ACADEMIC GUIDEBOOK
DIPLOMA PROGRAMME
ACADEMIC SESSION 2025/2026

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PENGENALAN

Buku Panduan Program Diploma ini disediakan untuk membantu pelajar baharu dalam memahami proses dan prosedur yang berkaitan dengan pengajian mereka di UniMAP. Pelajar perlu menggunakan buku ini sebagai panduan utama dalam merancang dan membuat keputusan mengenai kursus yang akan diambil dari semester pertama sehingga semester akhir pengajian. Buku panduan ini juga memberikan beberapa maklumat asas mengenai sistem akademik, struktur program, senarai kursus yang ditawarkan bersama-sama dengan sinopsis, sumber rujukan, senarai kakitangan dan maklumat berkaitan yang lain. Diharapkan pelajar akan mendapat manfaat daripada maklumat yang diberikan dalam buku panduan untuk merancang pengajian mereka di UniMAP.

Senarai Fakulti:

1. Fakulti Kejuruteraan & Teknologi Elektrik
2. Fakulti Kejuruteraan & Teknologi Elektronik
3. Fakulti Kejuruteraan & Teknologi Mekanikal
4. Fakulti Kejuruteraan & Teknologi Kimia
5. Fakulti Kejuruteraan & Teknologi Awam
6. Fakulti Perniagaan & Komunikasi
7. Fakulti Komputeran Cerdas

INTRODUCTION

The Academic Guidebook for Diploma Programme is prepared to assist newly-enrolled UniMAP students in understanding processes and procedures that are related to their studies in UniMAP. Students should use this book as the main guide in the planning and selection of courses to be taken starting from the first semester until the final semester of their studies. This guidebook also provides some basic information on the academic system, programme structures, list of courses offered (with the synopsis), references, list of staff members and other related information. It is hoped that students will benefit from the information provided in this guidebook and use the information to plan their studies in UniMAP.

List of Faculties:

1. *Faculty of Electrical Engineering & Technology*
2. *Faculty of Electronic Engineering & Technology*
3. *Faculty of Mechanical Engineering & Technology*
4. *Faculty of Chemical Engineering & Technology*
5. *Faculty of Civil Engineering & Technology*
6. *Faculty of Business & Communication*
7. *Faculty of Intelligent Computing*

Senarai Program Diploma / *List of Diploma Programmes:*

1. Diploma Kejuruteraan Komputer / *Diploma in Computer Engineering*
2. Diploma Kejuruteraan Elektrik */ Diploma in Electrical Engineering*
3. Diploma Kejuruteraan Mekatronik */ Diploma in Mechatronic Engineering*
4. Diploma Kejuruteraan Pembuatan */ Diploma in Manufacturing Engineering*
5. Diploma Kejuruteraan Elektronik */ Diploma in Electronic Engineering*
6. Diploma Kejuruteraan Bahan */ Diploma in Materials Engineering*
7. Diploma Teknologi Kejuruteraan Mekanikal / *Diploma in Mechanical Engineering Technology*

MISI / *MISSION:*

Melahirkan insan kamil yang menyumbang kepada agenda pembangunan dan daya saing industri negara.
To produce exemplary individuals who contribute to the nation's development and industrial competitiveness agenda.

VISI / *VISION:*

Universiti Teknikal yang berdaya saing di persada antarabangsa.
An internationally competitive technical university.

NILAI TERAS / *CORE VALUES*
Ilmu, Keikhlasan, Kecemerlangan
Knowledge, Sincerity, Excellence

LAGU UniMAP / *UniMAP ANTHEM:*

WAWASANKU
Universiti Malaysia Perlis
Alam Kejuruteraan
Ilmu Keikhlasan Kecemerlangan
Wawasan Jiwa Kita

Berdikari rohaniah
Berteknologi
Pemimpin Berbestari
Untuk Bangsa Insan Dan Umat dunia
Negara Yang Tercinta

Universiti Malaysia Perlis
Alam Kejuruteraan
Ilmu Keikhlasan Kecemerlangan
Wawasan Jiwa Kita

D.Y.T.M. TUANKU SYED FAIZUDDIN PUTRA IBNI TUANKU SYED SIRAJUDDIN PUTRA JAMALULLAIL D.K., S.P.M.P., P.A.T.

RAJA MUDA PERLIS / *CROWN PRINCE OF PERLIS*
(CANSELOR / *CHANCELLOR*)

D.Y.T.M TUANKU DR. HAJAH LAILATUL SHAHREEN AKASHAH KHALIL S.P.M.P.

RAJA PUAN MUDA PERLIS / *CROWN PRINCESS OF PERLIS*
(PRO CANSELOR / *PRO CHANCELLOR*)

PENGURUSAN UNIVERSITI

EXCO COMMITTEE

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Penasihat Undang-Undang / *Legal Advisor*

KALENDAR AKADEMIK DIPLOMA / *DIPLOMA ACADEMIC CALENDAR*
SIDANG AKADEMIK / *ACADEMIC SESSION* 2025/2026

AKTIVITI / *ACTIVITIES*	SEMESTER PERTAMA / *FIRST SEMESTER* 14 Julai – 23 November 2025 (19 minggu / *weeks*)		
	JANGKA MASA / *DATE*	**TEMPOH / *DURATION***	**CATATAN / *NOTES***
Pendaftaran Pelajar Baharu & Minggu Suai Kenal / *New Intake Registration & Orientation Week*	7 – 13 Julai 2025	1 minggu / *week*	-
Kuliah / *Lectures*	14 Julai – 31 Ogos 2025	7 minggu / *weeks*	**Hari Kebangsaan** 31.08.2025 [Ahad / *Sunday*]
Cuti Pertengahan Semester / *Mid Semester Break*	1 – 7 September 2025	1 minggu / *week*	**Maulidur Rasul/ *Prophet Muhammad's Birthday*** 5.09.2025 [Jumaat / *Friday*]
Kuliah / *Lectures*	8 September – 26 Oktober 2025	7 minggu / *weeks*	**Hari Malaysia** 16.09.2025 [Selasa / *Tuesday*] **Hari Deepavali / *Deepavali*** 20.10.2025 [Isnin / Monday]
Minggu Ulangkaji / *Revision Week*	27 Oktober – 2 November 2025	1 minggu / *week*	-
Peperiksaan / *Examination*	3 – 23 November 2025	3 minggu / *weeks*	-
Cuti Antara Semester / *Mid Semester Break*	24 November – 14 Disember 2025	3 minggu / *weeks*	-

KALENDAR AKADEMIK DIPLOMA / DIPLOMA *ACADEMIC CALENDAR*
SIDANG AKADEMIK / *ACADEMIC SESSION* 2025/2026

AKTIVITI / *ACTIVITIES*	SEMESTER KEDUA / *SECOND SEMESTER* 15 Disember 2025 – 26 April 2026 (19 minggu / *weeks*)		
	JANGKA MASA / *DATE*	**TEMPOH / *DURATION***	**CATATAN / *NOTES***
Kuliah / *Lectures*	15 Disember 2025 – 15 Februari 2026	9 minggu / *weeks*	**Hari Krismas / *Christmas*** 25.12.2025 [Khamis / *Thursday* **Israk Mikraj** 16.01.2026 [Jumaat / *Friday*]
Cuti Pertengahan Semester / *Mid Semester Break*	16 – 22 Februari 2026	1 minggu / *week*	**Tahun Baru Cina / *Chinese New Year*** 17 – 18.02.2026 [Selasa - Rabu / Tuesday - *Wednesday*]
Kuliah / *Lectures*	23 Februari – 29 Mac 2026	5 minggu / *weeks*	**Nuzul Al-Quran** 7.03.2026 [Sabtu / *Saturday*] **Hari Raya Aidilfitri / *Eid-ul Fitr*** 20 - 21.03.2026 [Jumaat – Sabtu / *Friday – Saturday*]
Minggu Ulangkaji / *Revision Week*	30 Mac – 5 April 2026	1 minggu / *week*	-
Peperiksaan / *Examination*	6 – 26 April 2026	3 minggu / *weeks*	-
Cuti Akhir Sidang Akademik / *End of Academic Year Break*	27 April – 28 Jun 2026	9 minggu / *weeks*	**Hari Pekerja / *Labour Day*** 1.05.2026 [Jumaat / *Friday*] **Hari Keputeraan Raja Perlis / *Birthday of DYMM Perlis*** 17.05.2026 [Sabtu / *Saturday*] **Hari Wesak / *Wesak Day*** 31.05.2026 [Ahad / *Sunday*] **Hari Keputeraan YDP Agong/ *Birthday of YDP Agong*** 1.06.2026 [Isnin / *Monday*]

