction Management (Mechanical & Electrical)	GLRT0020
4	OSHE for Engineering Industry and Laboratory	GLRT0030
5	Quality Management for Built Environment and Engineering Professionals	GLRT0050
6	Safety and Health Officer Introductory Course	GLRT0060

PRISMS

PROGRAM INTEGRASI SARJANA MUDA–SARJANA

(4 YEARS BACHELOR DEGREE + 1 YEAR MASTER DEGREE)

PRISMS is a newly introduced programme that integrates undergraduate high-level elective SKEB 5**3 courses with the core courses of the Master degree programme. Under PRISMS, students have an opportunity to complete and receive two degrees which are Bachelor degree and Master degree within 5 years (4+1).

REQUIREMENT

Students who have completed third year second semester courses with a cumulative grade point average (CGPA) of 3.3 and above are eligible to apply for PRISMS. Students can apply using the PRISMS application form and must be recommended by the Academic Advisor, approved by the Program Director, and certified by the Dean of Faculty. Once the application to join PRISMS is approved, students can register for the SE**5**3 courses during the course pre-registration or compulsory registration period.

CREDIT TRANSFER

Students must obtain grade B and above of the high-level elective SKEB 5**3 courses for vertical credit transfer into the Master degree program that students plan to enroll. Maximum unit allowed for the credit transfer is twelve (12) credits.

For more information PRISMS, kindly visit FKE website.

BACHELOR OF BIOMEDICAL ENGINEERING WITH HONOURS (SKEBH)

Biomedical engineering and health sciences is a rapidly growing multidisciplinary field which combines engineering with the principle of biology and medicine to solve problems related to healthcare and the development of medical technologies. It consists a wide range of topics including anatomy and physiology, clinical engineering, rehabilitation, biomedical imaging, biomedical signal processing, biomechanics, bio-material, robotics, bio-informatics, tissue engineering, computer programming, electronics and other related topics. It is an excellent choice for individuals who are interested in using their technical skills to make a positive impact on healthcare and human health.

PROGRAMME SPECIFICATION

The Bachelor of Biomedical Engineering with Honours is offered either on a full-time or part time basis. The full-time programme is offered only at the UTM Main Campus in Johor Bahru, while the part-time programme is offered at UTM Kuala Lumpur. The duration of study for the full-time programme is subject to the student's entry qualifications and lasts between four (4) years to a maximum of six (6) years. The programme is offered on full-time basis and is based on a 2-Semester per academic session. Generally, students are expected to undertake courses equivalent to between fifteen (15) to eighteen (18) credit hours per semester. Assessment is based on courseworks and final examinations given throughout the semester.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO	EDUCATIONAL OBJECTIVE
PEO1	Become Biomedical Engineers who are competent, innovative, and productive in addressing stakeholders' needs.
PEO2	Grow professionally with proficient soft skills.
PEO3	Demonstrate high standards of ethical conduct, positive attitude, andsocietal responsibilities.

PROGRAMME GENERAL INFORMATION

Awarding Institution	Universiti Teknologi Malaysia
Teaching Institution	Universiti Teknologi Malaysia
Programme Name	Bachelor of Biomedical Engineering with Honours
Final Award	Bachelor of Biomedical Engineering with Honours
Programme Code	SKEB
Professional or Statutory Body of Accreditation	Board of Engineers Malaysia (BEM)
Language(s) of Instruction	English and Bahasa Melayu
Mode of Study	Conventional
Mode of Operation	Self-govern
Study Scheme	Full Time
Study Duration	Minimum 4 years, Maximum 6 years

Type of Sem	**No of Semester**		**No of Weeks / Semester**	
	Full Time	**Part Time**	**Full Time**	**Part Time**
Normal	8	-	18	-
Short	4	-	10	-

