

Course Menu (A)

YEAR 1: SEMESTER 1			Menu (A)
Code	Course	Credit	Pre-Requisite
SKMJ 1203	Statics*	3	
SKMJ 1503	Engineering Modelling and Drawing	3	
SKMJ 1902	Engineering Principles and Practice	2	
SSCE 1693	Engineering Mathematics I	3	
ULRS 1042 or UHLM 1012	Philosophy and Current Challenges (For local students only)/ Malay Language for Communication 2 (For international students only)	2	
ULRF 2xx2	Service Learning and Community Engagement	2	
UHLB 1112	English Communication Skills (HW)	HL	Refer English courses requirement section
TOTAL		15	

YEAR 1: SEMESTER 2			Menu (A)
Code	Course	Credit	Pre-Requisite
SKMJ 1413	Thermodynamics*	3	
SKMJ 1213	Dynamics*	3	SKMJ 1203 (Min. C)
SKMJ 1013	Computational Thinking and Programming	3	
SKMJ 1113	Solid Mechanics I*	3	SKMJ 1203 (Min. C)
SSCE 1793	Differential Equations	3	SSCE 1693**
ULRS 1122 or ULRS 1132	Malaysian Nation-State Aspiration (For local students only)/ Malaysian Citra (For international students only)	2	
TOTAL		17	

SHORT SEMESTER (YEAR 1: SEMESTER 3)			Menu (A)
Code	Course	Credit	Pre-Requisite
	Voluntary Industrial Training		
TOTAL			

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

YEAR 2: SEMESTER 1			Menu (A)
Code	Course	Credit	Pre-Requisite
ULRS 1032	Integrity and Anti-Corruption	2	
SKMJ 2313	Fluid Mechanics I*	3	SKMJ 1203 (Min. C), SKMJ 1013
SKMJ 2223	Machine Dynamics and Vibrations*	3	SKMJ 1213
SKMJ 2423	Engineering Thermodynamics and Heat Transfer*	3	SKMJ 1413
SKMJ 2123	Solid Mechanics II*	3	SKMJ 1113
SKMJ 1223	Introduction to Mechatronic Systems	3	
TOTAL		17	

YEAR 2: SEMESTER 2			Menu (A)
Code	Course	Credit	Pre-Requisite
UHLB 2122	Professional Communication Skills 1	2	
SXXX xxx3	Free Elective	3	
SKMJ 2323	Fluid Mechanics II*	3	SKMJ 2313
SKMJ 2613	Materials Science	3	
SKMJ 2213	Measurement System and Sensors	3	SKMJ 1223
SSCE 1993	Engineering Mathematics II	3	SSCE 1693**
TOTAL		17	

SHORT SEMESTER (YEAR 2: SEMESTER 3)			Menu (A)
Code	Course	Credit	Pre-Requisite
	Voluntary Industrial Training		
TOTAL			

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

YEAR 3: SEMESTER 1			Menu (A)
Code	Course	Credit	Pre-Requisite
UHLX 1112	Foreign Language for Communication Elective	2	
UHLB 3132	Professional Communication Skills 2	2	
SKMJ 3713	Manufacturing Processes	3	
SKMJ 3622	Materials Technology	2	SKMJ 2613
SKMJ 2912	Engineering Laboratory	2	
SKMJ 3513	Elements of Mechanical Design	3	SKMJ 2123, SKMJ 1503
SKMJ 3524	Integrated Engineering Design I	4	SKMJ 2213, SKMJ 1503
TOTAL		18	

YEAR 3: SEMESTER 2			Menu (A)
Code	Course	Credit	Pre-Requisite
ULRS 3032	Entrepreneurship and Innovation	2	
SKMJ 2233	Control Engineering	3	SKMJ 1213, SSCE 1793
SKMJ 3023	Applied Numerical Methods	3	SKMJ 1013, SSCE 1793
SKMJ 3813	Integrated Operations Management	3	
SKMJ 3534	Integrated Engineering Design II	4	SKMJ 3524 (Min. D+)
SSCE 2193	Engineering Statistics	3	
TOTAL		18	