SISTEM AKADEMIK

Tahun Akademik Universiti dibahagikan kepada dua semester lazim iaitu Semester I dan Semester II. Setiap semester ini mengandungi 14 minggu pembelajaran. Universiti juga menawarkan semester khas iaitu Semester Tambahan dan Semester Pendek pada cuti akhir sidang akademik. Peperiksaan akan diadakan pada hujung semester. Pelajar juga perlu lulus semua kursus dan mendapat jumlah kredit yang diperlukan mengikut program pengajian masing-masing serta PNGK sekurang-kurangnya 2.00 untuk berijazah.

PRA-PENDAFTARAN KURSUS

- Pra-pendaftaran kursus membolehkan pelajar membuat pra-pendaftaran atas talian untuk kursus-kursus di semester seterusnya pada tempoh masa yang lebih awal. Tempoh masa yang ditetapkan untuk pra-pendaftaran ini adalah sebelum bermula cuti semester pada semester semasa. Semua pelajar adalah **DIWAJIBKAN** untuk melakukan pra-pendaftaran kursus ini.
- Pelajar **DIKEHENDAKI** mendaftar pada tarikh yang ditetapkan. Kursus yang perlu didaftarkan adalah kursus yang akan diambil pada semester akan datang (semua kursus termasuk kursus Ko-kurikulum). Pelajar digalakkan berjumpa Rakan Pendamping Siswa (RPS) terlebih dahulu sebelum membuat Pra-pendaftaran kursus secara atas talian. Pelajar yang gagal mendaftar dalam tempoh yang ditetapkan, akan menyebabkan pendaftaran rasmi kursus bagi semester hadapan terjejas berikutan keutamaan pendaftaran kursus diberi kepada pelajar yang membuat proses pra-pendaftaran. Pelajar digalakkan untuk mencetak slip pra-pendaftaran ini sebagai bukti pendaftaran.

ACADEMIC SYSTEM

The University Academic Year is divided into two regular semesters, namely Semester I and Semester II. Each semester contains 14 learning weeks. The University also offers special semesters consists Additional Semester and Short Semester on the end of the academic year break. Examination will be held at the end of the semester. To graduate, students also need to pass all courses and obtain the required number of credits according to their respective study programmes as well as a GCPA of at least 2.00.

PRE-REGISTRATION

- *Pre-registration enables student to pre-register their courses online for all the courses to be taken in the following semester at an earlier period. The pre-registration period is set before the semester break of each semester. All students are **REQUIRED** to perform the course pre-registration.*
- *Students **MUST** pre-register before the end of the pre-registration period. Courses to be registered are courses to be taken in the following semester (all courses including Co-curriculum Courses). Students are encouraged to consult with their Rakan Pendamping Siswa (RPS) before pre-registering their courses online. Students who fail to pre-register their courses within the set time will risk their official registration being adversely affected, as priority will be given to those who have pre-registered. Students are encouraged to print their pre-registration slip as a proof of registration.*

PENDAFTARAN KURSUS

- Semua pelajar yang aktif adalah diwajibkan mendaftar kursus untuk setiap semester. Pendaftaran kursus ini dilakukan secara dalam talian (online) oleh semua pelajar. Pendaftaran kursus mesti dibuat mengikut tarikh yang telah ditetapkan seperti hebahan yang dikeluarkan oleh Unit Kemasukan dan Rekod Pelajar melalui emel dan portal.
- Pelajar adalah diwajibkan untuk bertemu dan berbincang dengan Rakan Pendamping Siswa (RPS) berkaitan kursus-kursus yang perlu didaftar. Selepas mendaftar, pelajar perlu membawa bersama slip pendaftaran kursus untuk disahkan oleh RPS dalam sistem pada sesi tersebut. Kursus-kursus yang didaftarkan tanpa mendapat pengesahan dari RPS adalah dianggap **TIDAK SAH**.
- Sekiranya berlaku perubahan pada pendaftaran kursus sama ada pelajar menambah kursus, menggugurkan kursus atau tarik diri kursus dalam tempoh yang ditetapkan, pelajar perlu mendapatkan pengesahan semula daripada RPS.
- Pelajar yang gagal mendaftar kursus dalam tempoh masa yang ditetapkan adalah tertakluk kepada penalti berjumlah RM50. Pendaftaran lewat tidak boleh melebihi minggu ketiga (3) semester. Pelajar perlu mengisi Borang HEA(B)-02[b] (Borang Pendaftaran Kursus Lewat) dan mesti memperoleh kelulusan daripada Dekan Fakulti.
- Manakala pelajar yang baru mendaftar bagi satu-satu sidang akademik baru akan mendaftar secara online pada tarikh yang dinyatakan pada Minggu Suai Kenal mengikut Fakulti masing-masing. Pelajar akan diberi taklimat tentang kursus, dalam Minggu Suai Kenal di Fakulti masing-masing.

COURSE REGISTRATION

- *All active students are required to register for courses allocated for each semester. The courses should be registered online by all students. Course registration must be completed within the dates specified by the Student Admissions and Records Unit via email or the UniMAP Portal.*
- *Students are required to discuss with their Rakan Pendamping Siswa (RPS) regarding courses that they will have to register for each semester. After registration, students must bring the registration slip for verification by the RPS in the system during the discussion session. Course registration without RPS verification is considered **INVALID**.*
- *If there are any changes in student course registration, i.e. add, drop or withdraw courses within the prescribed period, the student must also obtain verification from the RPS.*
- *Students who fail to register within the prescribed period shall be subject to a penalty of RM50. Late registration must not exceed the 3rd week of the semester. Students must complete the HEA(B)-02[b] Late Registration Form and obtain approval from the Dean.*
- *New students will register online on the specified date during the orientation week according to their school. Students will be briefed by their school on their programme courses during the orientation week.*

- Adalah menjadi tanggungjawab pelajar untuk menyemak dan memastikan bahawa semua butir-butir yang dinyatakan dalam Slip Pendaftaran Kursus adalah betul. Sebarang permohonan pendaftaran kursus/penambahan kursus/pengguguran kursus/tarik diri di luar tempoh yang ditetapkan tanpa sebab-sebab yang boleh diterima oleh Universiti, boleh dikenakan denda kecuali pelajar yang mempunyai alasan yang tertentu sahaja akan dipertimbangkan oleh Dekan Fakulti. Pelajar tidak dibenarkan membuat pendaftaran kursus/penambahan kursus/pengguguran kursus / tarik diri kursus semasa minggu peperiksaan.

- Pelajar yang tidak mendaftar kursus maksimum 2 semester berturut-turut tanpa sebarang alasan boleh ditamatkan pengajian dengan menggunakan Borang HEA(B)-09 (Borang Penamatan Pengajian Pelajar).