COURSE CLASSIFICATION

No	Classification	Credit Hour	Percentage
1	University General Course	16	11.7%
2	Mathematics	15	10.9%
3	Programme Core	94	68.6%
4	Programme Electives	9	6.57%
5	Free Electives	3	2.19%
TOTAL		**137**	**100%**
A	**ENGINEERING COURSE** • Lecture/Project/ Lab • Workshop/Field/Design • Industrial Training • Final Year Project	 92 - 5 6	
TOTAL CREDIT HOURS FOR PART A		**103**	**75.18%**
B	**NON-ENGINEERING** • Applied Sciences/ Mathematic / Com • Management/Law/Humanities/Ethics/Economy • Language • Co-Curriculum • Free Electives	 15 8 6 2 3	
TOTAL CREDIT HOURS FOR PART B		**34**	**24.82%**
TOTAL CREDIT HOURS FOR PART A & B		**137**	**100%**
TOTAL CREDIT HOURS FOR GRADUATE		**137**	

SKEBH COURSE MENU (INTAKE OCT 2023)

SKEBH COURSE MENU
(YEAR 1)

YEAR 1 (SEM 1) : 2023/24-1			
Code	**Courses**	**Credit**	**Pre-req**
ULRS 1032	Integrity and Anti-Corruption	2	
SKEB 1012	Introduction to Biomedical Engineering	2	
SKEB 1513	Human Anatomy and Physiology	3	
SKEE 1013	Electrical Circuit Analysis	3	
SSCE 1693	Engineering Mathematics I	3	
SKEE 1233	Digital Electronic Systems	3	
	TOTAL CREDIT HOURS	**16**	

YEAR 1 (SEM 2) : 2023/24-2			
Code	**Courses**	**Credit**	**Pre-req**
ULRS 1182	Appeciation of Ethics and Civilizations (for local students)	2	
UHLM 1012	Malay Language for Communication 2 (for international students)		
SKEB 2513	Basic Rehabilitation	3	SKEB 1513
SKEE 1103	C Programming for Engineers	3	
SSCE 1793	Differential Equations	3	SSCE 1693 (Min Grade D)
SKEB 1313	Statics and Dynamics	3	
SKEE 1073	Electronic Devices and Circuits	3	SKEE 1013
	TOTAL CREDIT HOURS	**17**	

SKEBH COURSE MENU
(YEAR 2)

YEAR 2 (SEM 3) : 2024/25-1			
Code	**Courses**	**Credit**	**Pre-req**
SKEE 2073	Signals and Systems	3	
SKEB 3323	Solid Mechanics	3	SKEB 1313
SSCE 1993	Engineering Mathematics II	3	SSCE 1693 (Min Grade D)
SKEE 3223	Microprocessor	3	SKEE 1233
SKEE 2752	Electronic Design Laboratory	2	
SSCE 2193	Engineering Statistics	3	
	TOTAL CREDIT HOURS	**17**	

YEAR 2 (SEM 4) : 2024/25-2			
Code	**Courses**	**Credit**	**Pre-req**
ULRS 1182	Appreciation of Ethics and Civilization (for international students)	2	
ULRS 1022	Philosophy and Current Issues (for local & international students)		
ULRF 2**2	Elective of Co-Curicular Service Learning	2	
UHLB 2122	Professional Communication Skills 1	2	
SSCE 2393	Numerical Methods	3	
SKEE 2523	Electromagnetic Field Theory	3	SSCE 1993
SKEE 3263	Electronic Systems	3	SKEE 1073
SKEB 3313	Biomedical Materials	3	
	TOTAL CREDIT HOURS	**18**	

SKEBH COURSE MENU
(YEAR 3)

YEAR 3 (SEM 5) : 2025/26-1			
Code	**Courses**	**Credit**	**Pre-req**
UHL* 1112	Foreign Language for Communication	2	
UHLB 3132	Professional Communication Skills II	2	
SKEE 3133	System Modelling and Analysis	3	SKEE 2073
SKEB 3423	Clinical Engineering I	3	
SKEB 3533	Biomedical Communications	3	SKEE 2073
SKEB 3712	Specialized Biomedical Laboratory	2	
SKEB 3023	Biomedical Imaging	3	
	TOTAL CREDIT HOURS	**18**	

YEAR 3 (SEM 6) : 2025/26-2			
Code	**Courses**	**Credit**	**Pre-req**
ULRS 3032	Entrepreneurship and Innovation	2	
SKEB 4023	Biomedical Signal Processing	3	SKEE 2073
SKEB 3433	Clinical Engineering II	3	SKEB 3423
SKEB 3043	Instrumentation and Measurement in Biomedical	3	SKEE 3263
SKEE 3733	Integrated Design Project	3	
S*** ***3	Free Electives	3	
	TOTAL CREDIT HOURS	**17**	