SHORT SEMESTER (YEAR 3: SEMESTER 3)			Menu (A)
Code	Course	Credit	Pre-Requisite
SKMJ 3915	Industrial Training	5	##, SKMJ 2123, SKMJ 2223, SKMJ 2323, SKMJ 2423
TOTAL		5	

Remarks:

Must obtained minimum of 80 credits

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

YEAR 4: SEMESTER 1			Menu (A)
Code	Course	Credit	Pre-Requisite
SKMJ 4912/ SKMJ 5912	Final Year Project I	2	SKMJ 2123, SKMJ 2223, SKMJ 2323, SKMJ 2423
SKMJ 3823	Project Management and Finance	3	
SKMJ 3921	Engineers and Society	1	
SKMX 4xx3	Elective I / PRISMS Elective I	3	
SKMX 4xx3	Elective II / PRISMS Elective II	3	
SKMX 4xx3	Elective III / PRISMS Elective III	3	
SKMJ 4932	Integrated Laboratory	2	SKMJ 2912 (Min. D+)
TOTAL		17	

YEAR 4: SEMESTER 2			Menu (A)
Code	Course	Credit	Pre-Requisite
SKMJ 4902	Engineering Professional Practice	2	Obtained min. of 60 credits
SKMJ 4924/ SKMJ 5924	Final Year Project II	4	SKMJ 4912/ SKMJ 5912 (Min. D+)
SKMX 4xx3	Elective IV / PRISMS Elective IV	3	
SKMX 4xx3	Elective V / PRISMS Elective V	3	
TOTAL		12	

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

Course Menu (B)

YEAR 1: SEMESTER 1			Menu (B)
Code	Course	Credit	Pre-Requisite
SKMJ 1203	Statics*	3	
SKMJ 1013	Computational Thinking and Programming	3	
SKMJ 1413	Thermodynamics*	3	
SSCE 1693	Engineering Mathematics I	3	
ULRS 1042 or UHLM 1012	Philosophy and Current Challenges (For local students only)/ Malay Language for Communication 2 (For international students only)	2	
ULRF 2xx2	Service Learning and Community Engagement	2	
UHLB 1112	English Communication Skills (HW)	HL	Refer English courses requirement section
TOTAL		16	

YEAR 1: SEMESTER 2			Menu (B)
Code	Course	Credit	Pre-Requisite
SKMJ 1902	Engineering Principles and Practice	2	
SKMJ 2423	Engineering Thermodynamics and Heat Transfer*	3	SKMJ 1413
SKMJ 1503	Engineering Modelling and Drawing	3	
SKMJ 1223	Introduction to Mechatronic Systems	3	
SSCE 1793	Differential Equations	3	SSCE 1693**
ULRS 1122 or ULRS 1132	Malaysian Nation-State Aspiration (For local students only)/ Malaysian Citra (For international students only)	2	
TOTAL		16	

SHORT SEMESTER (YEAR 1: SEMESTER 3)			Menu (B)
Code	Course	Credit	Pre-Requisite
	Voluntary Industrial Training		
TOTAL			

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

YEAR 2: SEMESTER 1			Menu (B)
Code	Course	Credit	Pre-Requisite
ULRS 1032	Integrity and Anti-Corruption	2	
SXXX xxx3	Free Elective	3	
SKMJ 2213	Measurement System and Sensors	3	SKMJ 1223
SKMJ 1213	Dynamics*	3	SKMJ 1203 (Min. C)
SKMJ 1113	Solid Mechanics I*	3	SKMJ 1203 (Min. C)
SKMJ 2613	Materials Science	3	
TOTAL		17	

YEAR 2: SEMESTER 2			Menu (B)
Code	Course	Credit	Pre-Requisite
UHLB 2122	Professional Communication Skills 1	2	
SKMJ 2223	Machine Dynamics and Vibrations*	3	SKMJ 1213
SKMJ 2123	Solid Mechanics II*	3	SKMJ 1113
SKMJ 2313	Fluid Mechanics I*	3	SKMJ 1203 (Min. C), SKMJ 1013
SKMJ 3622	Materials Technology	2	SKMJ 2613
SSCE 1993	Engineering Mathematics II	3	SSCE 1693**
TOTAL		16	

SHORT SEMESTER (YEAR 2: SEMESTER 3)			Menu (B)
Code	Course	Credit	Pre-Requisite
	Voluntary Industrial Training		
TOTAL			