- Pelajar yang telah ditamatkan pengajian dan merayu untuk menyambung semula pengajian perlu menulis surat rayuan permohonan kemasukan kepada Naib Canselor melalui Dekan Fakulti (perakuan Dekan diperlukan). Penalti RM100 akan dikenakan kepada pelajar bagi setiap rayuan kemasukan semula yang diluluskan.

- *Students are responsible for checking and ensuring that all the particulars stated in their Course Registration Slips are correct. Student who applied to add/drop/withdraw registration after the prescribed period without reasons accepted by the university may be fined. Registration after the prescribed period will only be considered by the Dean of the Faculty for students with specific reasons. Students are not allowed to register add/drop/withdraw during the examination weeks.*

- *Students who do not register for a maximum of 2 consecutive semesters without any reason can be terminated through the submission of the HEA(B)-09 Termination of Study Form.*

- *Students who have been terminated and wish to place an appeal to resume their studies may do so by submitting an appeal letter to the Vice-Chancellor through the Dean (Dean's verification required). A penalty of RM100 will be imposed on students whose application for re-admission has been approved.*

i. Pendaftaran Kursus Pelajar Berstatus Aktif

- Pelajar berstatus Aktif boleh mendaftar kursus secara atas talian tidak melebihi 20 kredit dan tidak kurang daripada 10 kredit kecuali pelajar yang mengikuti Latihan Industri (LI), Projek Tahun Akhir (FYP) dan pelajar Semester Akhir yang akan menamatkan pengajian. Pelajar yang ingin mendaftar melebihi 20 kredit perlu mendapatkan pengesahan daripada RPS dan kelulusan daripada Dekan Fakulti.

- Keterangan mengenai Pendaftaran Kursus pelajar berstatus Aktif diringkaskan seperti Jadual 1.

i. Active Student Course Registration

- *Students who do not take FYP or LI can take more than 20 credits but with the approval from the Dean. All Active students are allowed to register for not more than 20 credits and not less than 10 credits except for those who are involved in Industrial Training and the Final Year Project. Student who wish to register for more than 20 credits, need to obtain verification from their RPS and approval by the Dean.*

- *Table 1 summarises the credits that students can register for each semester based on their status.*

Jadual 1 : Ringkasan Pendaftaran Kursus Pelajar Berstatus Aktif
Table 1 : Summary of Credits for Active Student

Status Pelajar / *Student Status*	**Kredit Minimum / *Minimum Credits***	**Kredit Maksimum / *Maximum Credits***
Pelajar Aktif / *Active Student*	10	20

ii. Pendaftaran Kursus Pelajar Percubaan [P]

- Pelajar dengan status Percubaan tidak dibenarkan untuk mendaftar sendiri secara dalam talian (online). Pelajar ini perlu bertemu dengan RPS untuk mendapatkan nasihat dan mengisi Borang HEA(B)-02[a] (Borang Pendaftaran Kursus: Status Percubaan) sebelum menyerahkannya kepada Penolong Pendaftar Fakulti untuk didaftarkan. Hanya Penolong Pendaftar Fakulti atau Unit Kemasukan & Rekod sahaja yang boleh mendaftarkan kursus bagi pelajar ini. Jumlah kredit yang dibenarkan untuk Pelajar Percubaan adalah seperti Jadual 2 dibawah:

ii. Probation Student Course Registration [P]

- *Student with the "Probation" status are not allowed to register online by themselves. The students must meet their RPS to discuss about the course registration and to complete the HEA(B)-02[a] Course Registration Form: Probation Status before handing it to the Assistant Registrar. Only the Assistant Registrar of Faculty/Admissions and Student Records Unit is allowed to register the subjects for the students in this case. The numbers of credits allowed is as in Table 2 below:*

Jadual 2 : Ringkasan Pendaftaran Kursus Pelajar Percubaan [P]
Table 2 : Summary of Credits for Probation Student [P]

Status Pelajar / *Student Status*	**Kredit Minimum / *Minimum Credits***	**Kredit Maksimum / *Maximum Credits***
Percubaan / *Probation* (P1)	10	12
Percubaan / *Probation* (P2)	8	10
Percubaan / *Probation* (P2*)	8	10

PENAMBAHAN, PENGGUGURAN ATAU TARIK DIRI KURSUS

1. Tambah Kursus

- Tempoh yang dibenarkan untuk penambahan kursus adalah sehingga minggu ke-2 minggu pembelajaran. Pelajar yang lewat mendaftar perlu mengisi Borang HEA(B)-02[b] (Borang Pendaftaran Kursus Lewat) dan menyerahkannya kepada Penolong Pendaftar Fakulti untuk dikemas kini dalam sistem. Permohonan untuk tambah kursus adalah tertakluk kepada kelulusan dan kekosongan kuota.

2. Gugur Kursus

- Tempoh yang dibenarkan untuk menggugurkan kursus adalah sehingga minggu ke-7 minggu pembelajaran. Pelajar perlu mengisi Borang HEA(B)-03 (Borang Permohonan Gugur Kursus). Borang perlu ditandatangani oleh pensyarah kursus, Dekan Fakulti dan diserahkan kepada Penolong Pendaftar Fakulti untuk dikemas kini dalam sistem.

3. Tarik Diri Kursus

- Pelajar dengan persetujuan Pensyarah Kursus dan Dekan Fakulti boleh memohon untuk menarik diri daripada kursus yang telah didaftarkan pada semester yang berkenaan tidak lewat dari hari akhir bekerja pada minggu ke-12 minggu pembelajaran. Pelajar yang ingin menarik diri daripada kursus perlulah mengisi Borang HEA(B)-04 (Borang Permohonan Tarik Diri Kursus).

- Kebenaran untuk pelajar menarik diri daripada mengikuti sesuatu kursus adalah tertakluk kepada jumlah kredit minimum, kecuali dengan kebenaran Dekan.

- Status Tarik Diri (TD) akan dicatatkan dalam rekod pendaftaran kursus dan transkrip akademik pelajar. Walau bagaimanapun, gred tidak akan diambil kira dalam pengiraan PNG dan PNGK.

ADD COURSES, DROP COURSES OR COURSE WITHDRAWAL

1. Adding Courses

- *The time period allowed for the adding of courses is up to the second week of study). The students are required to fill in the HEA(B)-02[b] Late Course Registration Form and submit it to the Assistant Registrar of the Faculty to be updated in the system. Applications for additional courses are subject to quota approval and vacancy.*

2. Dropping Courses

- *The time period allowed to drop courses is up to week 7 (week of study). Students must use the HEA(B)-03 Drop Courses Application Form to be signed by the course lecturer, Dean of the Faculty and submit it to the Assistant Registrar of the Faculty to be updated in the system.*

3. Course Withdrawal

- *With the consent of course lecturer and Dean of the Faculty, a student may apply to withdraw from a course registered in a semester no later than the last working day of week 12 (week of study). To apply for a withdrawal from a course, the student must fill in HEA(B)-04 Withdrawal Courses Application Form.*

- *Permission to allow students to withdraw from a course is subject to the minimum credits allowed except with permission from the Dean.*

- *Withdrawal status (TD) will be recorded in the record of registration and academic transcript. However, the grade will not be included to contribute towards the GPA and CGPA.*

JENIS-JENIS KURSUS

1. KURSUS WAJIB UNIVERSITI

Kursus Wajib Universiti ialah kursus-kursus di luar pengkhususan pelajar. Kursus-kursus ini ditawarkan oleh Jabatan Bahasa & Pengajian Umum dan Pusat Ko-Kurikulum..