YEAR 3 (SHORT SEMESTER) : 2025/26-3			
SKEE 3925	Industrial Training	5	Credit earned >=86 & SKEB 3433
	TOTAL CREDIT HOURS	**5**	

SKEBH COURSE MENU
(YEAR 4)

YEAR 4 (SEM 7) : 2026/27-1			
Code	**Courses**	**Credit**	**Pre-req**
SKEE 4542	Engineering Management Principles	2	
SKEE 4813	Methodology of Research and Development	3	
SKEB 4413	Biochemistry for Biomedical Engineers	3	
SKE*5**3/4**3	Field Elective 1 /PRISMS Elective 1	3	
SKE*5**3/4**3	Field Elective 2/ PRISM Elective 2	3	
SKE*5**3/4**3	Field Elective 3/ PRISM Elective 3/ Faculty FreeElective	3	
	TOTAL CREDIT HOURS	**17**	

YEAR 4 (SEM 8) : 2026/27-2			
Code	**Courses**	**Credit**	**Pre-req**
SKEE 4826	Final Year Project	6	SKEE 4813
SKEB 4033	Professional Biomedical Engineering Practice	3	
SKEB 4083	Biomedical Artificial Intelligence	3	SKEE 2073
	TOTAL CREDIT HOURS	**12**	

SKEBH COURSE MENU (ELECTIVES)

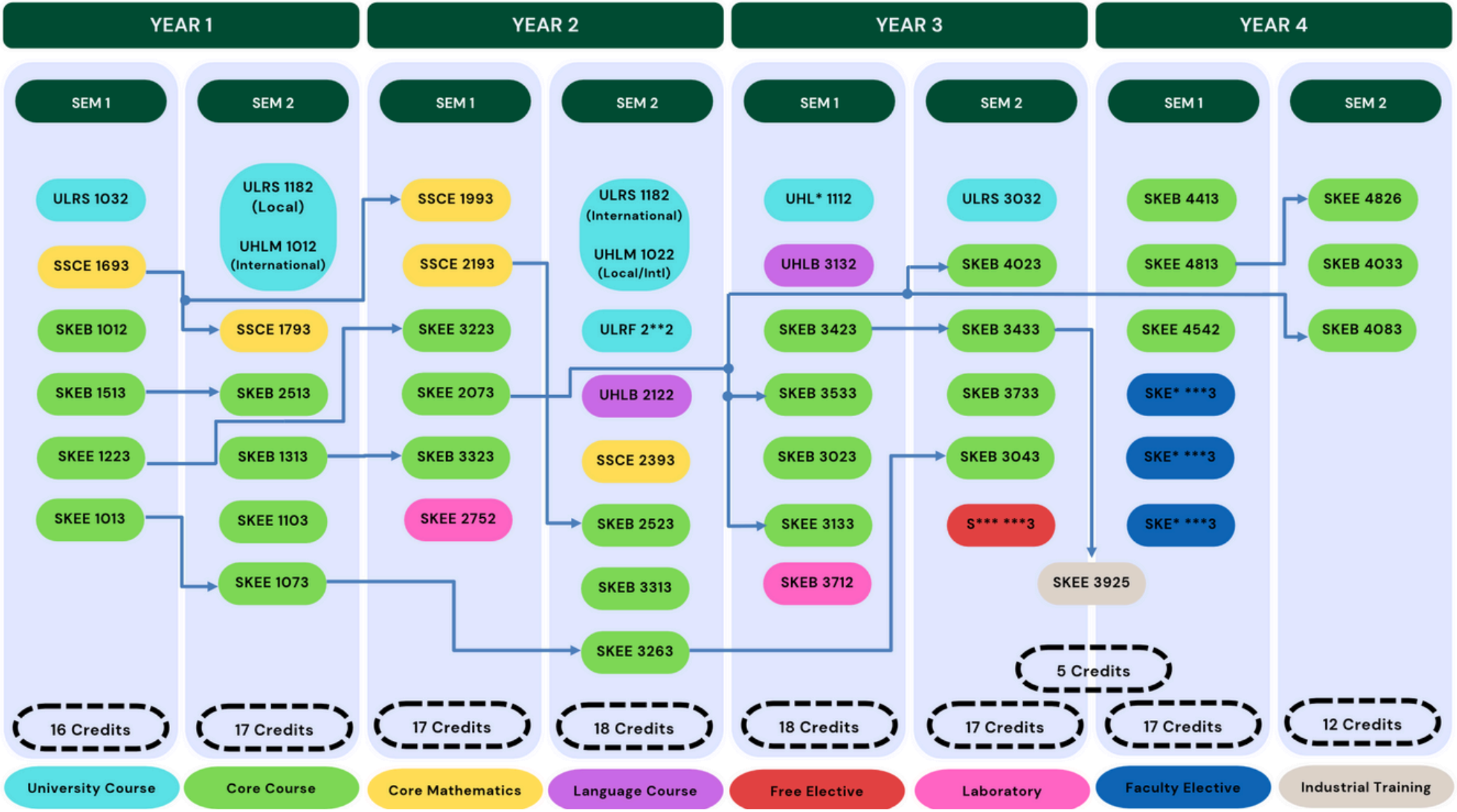
Code	Courses	Credit	Pre-req
SKEB 4043	Biomedical Image Processing	3	SKEB 3023
SKEB 4323	Biomedical Devices	3	
SKEB 4343	Cell and Tissue Engineering	3	
SKEB 4433	Biomedical Instrumentation Management	3	
SKEB 4513	Rehabilitation Engineering	3	
SKEB 4113	Bio-Fabrication	3	
SKEB 4123	Bio-Material Characterization and Analysis	3	SKEB 3313
SKEB 4133	Machining and Testing for Biomedical	3	
SKEB 4163	Object Oriented Programming for Engineers	3	SKEE 1103
SKEL 4543	Biosystem Modelling	3	SKEB 1513
SKEL 4563	Biosensor and Transducers	3	SKEE 2133
SKET 3583	Digital Communication Systems	3	SKEB 3533
SKET 4533	Wireless Communication Systems	3	
SKEL 3613	Semiconductor Material Engineering	3	SKEE 1073
SKEL 4213	Software Engineering	3	SKEE 1103
SKEL 4343	Information Security	3	SKEE 1233
SKEB 3503	Physiology & Introduction to Medicine	3	