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

YEAR 3: SEMESTER 1			Menu (B)
Code	Course	Credit	Pre-Requisite
UHLX 1112	Foreign Language for Communication Elective	2	
UHLB 3132	Professional Communication Skills 2	2	
SKMJ 3023	Applied Numerical Methods	3	SKMJ 1013, SSCE 1793
SKMJ 2233	Control Engineering	3	SKMJ 1213, SSCE 1793
SKMJ 2323	Fluid Mechanics II*	3	SKMJ 2313,
SKMJ 3524	Integrated Engineering Design I	4	SKMJ 2213, SKMJ 1503
TOTAL		17	

YEAR 3: SEMESTER 2			Menu (B)
Code	Course	Credit	Pre-Requisite
ULRS 3032	Entrepreneurship and Innovation	2	
SKMJ 3713	Manufacturing Processes	3	
SKMJ 3513	Elements of Mechanical Design	3	SKMJ 2123, SKMJ 1503
SKMJ 2912	Engineering Laboratory	2	
SKMJ 3921	Engineers and Society	1	
SKMJ 3534	Integrated Engineering Design II	4	SKMJ 3524 (Min. D+)
SSCE 2193	Engineering Statistics	3	
TOTAL		18	

SHORT SEMESTER (YEAR 3: SEMESTER 3)			Menu (B)
Code	Course	Credit	Pre-Requisite
SKMJ 3915	Industrial Training	5	##, SKMJ 2123, SKMJ 2223, SKMJ 2323, SKMJ 2423
TOTAL		5	

Remarks:

Must obtained minimum of 80 credits

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

YEAR 4: SEMESTER 1			Menu (B)
Code	Course	Credit	Pre-Requisite
SKMJ 4912/ SKMJ 5912	Final Year Project I	2	SKMJ 2123, SKMJ 2223, SKMJ 2323, SKMJ 2423
SKMJ 4902	Engineering Professional Practice	2	Obtained min. of 60 credits
SKMJ 3813	Integrated Operations Management	3	
SKMX 4xx3	Elective I / PRISMS Elective I	3	
SKMX 4xx3	Elective II / PRISMS Elective II	3	
SKMX 4xx3	Elective III / PRISMS Elective III	3	
TOTAL		16	

YEAR 4: SEMESTER 2			Menu (B)
Code	Course	Credit	Pre-Requisite
SKMJ 4924/ SKMJ 5924	Final Year Project II	4	SKMJ 4912/ SKMJ 5912 (Min. D+)
SKMJ 3823	Project Management and Finance	3	
SKMJ 4932	Integrated Laboratory	2	SKMJ 2912 (Min. D+)
SKMX 4xx3	Elective IV / PRISMS Elective IV	3	
SKMX 4xx3	Elective V / / PRISMS Elective V	3	
TOTAL		15	

Remarks:

- *Core Courses – passing grade is C (50%).
- Passing grade for other courses is D+ (40%).
- For courses with pre-requisite(s), students MUST OBTAIN minimum grade D- (30%) for the pre-requisite course(s) except stated otherwise.
- **Students MUST HAVE at least attempted the pre-requisite course.
- For courses with pre-requisite(s) in sequence, students MUST ALSO FULFILL all the preceding pre-requisite(s).
- Any passed course (B- and below) repeated by a student with the permission of the faculty for the purpose of improving academic achievement will be charged a fee of RM50.00 per credit and will not be refunded if the student withdraws (TD) from the course.

English Courses Requirement

Students with English qualification shown in table below are exempted from Compulsory Attendance (HW) for UHLB 1112. English prerequisite is shown below:

English Language Tests	UHLB 1112
a) MUET Band 4 and above b) IELTS Band 5.5 and above c) TOEFL score of 525 and above d) TOEFL iBT score of 46 and above e) CEFR Level B2 f) Linguaskill 160 and above g) PTE 51 and above h) ELS 108 and above i) UTM Diploma – Grade A-, A, A+ j) Diploma – English International School Curriculum (American Diploma)	Exempted

Elective Courses

Apart from the core course, students must also take 15 credits of elective course.