Kursus-kursus Wajib Universiti bagi program Diploma ialah:

a) Asas Keusahawanan (SDU22502) – (2 kredit)
Semua pelajar wajib mengambil dan lulus kursus ini. Kursus ini ditawarkan kepada pelajar tempatan dengan mengikut kepada struktur kursus dalam penawaran kurikulum program masing-masing.

b) Falsafah dan Isu Semasa (SDU12902) – (2 kredit)
Semua pelajar wajib mengambil kursus ini. Kursus ini ditawarkan kepada pelajar tempatan dan antarabangsa dengan mengikut kepada struktur kursus dalam penawaran kurikulum program masing-masing.

c) Integriti dan Anti Rasuah (SDU12002) – (2 kredit)
Semua pelajar wajib mengambil dan lulus kursus ini. Kursus ini ditawarkan kepada pelajar tempatan dengan mengikut kepada struktur kursus dalam penawaran kurikulum program masing-masing.

d) Bahasa Melayu (SDB31002) - (2 kredit)
Kursus ini wajib diambil oleh pelajar yang memperoleh gred B+ dan ke bawah dalam subjek Bahasa Melayu, Sijil Pelajaran Malaysia (SPM) termasuk pelajar antarabangsa daripada negara-negara di mana bahasa Melayu diamalkan sebagai bahasa kebangsaan atau bahasa pertuturan mereka, seperti pelajar dari Indonesia, Brunei dan Singapura.

TYPES OF COURSES

1. UNIVERSITY REQUIREMENT COURSES

The University Requirement Courses are courses that are offered outside the student's field of study. These courses are offered by the Languages & General Studies Department and the Co-Curriculum Centre.

The University Requirement Courses for Diploma programmes are:

a) Basic Entrepreneurship (SDU22502) – (2 credits)
All students are required to take and pass this course. This course is offered to local students by following the course structure in the curriculum of their respective programs.

b) Philosophy and Current Issues (SDU12902) – (2 credits)
All students are required to take and pass this course. This course is offered to local students by following the course structure in the curriculum of their respective programs.

c) Integrity and Anti-Corruption (SDU12002) – (2 credits)
All students are required to take and pass this course. This course is offered to local students by following the course structure in the curriculum of their respective programs.

d) Malay Language (SDB31002) - (2 credits)
This course is compulsory for student who obtained a grade B+ and below in Bahasa Melayu subject for Sijil Pelajaran Malaysia (SPM) certificate including international students from countries where Malay Language is used as their national language or spoken language, e.g. students from Indonesia, Brunei and Singapore.

e) Bahasa Inggeris Komunikasi 1 (SDB11102) - (2 kredit)

Semua pelajar yang mendapat gred B+ dan ke bawah dalam subjek Bahasa Inggeris, Sijil Pelajaran Malaysia (SPM) wajib mengambil kursus Bahasa Inggeris Komunikasi 1 dan lulus kursus ini dengan minimum gred D+.

f) Bahasa Inggeris Komunikasi 2 (SDB11202) - (2 kredit)

Pelajar yang lulus SDB11102 Bahasa Inggeris Komunikasi 1 dan pelajar yang memperoleh gred A- dan ke atas dalam subjek Bahasa Inggeris, Sijil Pelajaran Malaysia (SPM) wajib mendaftar dan lulus kursus ini dengan minimum gred D+.

g) Bahasa Inggeris Komunikasi 3 (SDB30102) - (2 kredit)

Pelajar yang lulus SDB11202 Bahasa Inggeris Komunikasi 2 wajib mendaftar dan lulus kursus ini dengan minimum gred D+.

h) Ko-kurikulum (SDZXXXXX)- (2 kredit)

Semua pelajar diploma **DIWAJIBKAN** untuk mengambil **DUA (2)** kredit kursus kokurikulum Badan Beruniform yang ditawarkan secara berpakej. Pendaftaran **DUA (2)** kredit kursus ini perlu dilengkapkan pada semester pertama (1) dan semester kedua (2) tahun pertama pengajian. Bagi pelajar yang mengambil melebihi **DUA (2)** kredit seperti Pasukan Askar Wataniah, pelajar **DIWAJIBKAN** melengkapkan **EMPAT (4)** kredit tersebut bagi tujuan pemakaian pangkat. Manakala, bagi pelajar yang mendaftar program pensijilan Tahfiz TVET, pelajar tidak perlu mengambil kursus kokurikulum badan beruniform tetapi **WAJIB** mendaftar kursus tahfiz dan melengkapkan semua kredit yang ditetapkan. Pemilihan bagi kedua-dua kursus tersebut akan melalui proses saringan.

e) Communicative English 1 (SDB11102) - (2 credits)

Students who obtained a grade B+ and below in English language subject for Sijil Pelajaran Malaysia (SPM) certificate are required to take Communicative English 1 and pass this course with minimum grade D+.

f) Communicative English 2 (SDB11202) - (2 credits)

Students who passed SDB11102 Communicative English 1 and students who obtained a grade A- and above in English language subject for Sijil Pelajaran Malaysia (SPM) certificate are required to take and pass this course with minimum of grade D+.

g) Communicative English 3 (SDB30102) - (2 credits)

Students who passed SDB11202 Communicative English 2 are required to take and pass this course with minimum of grade D+.

h) Co-curriculum (SDZXXXXX)- (2 credits)

*All Diploma students are **COMPULSORY** to register for **TWO (2)** credits of a Co-Curriculum Uniform Bodies Course offered as a package. **TWO (2)** credits of the course must be completed during both the first and second semesters of the first year of study. Students who take a exceeding **TWO (2)** credits, such as the Territorial Army Unit, students are **COMPULSORY** to complete those **FOUR (4)** credits for rank conferment purposes. Meanwhile, students registered in the Tahfiz TVET Certification Programme are not required to take Co-Curriculum Uniform Bodies Course but **MUST** register for the Tahfiz course and complete all the required credits. Selection for both courses will go through a screening process.*

2. KURSUS TERAS

Kursus Teras terdiri daripada kursus-kursus yang wajib diambil oleh semua pelajar. Kursus-kursus ini menjadi keperluan utama untuk pengijazahan. Pelajar yang gagal mana-mana kursus teras mesti mengulanginya dan lulus sebelum layak dipertimbangkan untuk pengijazahan.

3. KURSUS ELEKTIF

Kursus Elektif merupakan beberapa pilihan kursus daripada disiplin program pengajian yang boleh diikuti oleh pelajar bagi menyokong bidang pengkhususan pengajian.

4. KURSUS OPSYEN

Kursus Opsyen adalah kursus diluar bidang pengkhususan yang memberi nilai tambah kepada pelajar.

5. KURSUS AUDIT

Kursus audit merujuk kepada:

i. Kursus yang didaftarkan dalam program terdahulu pelajar yang berkaitan dengan program semasa tetapi tidak memenuhi syarat pemindahan kredit.
ii. Kursus yang didaftarkan dalam program terdahulu pelajar yang tidak berkaitan dengan program semasa pelajar.
iii. Kursus yang didaftarkan dan tidak mempunyai kredit.

2. CORE COURSES

Core Courses are courses specific to a programme that must be taken by students. These courses are part of the requirements for graduation. Students who fail these Core Courses must repeat them and pass before they can graduate.

3. ELECTIVE COURSES

Elective courses are a number of course options from the discipline of the programme that student can follow to support their programme of study specialisation.

4. OPTIONAL COURSES

Optional Courses are courses outside students' field of specialization that provide added value to students.

5. AUDIT COURSES

Audit Courses refers to:

i. A course that is registered in student's previous programme of study which is related to their current programme but does not meet the credit transfer requirements.
ii. A course that is registered in student's previous programme of study which is not related to their current programme.
iii. A course that is registered but has no credit.

PENDEKATAN PEMBELAJARAN DAN PENGAJARAN DI UniMAP

- Kebanyakan Kursus Teras yang ditawarkan merangkumi komponen teori dan komponen praktikal dengan nilaian jam.