AWARD REQUIREMENTS

To graduate, students must:

- Attain a total of not less than 137 credit hours (SKEB)
- Attain a minimum CGPA of 2.0.
- Complete Professional Skills Certificates (PSC).

CURRICULUM FLOWCHART (INTAKE OCT)



SKEBH COURSE MENU (INTAKE MARCH 2024)

SKEBH COURSE MENU
(YEAR 1)

YEAR 1 (SEM 1) : 2023/24-2			
Code	**Courses**	**Credit**	**Pre-req**
SKEE 1103	C Programing for Engineers	3	
SKEB 1313	Statics and Dynamics	3	
SKEB 1513	Human Anatomy and Physiology	3	
SKEE 1013	Electrical Circuit Analysis	3	
SSCE 1693	Engineering Mathematics I	3	
UHMS 1182	Appreciation of Ethics and Civilizations (for Local Students)	2	
UHLM 1012	Malay Language for Communication 2 (for International Students)		
	TOTAL CREDIT HOURS	**17**	

YEAR 1 (SEM 2) : 2024/25-1			
Code	**Courses**	**Credit**	**Pre-req**
SKEB 1012	Introduction to Biomedical Engineering	2	
SKEB 3323	Solid Mechanics	3	SKEB 1313
SKEE 1233	Digital Electronic Systems	3	
SKEE 1073	Electronic Devices and Circuits	3	SKEE 1013
SSCE 1993	Engineering Mathematics II	3	SSCE 1693 (Min D)
ULRS 1032	Integrity and Anti Corruption	2	
	TOTAL CREDIT HOURS	**16**	

SKEBH COURSE MENU
(YEAR 2)