Areas	Code	
Area 1: Mechanical Engineering	SKMJ 4413	Battery Energy Storage System
	SKMJ 4423	Power Plant Engineering
	SKMJ 4433	Advanced HVACR
	SKMJ 4443	Thermal Fluid System Design
	SKMJ 4463	Energy Environment
	SKMJ 4453	Combustion Process
	SKMJ 4283	Intelligent Robotics
	SKMJ 4273	Robotics
	SKMJ 4243	Advanced Control Engineering
	SKMJ 4523	Design Optimization
	SKMJ 4513	Computer Aided Design
	SKMJ 4533	Mechanical Design and Industrial Practice I
	SKMJ 4543	Mechanical Design and Industrial Practice II
	SKMJ 4553	Advance Design Analysis
	SKMJ 4563	Design and Prototyping Integration
	SKMJ 4213	Mechanical Vibration
	SKMJ 4223	Noise
	SKMJ 4233	Mechanism and Linkages
	SKMJ 4263	Machine Learning
	SKMJ 4313	Turbomachinery
	SKMJ 4353	Lubrication
	SKMJ 4343	Hydraulic Machine and Pipe System
	SKMJ 5413	Energy Management
Area 2: Materials	SKMJ 5343	Friction, Wear and Lubrication
	SKMJ 5223	Advanced Industrial Automation
	SKMB 4143	Physical Metallurgy
	SKMB 4063	Mechanical Properties of Materials
	SKMB 4033	Materials Characterization
	SKMB 4043	Corrosion and Corrosion Control

Area 3: Manufacturing	SKMB 4053	Materials Selection in Mechanical Design
	SKMB 4023	Non-Destructive Testing
	SKMB 4073	Surface Engineering
	SKMB 4083	Materials Processing
	SKMB 4093	Computational Materials Science
	SKMB 4103	Carbon Materials
	SKMB 4113	Failure Analysis
	SKMB 4123	Electronic Packaging
	SKMB 4133	Welding Metallurgy
	SKMJ 5633	Asset Integrity Management
	SKMP 4023	Design for Manufacture and Assembly
	SKMP 4083	Jig, Fixture and Die Design
	SKMP 4033	Casting Technology
	SKMP 4043	Product Design and Manufacture
	SKMP 4053	Design of Welded Structures
Area 4: Industrial	SKMP 4063	Material for Welding Engineering
	SKMP 4073	Management of Weld Quality
	SKMP 4013	Additive Manufacturing
	SKMP 4093	Plastic Injection Mould Design
	SKMP 4103	Modern Manufacturing
	SKMP 4113	CAD/CAM/CAE
	SKMP 4123	Industrial Automation
	SKMI 4083	Quality System
	SKMI 4023	Industrial System Simulation
	SKMI 4043	Facilities Design
	SKMI 4033	Reliability and Maintenance
	SKMI 4113	Work Design and Productivity
	SKMI 5013	Work System and Ergonomics
	SKMI 5023	Supply Chain and Logistics
	SKMI 5033	Quality Engineering
	SKMI 5043	Industrial Data Analytics
	SKMI 5053	Operations Research
	SKMI 5063	Lean Manufacturing
	SKMI 5073	Engineering And Technology Management
	SKMI 5083	Engineering And Environmental Safety

**Actual elective courses offered will be based on suitability*

PRISMS Elective Courses

For students who intend to enrol in PRISMS, refer to the PRISMS Section for a list of related elective courses associated with the Postgraduate Programme or elective courses with code SKMX 5XX3.

dyna:Mech@UTM

dyna:Mech is an initiative by the Faculty of Mechanical Engineering UTM which aims to strengthen the currently available Mechanical Engineering Programme, at the same time improving the employability and competitiveness of the graduates.

Our enhanced initiative offers a comprehensive package involving up to 34 credits tailored to industry requirements. This includes 19 credits from existing faculty core courses (including a mandatory 12-week

Industrial Training, Integrated Engineering Design I & II, and Final Year Project I & II) and up to 15 flexible credits assigned for industry-driven elective courses.

The courses and projects offered under the dyna:Mech programme are custom-designed based on specific packages committed by our prominent industrial partners (such as Dyson, IQIP, Torrecid, and Samtec). Consequently, Mechanical Engineering students can experience the working world while they are still studying and will be trained with specific skills according to the current needs of the industry. This dyna:Mech initiative provides industrial benefit through reducing the period taken significantly to train and prepare the young engineers.