- Komponen praktikal terdiri daripada bentuk-bentuk pembelajaran dan pengajaran berikut:

i. **Pembelajaran di dalam makmal dan bengkel -** sepasukan pelajar yang terdiri dari 2-3 orang, menjalankan satu eksperimen. Di dalam beberapa program makmal asas, setiap pelajar menjalankan eksperimen secara individu (1:1) dan bukannya dalam pasukan.

ii. **E-pembelajaran –** pendekatan pembelajaran yang diperkukuhkan dengan ICT, yang melengkapkan pendekatan pembelajaran konvensional. Pelajar mempelajari kursus atau topik-topik tertentu menggunakan modul yang boleh diakses dari laman web UniMAP. Modul mengandungi nota kuliah dalam bentuk multimedia, yang merangkumi audio, video, grafik, animasi, simulasi, permainan, dan pelbagai lagi aktiviti berbentuk interaksi.

iii. **Pendedahan kepada industri –** pelajar menjalankan lawatan ke industri selama tempoh masa tertentu beberapa kali sepanjang pengajiannya di UniMAP. Ini termasuklah program InTra (Latihan Industri), Keusahawanan Industri, dan lain-lain lagi.

TEACHING AND LEARNING APPROACHES AT UniMAP

- *Many of the Core Courses offered include theory component and practical component, the values of contact hours for each.*

- *The practical components consist of the following teaching and learning modes:*

i. ***Lab and workshop Intensive Learning*** *– two or three students carry out an experiment in a group. In some basic lab intensive programmes, each student will conduct an experiment individually (1:1) and not in a group.*

ii. ***E-Learning*** *– Learning approach that is reinforced using ICT to complement the conventional approach. Students obtain access to course modules and topics via the UniMAP website. The modules consist of lecture notes in multimedia format such as audio, video, graphic, animation, simulation, games and other interactive activities*

iii. ***Exposure to Industry*** *– Students will make multiple visits to industry for a certain period of time throughout their study at UniMAP. These include InTra (Industrial Training), Industrial Entrepreneurship Exposure and others.*

LATIHAN INDUSTRI

- Latihan Industri merupakan salah satu syarat/kursus wajib Universiti bagi setiap pelajar Universiti Malaysia Perlis (UniMAP) sebelum dianugerahkan pengijazahan. Latihan Industri ini memberi peluang kepada pelajar-pelajar Universiti merasai konsep pembelajaran dan pengajaran serta pengalaman industri dalam dunia pekerjaan sebelum menempuhi alam pekerjaan kelak. Disamping itu juga, dengan kemahiran dan pengetahuan yang telah diadaptasikan dapat memenuhi hasrat dan keperluan kebolehpasaran graduan demi kemajuan negara.

- Tujuan utama Latihan Industri dilaksanakan adalah:-

i. Menyemai sikap profesional di kalangan pelajar.
ii. Menyedarkan pelajar tentang kepentingan dan kaitan yang kuat antara latihan industri, makmal/amali dan teori yang dipelajari.
iii. Memberi pendedahan awal kepada pelajar tentang persekitaran dan keadaan di industri serta amalannya. Pelajar berpeluang melengkapkan diri sebagai bekalan untuk menghadapi cabaran akan datang, baik di dalam pengajian akademik mahupun rintangan yang mendatang.

- Tempoh Latihan Industri ditentukan mengikut bidang pengajian seperti Jadual 3.

INDUSTRIAL TRAINING

- *Industrial Training is one of the University compulsory courses for student of University Malaysia Perlis (UniMAP) before graduating. The Industrial Training Course gives an opportunity for students to experience the working llife at industrial world for the preparation in the future. In addition, the adaptation of industrial experience will meet the needs of graduate employment worldwide and the progress of the country.*

- *The main objectives of the Industrial Training are to:-*

i. Instill professionalism in students
ii. Raise students' awareness on the importance and connection between industrial and lab-intensive training, and engineering theories.
iii. Provide students with early exposure to industrial environment and practices. Students also are given the opportunity to equip themselves with the necessary skills and knowledge needed in their respective academic and training fields.

- *The period of Industrial Tranining is determined according to the field of study as in Table 3.*

Jadual 3 : Tempoh Latihan Industri
Table 3 : Industrial Training Period

Bidang Pengajian / *Field of Study*	**Kredit / *Credits***	**Tempoh Latihan Industri / *Industrial Training Period***
Diploma Kejuruteraan / *Diploma in Engineering*	8	16 Minggu / *weeks*
Diploma Teknologi Kejuruteraan / *Diploma in Engineering Technology*	8	16 Minggu / *weeks*

TEMPOH PENGAJIAN MINIMUM DAN MAKSIMUM

Pelajar hendaklah menamatkan pengajian mengikut tempoh yang ditetapkan oleh universiti. Tempoh pengajian mengikut program pengajian universiti adalah seperti dalam Jadual 4. Tempoh pengajian adalah berbeza bagi pelajar yang memperolehi pengecualian kredit, penangguhan semester dan pelajar yang menduduki Semester Pendek.

MINIMUM AND MAXIMUM PERIOD OF STUDY

Students must graduate according to the time period as stipulated by the university. The duration of study according to each programme of study is as listed in Table 4. The duration of study is different for students who obtain credit exemption, postponed their semester and for students who sit for the Short Semester.

Jadual 4 : Tempoh minimum atau maksimum pengajian pelajar
Table 4 : The minimum and maximum period of study

Program Pengajian / *Programme*	**Minimum (Semester) / *Minimum (Semester)***	**Maksimum (Semester) / *Maximum (Semester)***
Sarjana Muda Kejuruteraan / *Bachelor of Engineering*	8	14
Sarjana Muda Teknologi Kejuruteraan / *Bachelor of Engineering Technology*	8	14
Sarjana Muda Teknologi / *Bachelor of Technology*	7	12
Sarjana Muda Perniagaan / *Bachelor of Business*	6	10
Sarjana Muda Komunikasi Media Baharu / *Bachelor of New Media Communication*	6	10
Diploma Kejuruteraan / *Diploma in Engineering*	6	10
Diploma Teknologi Kejuruteraan / *Diploma in Engineering Technology*	6	12

PERTUKARAN PROGRAM PENGAJIAN

- Permohonan pertukaran program pengajian pelajar bermaksud permohonan seseorang pelajar untuk menukar program pengajian sama ada program pengajian yang ditawarkan dalam Fakulti yang sama atau pertukaran program sedia ada kepada program pengajian yang ditawarkan oleh Fakulti yang lain atas sebab-sebab tertentu yang diperakukan oleh Dekan Fakulti yang berkaitan.

- Pertukaran program pengajian adalah tidak digalakkan. Walau bagaimanapun, permohonan pertukaran program pengajian boleh dipertimbangkan dengan alasan-alasan yang kukuh dan tertakluk kepada garis panduan seperti berikut:

1. Pertukaran program pengajian mestilah dipohon dalam tempoh dua (2) semester pertama pengajian di UniMAP. Permohonan pertukaran program pengajian boleh dilakukan seawal semester 1 pengajian. Sekiranya permohonan diluluskan, status pelajar dengan program baharu akan berkuatkuasa pada semester yang berikutnya. Pelajar perlu mengisi borang HEA(B)-06 Borang Permohonan Pertukaran Program Pengajian.

2. Bagi pelajar yang mendapat penajaan dan pembiayaan, pelajar mestilah memaklumkan dan mendapatkan kelulusan daripada penaja masing-masing terlebih dahulu sebelum membuat pemohonan.