YEAR 2 (SEM 3) : 2024/25-2			
Code	**Courses**	**Credit**	**Pre-req**
SKEB 2513	Basic Rehabilitation	3	SKEB 1513
SKEE 3263	Electronic Systems	3	SKEE 1073
SKEE 2523	Electromagnetic Field Theory	3	SSCE 1993
SSCE 2393	Numerical Methods	3	
SKEE 2752	Electronic Design Laboratory	2	
UHLB 2122	Professional Communication Skills 1	2	
ULRS 1182	Appreciation of Ethics and Civilization (for international students)	2	
ULRS 1022	Philosophy and Current Issues (for local & international students)		
	TOTAL CREDIT HOURS	**18**	

YEAR 2 (SEM 4) : 2025/26-1			
Code	**Courses**	**Credit**	**Pre-req**
SKEB 3423	Clinical Engineering I	3	
ULRF 2**2	Elective of Co-Curricular Service Learning	2	
SSCE 1793	Differential Equations	3	SSCE 1693
SKEE 2073	Signal and Systems	3	
SSCE 2193	Engineering Statistics	3	
UHL* 1112	Foreign Languaage for Communications	2	
UHLB 3123	Professional Communication Skills II	2	
	TOTAL CREDIT HOURS	**18**	

SKEBH COURSE MENU (YEAR 3)

YEAR 3 (SEM 5) : 2025/26-2			
Code	**Courses**	**Credit**	**Pre-req**
SKEB 3433	Clinical Engineering II	3	SKEB 3423
SKEB 3733	Integrated Design Project	3	
SKEB 4023	Biomedical Signal Processing	3	SKEE 2073
SKEB 3043	Instrumentation and Measurement in Biomedical	3	SKEE 3263
ULRS 3023	Entrepreneurship & Innovation	2	
S*** ###3	Free Elective	3	
	TOTAL CREDIT HOURS	**17**	

YEAR 3 (SHORT SEMESTER) : 2025/26-3			
SKEE 3925	Industrial Training	5	Credit earned >=86 credits & SKEB 3433
	TOTAL CREDIT HOURS	**5**	

YEAR 3 (SEM 6) : 2026/27-1			
Code	**Courses**	**Credit**	**Pre-req**
SKEB 3023	Biomedical Imaging	3	
SKEB 3533	Biomedical Communications	3	SKEE 2073
SKEB 3712	Specialized Biomedical Laboratory	2	
SKEE 3223	Microprocessor	3	SKEE 1233
SKEE 3133	System Modelling and Analysis	3	SKEE 2073
SKEB 4813	Methodology of Research and Development	3	
	TOTAL CREDIT HOURS	**17**	

SKEBH COURSE MENU
(YEAR 4)

YEAR 4 (SEM 7) : 2026/27-2			
Code	**Courses**	**Credit**	**Pre-req**
SKEE 4542	Engineering Management Principles	2	
SKEB 3313	Biomedical Materials	3	
SKEB 4413	Biochemistry for Biomedical Engineers	3	
SKE*5**3/4**3	Field Elective 1 /PRISMS Elective 1	3	
SKE*5**3/4**3	Field Elective 2/ PRISM Elective 2	3	
SKE*5**3/4**3	Field Elective 3/ PRISM Elective 3/ Faculty FreeElective	3	
	TOTAL CREDIT HOURS	**17**	

YEAR 4 (SEM 8) : 2027/28-1			
Code	**Courses**	**Credit**	**Pre-req**
SKEE 4826	Final Year Project	6	SKEE 4813
SKEB 4033	Professional Biomedical Engineering Practice	3	
SKEB 4083	Biomedical Artificial Intelligence	3	SKEE 2073
	TOTAL CREDIT HOURS	**12**	

SKEBH COURSE MENU (ELECTIVES)