This collaboration helps students identify early employment opportunities, while allowing industries to select top talent prior to graduation. Upon completion, participating students will also be awarded an additional certificate from the Faculty recognizing their involvement in the dyna:Mech programme. The Faculty of Mechanical Engineering at UTM continues to ensure its program produces outstanding future-ready engineers.

Graduation Checklist

To graduate, students must pass all the stated courses in this checklist. It is the responsibility of the students to ensure that all courses are taken and passed. Students who do not complete any of the course are not allowed to graduate.

No	Course Code	Course Name	Credit Earned	Credit Counted	Tick (/) If Passed
Mechanical Engineering Courses					
1	SKMJ 1013	Computational Thinking and Programming	3	3	
2	SKMJ 1113	Solid Mechanics I	3	3	
3	SKMJ 1203	Statics	3	3	
4	SKMJ 1213	Dynamics	3	3	
5	SKMJ 1223	Introduction to Mechatronic Systems	3	3	
6	SKMJ 1413	Thermodynamics	3	3	
7	SKMJ 1503	Engineering Modelling and Drawing	3	3	
8	SKMJ 1902	Engineering Principles and Practice	2	2	
9	SKMJ 2123	Solid Mechanics II	3	3	
10	SKMJ 2213	Measurement System and Sensors	3	3	
11	SKMJ 2223	Machine Dynamics and Vibrations	3	3	
12	SKMJ 2233	Control Engineering	3	3	
13	SKMJ 2313	Fluid Mechanics I	3	3	
14	SKMJ 2323	Fluid Mechanics II	3	3	
15	SKMJ 2423	Engineering Thermodynamics and Heat Transfer	3	3	
16	SKMJ 2613	Material Science	3	3	
17	SKMJ 2912	Engineering Laboratory	2	2	
18	SKMJ 3023	Applied Numerical Methods	3	3	
19	SKMJ 3513	Elements of Mechanical Design	3	3	
20	SKMJ 3524	Integrated Engineering Design I	4	4	
21	SKMJ 3534	Integrated Engineering Design II	4	4	
22	SKMJ 3622	Materials Technology	2	2	
23	SKMJ 3713	Manufacturing Process	3	3	
24	SKMJ 3813	Integrated Operations Management	3	3	
25	SKMJ 3823	Project Management and Finance	3	3	
26	SKMJ 3915	Industrial Training	5	HL	
27	SKMJ 3921	Engineers and Society	1	1	
28	SKMJ 4902	Engineering Professional Practice	2	2	

29	SKMJ 4912/ SKMJ 5912	Final Year Project I	2	2
30	SKMJ 4924/ SKMJ 5924	Final Year Project II	4	4
31	SKMJ 4932	Integrated Laboratory	2	2
32	SKMX 4xx3	Elective I	3	3
33	SKMX 5xx3	PRISMS Elective I		
34	SKMX 4xx3	Elective II	3	3
35	SKMX 5xx3	PRISMS Elective II		
36	SKMX 4xx3	Elective III	3	3
37	SKMX 5xx3	PRISMS Elective III		
38	SKMX 4xx3	Elective IV	3	3
39	SKMX 5xx3	PRISMS Elective IV		
40	SKMX 4xx3	Elective V	3	3
41	SKMX 5xx3	PRISMS Elective V		
TOTAL CREDIT FOR MECHANICAL ENGINEERING COURSES (A)			105	100
Mathematics Courses (Faculty Of Science)				
1	SSCE 1693	Engineering Mathematics I	3	3
2	SSCE 1793	Differential Equations	3	3
3	SSCE 1993	Engineering Mathematics II	3	3
4	SSCE 2193	Engineering Statistics	3	3
TOTAL CREDIT FOR MATHEMATICS COURSES (B)			12	12
University General Courses				
University Free Elective				
1	SXXX xxx3	Free Elective	3	3
Malaysia Core Value				
For local students only				
	ULRS 1042	Philosophy and Current Challenges	2	2
1	ULRS 1122	Malaysian Nation-State Aspiration	2	2
	ULRS 1032	Integrity and Anti-Corruption	2	2
For International Students Only				
	ULRS 1132	Malaysian Citra	2	2
2	UHLM 1012	Malay Language for Communication 2	2	2
	ULRS 1032	Integrity and Anti-Corruption	2	2
Global Citizen				
1	ULRF 2xx2	Service Learning and Community Engagement	2	2
Communication Skills				
1	UHLB 2122	Professional Communication Skills 1	2	2
2	UHLB 3132	Professional Communication Skills 2	2	2
3	UHLX 1112	Foreign Language for Communication Elective	2	2
Innovation and Leadership Skills				
1	ULRS 3032	Entrepreneurship and Innovation	2	2
TOTAL CREDIT FOR UNIVERSITY GENERAL COURSES (C)			16	16
TOTAL CREDIT TO GRADUATE (A + B + C)			136	131