TRANSFER OF STUDY PROGRAMME

- *Student application for transfer of programme is an application by the student to transfer from their current study programme to either another programme offered by the same Faculty or to an existing programme offered by another Faculty for specific reasons as certified by the Dean of the related Faculty.*

- *A transfer between programmes is not recommended. However, the application for transfer will be considered if the student has strong reasons and adheres to the following guidelines:*

1. *The programme transfer must be applied within the first two (2) semesters of study at UniMAP. The application can be done as early as the first semester of academic session. If the application is approved, the student's status with regards to the new programme will take place in the following semester. The student will have to complete the HEA(B)-06 Change Programme of Study Application Form.*

2. *Students who are under sponsorship and funding must inform and get approval from their respective sponsors before applying.*

3. Borang permohonan mestilah disertakan dengan lampiran:

a) Salinan keputusan peperiksaan peringkat SPM.
b) Salinan keputusan STPM/ Matrikulasi/ Diploma/setaraf;
c) Salinan keputusan MUET
d) Slip keputusan peperiksaan semester sebelumnya (dikecualikan bagi permohonan pada semester pertama).
e) Surat kebenaran daripada penaja (sekiranya berkaitan).

- Pertukaran program pengajian adalah tidak dibenarkan kepada pemohon yang statusnya telah kembali aktif setelah berjaya dalam permohonan rayuan kemasukan semula.

- Permohonan pertukaran program hanya dibenarkan sekali sahaja sepanjang tempoh pengajian.

- Kebenaran untuk pertukaran program pengajian adalah tertakluk kepada perakuan Dekan Fakulti asal dan persetujuan Dekan Fakulti yang dipohon, perakuan Pengarah Pusat Pengurusan Akademik serta kelulusan Naib Canselor atau Timbalan Naib Canselor (Akademik dan Antarabangsa).

3. The following documents must be attached with the application form:

a) A copy of SPM level examination results.
b) A copy of STPM / Matriculation / Diploma / equivalent results;
c) A copy of MUET results
d) The previous semester examination results slip (excluded for first semester applications).
e) A letter of permission from the sponsor (if applicable).

- *The programme transfer is not allowed for students whose Active status has been restored upon a successful Re-admission appeal.*

- *The programme transfer is only allowed once during the student's entire study period.*

- *Permission for programme transfer is subject to the approval of the Dean of the original Faculty and consent of the Dean of the Faculty applied for, endorsement by the Director of the Academic Management Centre and approval of the Vice Chancellor or Deputy Vice Chancellor (Academic and International).*

PENANGGUHAN PENGAJIAN

- Penangguhan pengajian adalah kebenaran kepada pelajar untuk tidak mengikuti pengajian pada sesuatu semester atas alasan-alasan tertentu yang dibenarkan Universiti.

- Permohonan penangguhan pengajian dibenarkan kepada pelajar yang mempunyai masalah kesihatan dan disahkan sakit oleh Hospital Kerajaan/Doktor Panel Universiti / Pusat Kesihatan UniMAP sahaja. Bagi kes-kes tertentu sijil sakit yang bukan daripada Hospital Kerajaan atau Doktor Panel Universiti perlu mendapat perakuan Pusat Kesihatan UniMAP. Permohonan yang diasaskan selain daripada masalah kesihatan boleh dipertimbangkan sekiranya mempunyai alasan yang munasabah dan mendapat kelulusan Naib Canselor/Timbalan Naib Canselor (Akademik & Antarabangsa).

- Pelajar yang memohon untuk menangguhkan pengajian perlu mengisi Borang HEA(B)-07 (Borang Permohonan Tangguh Pengajian) yang boleh didapati di Fakulti. Permohonan perlu mendapat perakuan dan kelulusan yang berikut:

1. Pengesahan Rakan Pendamping Siswa (RPS)
2. Perakuan Dekan Fakulti
3. Perakuan Pengarah Pusat Pengurusan Akademik dan
4. Kelulusan Naib Canselor atau Timbalan Naib Canselor (Akademik & Antarabangsa).

POSTPONEMENT OF STUDY

- *Postponement of studies is an authorization for students to postpone their studies for a semester for specific reasons permitted by the University.*

- *Postponement of study is permitted for students who have health complications and illnesses which has been verified by government hospitals or the University panel of doctors or Pusat Kesihatan UniMAP. For certain cases, students who present medical certificates from hospitals other than those mentioned, must obtain endorsement from Pusat Kesihatan UniMAP. An application made due to reasons other than ill health may be considered if it is reasonable and approved by the Vice Chancellor / Deputy Vice Chancellor (Academic and International).*

- *Students can apply for postponement of study by filling in the HEA(B)-07 Deferment of Study Application Form which can be obtained from the Registrar or their Faculty. Application must be:*

1. *Confirmation by the Rakan Pendamping Siswa (RPS),*
2. *Verification by the Dean of Faculty,*
3. *Verification by the Director of Academic Management, and*
4. *Approved by the Vice Chancellor / Deputy Vice Chancellor (Academic and International)*

- Borang pemohonan penangguhan pengajian pelajar perlu dikemukakan sebelum minggu ketujuh(7) pengajian. Pemohonan selepas minggu ketujuh(7) hanya dibenarkan atas sebab kesihatan atau kes-kes tertentu yang mendapat kelulusan Naib Canselor/Timbalan Naib Canselor (Akademik & Antarabangsa).

- Pelajar tidak dibenarkan menangguhkan pengajian melebihi 2 semester berturut-turut kecuali dengan kelulusan Naib Canselor/Timbalan Naib Canselor (Akademik & Antarabangsa). Bagi kes selain sebab kesihatan, pelajar hanya dibenarkan pulang/keluar daripada universiti setelah permohonan penangguhan pengajian mendapat kelulusan universiti. Sekiranya pelajar telah pulang sebelum kelulusan diperoleh, ia adalah di bawah tanggungjawab pelajar sendiri.

- Bagi pelajar yang menangguhkan pengajian atas sebab kesihatan/sakit atau untuk alasan-alasan yang dibenarkan, semester berkenaan tidak akan diambil kira dalam pengiraan semester yang digunakan untuk pengijazahan (Tanpa Penalti). Bagi kes Tanpa Penalti, kursus yang didaftarkan pada semester tersebut akan digugurkan, dan sekiranya terdapat keputusan peperiksaan yang telah disahkan pada peringkat Majlis Peperiksaan Universiti (MPU), keputusan peperiksaan tersebut juga akan terbatal.

- Pelajar akan diberikan peringatan secara bertulis oleh Fakulti sekiranya didapati tidak mendaftar pada sesuatu semester tanpa memberi sebarang permohonan penangguhan pengajian. Pelajar yang tidak memberi sebarang maklum balas dalam sesuatu tempoh mencapai dua (2) semester berturut- turut boleh ditamatkan pengajian dan disahkan berhenti daripada Universiti.

- *Application for a postponement of study should be submitted before the 7th week of the semester. Application made after that period will only be allowed for medical reasons and other reasons with the approval of the the Vice Chancellor / Deputy Vice Chancellor (Academic and International).*

- *Students are not allowed to postpone their studies for more than 2 semesters consecutively except with the approval of the Vice Chancellor / Deputy Vice Chancellor (Academic and International). In cases not related to health complications, students are only allowed to leave the university after the application for postponement is approved by the university. Students who leave the university before the approval is allowed to do so at their own risk.*

- *Students who postpone their studies due to health or other permissible reasons, the semester will not be taken into account in the calculation for graduation (without penalty). In the case of Without Penalty, courses registered for the semester will be dropped, and examination results confirmed by University Examination Council will also be cancelled.*

- *Students will be given a written reminder by the Faculty if they are found to be unregistered during a semester without any application for study postponement. Students who do not respond within a period of up to two (2) consecutive semesters will be terminated from their studies and confirmed as dropouts from the University.*

PENAMATAN PENGAJIAN

- Fakulti perlu memberi peringatan secara bertulis kepada pelajar sekiranya pelajar didapati tidak mendaftar pada sesuatu semester tanpa membuat sebarang permohonan penangguhan pengajian.