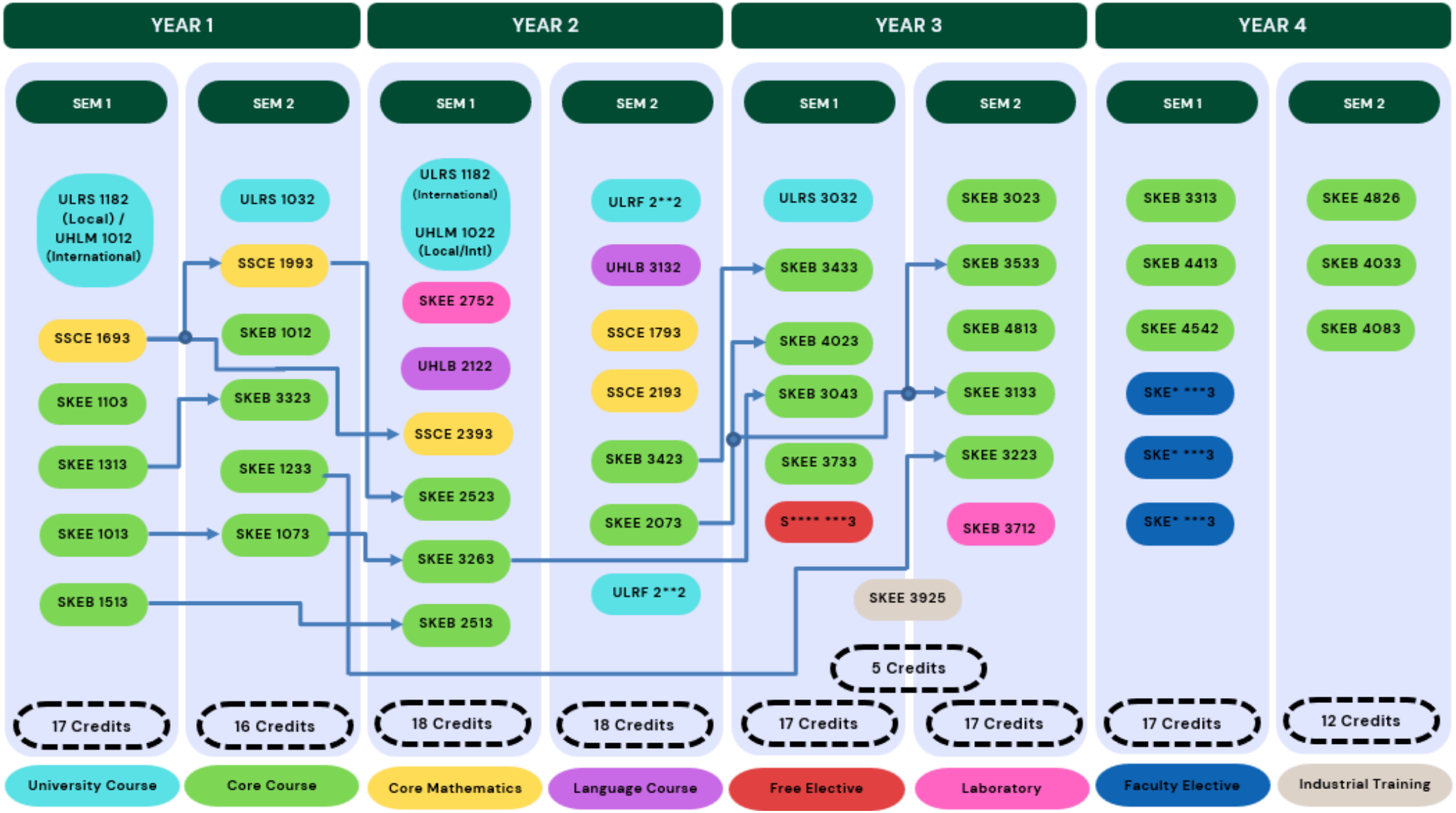
Code	Courses	Credit	Pre-req
SKEB 4043	Biomedical Image Processing	3	SKEB 3023
SKEB 4323	Biomedical Devices	3	
SKEB 4343	Cell and Tissue Engineering	3	
SKEB 4433	Biomedical Instrumentation Management	3	
SKEB 4513	Rehabilitation Engineering	3	
SKEB 4113	Bio-Fabrication	3	
SKEB 4123	Bio-Material Characterization and Analysis	3	SKEB 3313
SKEB 4133	Machining and Testing for Biomedical	3	
SKEB 4163	Object Oriented Programming for Engineers	3	SKEE 1103
SKEL 4543	Biosystem Modelling	3	SKEB 1513
SKEL 4563	Biosensor and Transducers	3	SKEE 2133
SKET 3583	Digital Communication Systems	3	SKEB 3533
SKET 4533	Wireless Communication Systems	3	
SKEL 3613	Semiconductor Material Engineering	3	SKEE 1073
SKEL 4213	Software Engineering	3	SKEE 1103
SKEL 4343	Information Security	3	SKEE 1233
SKEB 3503	Physiology & Introduction to Medicine	3	