Other Compulsory Courses

OTHER COMPULSORY COURSES – PROFESSIONAL SKILLS CERTIFICATION (PSC)

- Students are required to enrol and pass FIVE (5) PSC courses, in order to be eligible to graduate

1	GLRB 0010	Design Thinking for Entrepreneur (DTE)
2	GLRM 0010	Talent and Competency Management (TCM)
3	GLRL 0010	English Communication Skills for Graduating Students (ECS)
Elective PSC Courses (Choose 2 Only)		
1	GLRT 0010	Data Analytic for Organization
2	GLRT 0020	Professional Ethics and Integrity
3	GLRT 0030	Construction Measurement (Mechanical & Electrical)
4	GLRT 0050	OSHE for Engineering Industry and Laboratory
5	GLRT 0060	Quality Management for Built Environment and Engineering Professionals
6	GLRT 0070	Safety and Health Officer Introductory Course
7	GLRM 0020	Industrial Machinery and Lubrication

Course Synopsis - Core Courses

SKMJ 1013 - Computational Thinking and Programming

This introductory programming course is designed for undergraduate engineering students. The course will cover fundamental programming concepts and techniques, using the Python programming language as a primary tool. Students will learn to write code for solving basic engineering calculations, creating informative data visualizations, and developing simple user interfaces. Additionally, students will gain brief exposure to other programming languages widely used, as well as other emerging platforms (AI Agents). The coding will primarily conduct within a Linux-based operating system environment during the lecture and hands-on session, emphasizing command-line proficiency and system interaction, and will utilize Raspberry Pi hardware to reflect the increasing use of these platforms in engineering innovation and embedded systems development. The course project allows students to apply their newfound programming skills to a practical engineering problem.

SKMJ 1113 - Solid Mechanics I

The course provides students with the knowledge to determine the strength and stiffness of structures being used. The structures that will be studied in this course are bars, pins, bolts, shafts and beams and the types of applied loadings are axial forces, deformations due to the change in temperature, torsional loads, transverse loads and combination of these loads. At the end of the course, students should be able to determine the mechanical properties of the materials with respect to their strength and stiffness. Students should be able to calculate stresses, strains and deformations in structures due to various types of loading conditions. In addition, they should be able to solve problems related to statically determinate and indeterminate structures.

SKMJ 1203 - Statics

The course introduces students to the part of mechanics which considers the action of forces in rest or equilibrium. It will emphasize on the fundamental concepts related to force system and moments applied to the equilibrium of particles and rigid bodies. This includes problems related to the conditions of frames, structures, mechanisms and machines at rest. Students are also exposed to the concept of friction and its effect on machines. At the end of the course, students should be able to analyse forces acting on simple structures and mechanisms in the state of equilibrium both in 2D and 3D domains. Students should also be able to demonstrate and apply the knowledge to continuing subjects that requires the analytical skills developed in this course.

SKMJ 1213 - Dynamics

The course is an extension to Statics, which is the pre-requisite to this course. It introduces students to the part of mechanics which considers the action of forces in producing motion. This course provides an exposure to students on the theory of the kinetics and kinematics of particles and rigid bodies. The concepts of energy, work, momentum and impulse are also introduced. At the end of the course, the students should be able to apply the principles to study and analyse the behaviour and responses of dynamical systems. They should also be able to solve the dynamic problems related to the determination of forces, energy and power to move a body.