- Pelajar yang tidak memberi sebarang maklum balas dalam sesuatu tempoh mencapai dua (2) semester berturut-turut boleh ditamatkan pengajian dan disahkan berhenti dari Universiti.

- Fakulti perlu melengkapkan borang HEA(B)-09 yang mengandungi:.

  1. Butiran diri pelajar
  2. Butiran akademik pelajar (Sila sertakan rekod peribadi dan rekod akademik pelajar yang boleh didapati dalam sistem AMIS)
  3. Perakuan Dekan Fakulti

- Borang yang telah lengkap diisi bersama lampiran rekod peribadi dan akademik pelajar dan lampiran surat menyurat peringatan kepada pelajar perlu dikemukakan kepada Unit Kemasukan dan Rekod Pelajar, Bahagian Pengurusan Akademik.

- Borang penamatan pengajian perlu dikemukakan ke Pusat Pengurusan Akademik untuk perakuan.

- Pihak Pusat Pengurusan Akademik akan meneliti dan mengesahkan status akademik pelajar berdasarkan rekod yang dikemukakan oleh Fakulti dan mendapatkan maklumat akhir daripada Jabatan Bendahari berkaitan status yuran dan lain-lain hutang tertunggak sebelum dikemukakan untuk pertimbangan kelulusan daripada Timbalan Naib Canselor (Akademik dan Antarabangsa).

TERMINATION OF STUDY

- *The Faculty must provide a written warning to the student if the student is found to be unregistered for the semester without any application for study postponement.*

- *Students who do not respond within a period of up to two (2) consecutive semesters will be terminated from their studies and confirmed as dropouts from the University.*

- *Faculty must complete HEA(B)-09 form which contains:*

  1. *Student personal details*
  2. *Student academic details (Please include personal and academic records of students which are available in the AMIS system)*
  3. *Certification of Dean of the Faculty*

- *The completed form with the attachment of the student's personal and academic records and the attachment of other warning letters to the student must be submitted to the Student Admissions and Records Unit, Academic Management Division.*

- *The form will then be submitted to the Academic Management Centre for certification.*

- *The Centre for Academic Management will examine and confirm the academic status of students based on the records submitted by the Faculty and obtain final information from the Treasury Department regarding the status of fees and other outstanding debts before the submission for consideration by the Deputy Vice Chancellor (Academic and International).*

- Setelah mendapat pertimbangan Naib Canselor / Timbalan Naib Canselor (Akademik & Antarabangsa), Unit Kemasukan dan Rekod Pelajar, Bahagian Pengurusan Akademik akan mengeluarkan surat rasmi kepada pelajar dan mengemaskini sistem AMIS mengikut tarikh kuatkuasa penamatan pengajian.

- Sekiranya pelajar mempunyai baki hutang tertunggak, jumlah tersebut akan dinyatakan di dalam surat rasmi dan pelajar akan diberikan tempoh masa untuk menjelaskan hutang sebelum sebarang tindakan undang-undang diambil.

- *Upon consideration of the Vice Chancellor / Deputy Vice-Chancellor (Academic and International), Student Admissions and Records Unit, Academic Management Division will issue an official letter to students and update the AMIS system in accordance with the effective date of termination of the study.*

- *If a student has a balance of outstanding debts, the amount will be stated in the formal letter and the student will be given a period of time to pay off the debt before any legal action is taken.*

PEMINDAHAN KREDIT

- Pemindahan kredit ditakrifkan sebagai pengiktirafan sejumlah kredit yang telah diperoleh oleh seseorang pelajar dalam sesuatu program terdahulu ke program yang sedang diikuti di UniMAP. Terdapat 2 kategori pemindahan kredit iaitu:

  1. **Pemindahan Kredit Vertikal atau Pengecualian Kredit**
     Pemindahan kredit daripada peringkat rendah ke peringkat yang lebih tinggi seperti Sijil ke Diploma ATAU Diploma ke Sarjana Muda. Pemindahan Kredit yang dibenarkan adalah Pemindahan Kredit Tanpa Gred (Pengecualian Kredit).

  2. **Pemindahan Kredit Horizontal**
     Pemindahan kredit daripada program pada tahap kelayakan yang sama seperti daripada Diploma ke Diploma ATAU Sarjana Muda ke Sarjana Muda. Pemindahan Kredit yang dibenarkan adalah Pemindahan Kredit Dengan Gred atau Pemindahan Kredit Tanpa Gred (Pengecualian Kredit) berdasarkan situasi.

- Syarat umum pemindahan pemindahan kredit adalah:

  i. Gred lulus – Gred lulus minimum bagi kursus yang layak dipertimbangkan untuk pemindahan kredit ialah Gred C atau nilai gred 2.00.
  ii. Nilai kredit – nilai kredit bagi kursus yang layak dipertimbangkan untuk pemindahan kredit mestilah sama atau lebih tinggi daripada nilai kredit kursus yang dipohon.
  iii. Kesetaraan kandungan kursus-kursus yang terlibat dengan pemindahan kredit mestilah tidak kurang daripada 80%.

CREDIT TRANSFER

- *Credit Credit transfer is defined as the accreditation of the credits accumulated by a student from his/her previous programme to the current programme pursued at UniMAP.*

  1. ***Vertical Credit Transfer or Credit Exemption***
     Credit transfer from a lower to a higher level of qualification such as from Certificate to Diploma OR from Diploma to Bachelor's Degree. The credit transfer permitted is the Credit Transfer Without Grade (Credit Exemption).

  2. ***Horizontal Credit Transfer***
     Credit transfer from one programme to another programme at the same academic level, i.e., from Diploma to Diploma OR Bachelor's Degree to Bachelor's Degree. The credit transfer permitted is either the Credit Transfer with Grades or Credit Transfer without Grades (Credit Exemption) based on the situation.

- *The general requirements for credit transfer are as follow:*

  i. Passing Grade – Minimum passing grade of either a C grade or a 2.00 grade points for courses that are eligible for credit transfer.
  ii. Credit value – credit value point of the equivalent course must be equal or higher than the credit value point of the course being applied.
  iii. The content of the courses involved with credit transfer must be equal to or more than 80% with the course being applied.

SEMESTER TAMBAHAN

- Semester Tambahan ditawarkan kepada pelajar-pelajar yang mahu mengulang kursus-kursus yang gagal pada semester biasa, tertakluk kepada syarat dan kelulusan oleh Senat Universiti. Tempoh Semester Tambahan merangkumi empat(4) minggu pembelajaran dan satu(1) minggu peperiksaan. Cuti pertengahan semester dan ulangkaji tidak diperuntukkan untuk semester ini.

- Pelajar wajib mendaftarkan kursus dan pendaftaran hendaklah tidak melebihi 9 kredit per semester dan terhad kepada 16 kredit berdaftar untuk keseluruhan tahun pengajian. Pembelajaran dan pengajaran adalah dalam bentuk tutorial selama 4 minggu dan kehadiran pelajar dalam tutorial yang dikendalikan juga diwajibkan dan kedatangan adalah direkodkan.

- Syarat-syarat kelayakan mengikuti Semester Tambahan adalah:

1. Kursus yang ditawarkan dalam Semester Tambahan layak dimohon oleh pelajar yang mendapat:

    a. Pelajar yang mendapat gred D dan ke bawah untuk Kursus Teras
    ATAU
    b. Pelajar yang mendapat gred C- dan ke bawah untuk Kursus Wajib Universiti;
    DAN
    c. Lulus penilaian berterusan dengan markah 40% bagi kursus-kursus yang berkaitan.