AWARD REQUIREMENTS

To graduate, students must:

- Attain a total of not less than 137 credit hours (SKEB)
- Attain a minimum CGPA of 2.0.
- Complete Professional Skills Certificates (PSC).

CURRICULUM FLOWCHART (MARCH INTAKE)



GRADUATION CHECKLIST (1)

It is the responsibility of the students to ensure that all courses are taken and passed. In order to graduate, students must pass all courses in the following checklist. Students who do not complete any of the courses are not eligible to graduate.

NO	CODE	COURSE	CREDIT EARNED (JKD)	CREDIT COUNTED (JKK)	TICK (/) IF PASSED
BIOMEDICAL ENGINEERING COURSES					
1	SKEB 1012	Introduction to Biomedical Engineering	2	2	
2	SKEB 1513	Human Anatomy and Physiology	3	3	
3	SKEE 1013	Electrical Circuit Analysis	3	3	
4	SKEE 1223	Digital Circuit System	3	3	
5	SKEB 2513	Basic Rehabilitation	3	3	
6	SKEE 1103	C Programming for Engineers	3	3	
7	SKEB 1313	Statics and Dynamics	3	3	
8	SKEE 1073	Electronic Devices and Circuits	3	3	
9	SKEE 2073	Signals and Systems	3	3	
10	SKEB 3323	Solid Mechanics	3	3	
11	SKEE 3223	Microprocessor	3	3	
12	SKEE 2752	Electronic Design Laboratory	2	2	
13	SKEE 2523	Electromagnetic Field Theory	3	3	
14	SKEB 3043	Instrumentation and Measurement in Biomedical	3	3	
15	SKEB 3313	Biomedical Materials	3	3	
16	SKEE 3133	System Modelling and Analysis	3	3	
17	SKEB 3423	Clinical Engineering I	3	3	
18	SKEB 3533	Biomedical Communications	3	3	
19	SKEB 3712	Specialized Biomedical Laboratory	2	2	
20	SKEB 3023	Biomedical Imaging	3	3	
21	SKEB 4023	Biomedical Signal Processing	3	3	
22	SKEB 3433	Clinical Engineering II	3	3	
23	SKEE 3263	Electronic Systems	3	3	
24	SKEE 3733	Integrated Design Project	3	3	
25	SKEE 3925	Industrial Training	5	HW	
26	SKEE 4542	Engineering Management Principles	2	2	

GRADUATION CHECKLIST (2)

NO	CODE	COURSE	CREDIT EARNED (JKD)	CREDIT COUNTED (JKK)	TICK (/) IF PASSED
27	SKEE 4813	Methodology of Research and Development	3	3	
28	SKEB 4413	Biochemistry for Biomedical Engineers	3	3	
29	SKE*4**3/5**3	Field Elective 1 /PRISMS Elective 1	3	3	
30	SKE*5**3/4**3	Field Elective 2/ PRISM Elective 2	3	3	
31	SKE*5**3/4**3	Field Elective 3/ PRISM Elective 3/ Faculty Free Elective	3	3	
32	SKEE 4826	Final Year Project	6	6	
33	SKEB 4033	Professional Biomedical Engineering Practice	3	3	
34	SKEB 4083	Biomedical Artificial Intelligence	3	3	
TOTAL CREDIT OF BIOMEDICAL ENGINEERING COURSES (a)			**103**	**98**	
APPLIED SCIENCE / MATHEMATICS / COMPUTER COURSES					
35	SSCE 1693	Engineering Mathematics I	3	3	
36	SSCE 1793	Differential Equations	3	3	
37	SSCE 1993	Engineering Mathematics II	3	3	
38	SSCE 2193	Engineering Statistics	3	3	
39	SSCE 2393	Numerical Methods	3	3	
TOTAL CREDIT OF APPLIED SCIENCE / MATHEMATICS / COMPUTER COURSES (b)			**15**	**15**	
UNIVERSITY GENERAL COURSES					
Cluster 1: Malaysian Core Value					
40	ULRS 1022	Philosophy and Current Issues	2	2	
41	UHMS 1182	Appreciation of Ethics and Civilization	2	2	
42	UHLM 1012	Malay Language Communication	(2)	(2)	
Note:Total credit for cluster 1 courses is 4 creditsInternational students:UHLM 1012 is compulsory for international students; ANDChoose 1 (one) course from 2 (two) options: (ULRS 1022 or UHMS 1182)Malaysian students:ULRS 1022 and UHMS 1182 are compulsory for Malaysian students.					
Cluster 2: Value and Identity					
43	ULRS 1012	Value and Identity	2	2	
Cluster 3: Global Citizen					
44	ULRF 2**2	Elective of Co-Curricular Service Learning	2	2	

GRADUATION CHECKLIST (3)

NO	CODE	COURSE	CREDIT EARNED (JKD)	CREDIT COUNTED (JKK)	TICK (/) IF PASSED
Cluster 4: Communication Skills					
45	UHLB 2122	Professional Communication Skills 1	2	2	
46	UHLB 3132	Professional Communication Skills 2	2	2	
47	UHL* 1112	Foreign Language for Communication	2	2	
Cluster 5: Enterprising Skills					
48	ULRS 3032	Entrepreneurship & Innovation	2	2	
Free Electives					
49	S*** ###3	Free Electives	3	3	
TOTAL CREDIT OFUNIVERSITY GENERAL COURSES + FREE ELECTIVES (c)			19	19	
TOTAL CREDIT TO GRADUATE (a + b + c)			**137**	**132**	

OTHER COMPULSORY COURSES – PROFESSIONAL SKILLS CERTIFICATE (PSC)			
Students are required to enrol and pass FIVE (5) PSC courses, to be eligible to graduate. Enrol the PSC courses as follows:			
COMPULSORY PSC COURSES (Enrol All 3 Courses)			
1	GLRB0010	Design Thinking for Entrepreneur	
2	GLRM0010	Talent and Competency Management	
3	GLRL0010	English Communication Skills for Graduating Students (ECS)	
ELECTIVE PSC COURSES (Choose Any 2 Courses only)			
1	GLRT0010	Data Analytics for Organization	
2	GLRM0020	Professional Ethics and Integrity	
3	GLRT0020	Construction Measurement (Mechanical & Electrical)	
4	GLRT0030	OSHE for Engineering Industry and Laboratory	
5	GLRT0040	OSHE for Construction Industry and Laboratory Works	
6	GLRT0050	Quality Management for Build Environment and Engineering Professionals	
7	GLRT0060	Safety and Health Officer Introductory Course	
8	GLRT0070	Industrial Machinery and Lubrication	
Or any other elective PSC courses offered by UTM iLeagueInformation on PSC Courses: https://ileague.utm.my/utm-professional-skills-certificate-utm-psc/ Online PSC Registration: https://elearnpsc.utmspace.edu.my/			

COURSE APPROVAL
(MORE THAN 18 CREDITS)

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Dean
Faculty of Electrical Engineering
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20 Credits
Approval by Academic Advisor and Deputy Dean (Academic and Student Affairs)

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19 Credits
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Important : Students are not allowed to take more than 21 credit hours

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SEMESTER	GPA	CGPA	REMARKS

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Amendment Notes:

Revision 2.0
Added Session/Sem on each menu header / Amended of Flowchart
Course swapped : SKEE 3263 and SKEB 3043 (SKEE 3263 as pre-req)
Added Menu for Intake March 2024
Update Staff Profile
Revision 3.0
PLO update
PEO update
Code change SKEB3733 to SKEE3733

Revision 4.0

- Swap offering of SKEE 2752 and ULRS 2**2 for March Intake
- Swap offering of SSCE 1793 and SSCE 2393 for March Intake
- Update curriculum flowchartfor March Intake