ADDITIONAL SEMESTER

- *The Additional Semester are offered to students who wish to repeat failed courses in the regular semester, subject to conditions and approval by the University Senate. Additional semester period includes four (4) weeks of study and one (1) week of exams. Mid-semester break and revision week are not provided for this semester.*

- *Students must register for courses and enrollment must not exceed 9 credits per semester and be limited to 16 credits registered for the entire academic year. Learning and teaching are in the form of a 4-week tutorial and student attendance in the tutorial is also required and attendance is recorded.*

- *The eligibility requirements for the Additional Semester are:*

1. *Courses offered in the Additional Semester are eligible for students who have:*

    a. Student who obtained a grade D and below for Core Courses;
    OR
    b. Student who obtained grade C- and below for University Requirement Courses;
    AND
    c. Obtain a passing mark for continuous assessment with a score of 40% for relevant courses.

2. Kebenaran untuk mengambil Semester Tambahan bagi tujuan membaiki gred (D+ atau C- bagi Kursus Teras) hanya akan diberikan kepada pelajar tahun akhir sahaja.

3. Pelajar yang mendapat gred F* dan X tidak layak untuk mendaftar Semester Tambahan.

4. Semester Tambahan hanya boleh diduduki oleh pelajar yang telah mendaftar dan membayar yuran sahaja. Tiada rayuan pengecualian bayaran dibenarkan untuk membolehkan pelajar membuat pendaftaran.

5. Pelajar yang terlibat dengan latihan industri semasa semester tambahan berlangsung tidak dibenarkan untuk mengikuti semester tambahan.

2. *Permission to take Additional Semester for the purpose of grade improvement (D+ or C- for Core Courses) will only be given to final year students.*

3. *Students who have F * and X grades are not eligible to enroll in additional semesters.*

4. *Additional Semester can only be taken by students who have registered and paid the fees. Students are not able to apply for exemption in payment when registering.*

5. *Student engaged in industrial training during the Additional Semester are not allowed to attend the Additional Semester*

SISTEM PEPERIKSAAN DAN PENILAIAN

- Keputusan sesuatu kursus biasanya ditentukan berdasarkan komponen penilaian secara berterusan dan peperiksaan. Walau bagaimanapun, penilaian sesuatu kursus adalah tertakluk kepada keperluan kursus tersebut yang telah diluluskan oleh Senat.

- Peperiksaan akhir diadakan pada hujung semester. Setiap pelajar mestilah terlebih dahulu memenuhi syarat kehadiran ke kuliah, tutorial, amali dan sebagainya sebelum layak menduduki peperiksaan. Pelajar yang gagal memenuhi syarat kehadiran 80% boleh dihalang daripada menduduki peperiksaan akhir.

- Prestasi pelajar dalam sesuatu kursus dinilaikan oleh gred yang diperoleh. Hubungan antara gred dan mata nilai adalah seperti dalam Jadual 5 :

EXAMINATION AND EVALUATION SYSTEM

- *Student results in a course are usually determined based on the components of continuous assessment and examination. However, the assessment of a course is subject to the requirements of the course which have been approved by the Senate.*

- *The final exam is conducted at the end of the semester. Every student must first meet the attendance requirements for lectures, tutorials, practical and so on before being eligible to sit for the exam. Students who fail to meet the 80% attendance requirement may be barred from sitting the final exam.*

- *Student performance in a course is presented by the grades obtained. The relationship between grade and point value is as shown in Table 5 :*

Gred / *Grade*	Nilai Gred / *Point Value*
A	4.00
A-	3.75
B+	3.50
B	3.00
B-	2.75
C+	2.50
C	2.00
C-	1.75
D+	1.50
D	1.00
D-	0.75
F	0.00

Jadual 5 : Hubungan Antara Gred dan Mata Nilai
Table 5 : Relationship Between Grade and Point Value

- Gred LULUS untuk sesuatu kursus adalah seperti berikut:-

i. Gred LULUS bagi sesuatu kursus Wajib Universiti adalah Gred C dan ke atas (Gred A hingga C)
ii. Gred LULUS bagi sesuatu kursus Teras adalah Gred D+ dan ke atas (Gred A hingga D+).

- *Passing grades for a course are as follows;*

i. The grade for PASS for a University Requirement course is Grade C and above (Grade A to C)
ii. The grade for PASS for a Core course is Grade D+ and above (Grade A to D+)

Jadual 6 : Pengiraan PNG dan PNGK:
Table 6 : Calculation of GPA and CGPA

KURSUS/ *COURSE*	KREDIT/ *CREDIT*	NILAI GRED/ *GRADE VALUE* [NG]	GRED/ *GRADE* [G]	JUMLAH/ *TOTAL* NG
QDQ10103	3	3.75	A-	11.25
EDJ16002	2	2.50	C+	5.00
EDJ17303	3	3.50	B+	10.50
SDU12302	2	4.00	A	8.00
SDB10102	2	1.75	C-	3.50
EDJ17703	3	2.75	B-	8.25
EDJ28003	3	3.00	B	9.00
	18			55.50
PNG [*GPA*] = 55.50/18 = 3.08				
QDQ20303	3	3.50	B+	10.50
EDJ29403	3	2.00	C	6.00
EDJ28503	3	4.00	A	12.00
SDB30102	2	3.50	B+	7.00
SDU12902	2	3.75	A-	7.50
EDJ29703	3	2.50	C+	7.50
	16			50.50
PNG [*GPA*] = 50.50/16 = 3.16				

PNGK [CGPA]	= Jumlah NG Terkumpul [*Total Accumulated Grade Value*] / Jumlah Bil. Kredit Terkumpul [*Total Accumulated Credits*] = 55.50 + 50.50 / 18 + 16 = 3.12

RAYUAN SEMAKAN SEMULA KEPUTUSAN PEPERIKSAAN

- Atas sebab-sebab tertentu, pelajar mungkin ingin memohon untuk penyemakan dijalankan ke atas keputusan peperiksaan akhir semester pelajar. Pelajar hanya dibenarkan memohon menyemak semula keputusan peperiksaan akhir semester dalam tempoh 10 hari selepas keputusan rasmi peperiksaan dikeluarkan oleh Pusat Pengurusan Akademik. Permohonan selepas tempoh ini tidak akan dipertimbangkan.

- Pelajar perlu menghantar Borang HEA(C)-02(a) (Borang Rayuan Semakan Semula Keputusan Peperiksaan) kepada Unit Peperiksaan & Pengijazahan (UPP), Bahagian Pengurusan Akademik, Pusat Pengurusan Akademik. Borang rayuan hendaklah dikemukakan dalam tempoh 10 hari bermula dari hari keputusan rasmi diumumkan. Pelajar perlu mengisi borang dalam dua (2) salinan. Satu (1) salinan adalah untuk simpanan pelajar. Kadar bayaran rayuan ialah RM50 untuk setiap kursus.

PENGGUNAAN BAHASA INGGERIS

- Bahasa Melayu adalah bahasa rasmi universiti. Walau bagaimanapun Bahasa Inggeris digunakan secara meluas dalam proses pembelajaran dan pengajaran. Ini adalah untuk membantu pelajar dalam kerjaya mereka. Bagi kursus-kursus yang diajar dalam bahasa Inggeris, peperiksaan akan dijalankan dalam bahasa yang sama.

APPEAL FOR EXAMINATION RESULTS REVISION

- *In certain cases, a student might wish to apply for a revision of their examination results. Students are only allowed to appeal for a revision within the duration of 10 days after the examination results are officially released by the Academic Management Centre (AMC). Application after this duration will not be considered.*

- *Students must submit the HEA(C)-02(a) form (Appeal for Review of Examination Results) to the Examination & Graduation Unit, Academic Management Division, and Academic Management Centre (AMC). The appeal form must be submitted within the period of 10 days after the official result is announced. Students will have to fill in their details in two (2) copies, one of which is the student copy. Students will be charged RM50 per course for each course appealed.*

ENGLISH LANGUAGE USE

- *Malay is the official language of the university. However English is used widely in the teaching and learning process at UniMAP. This is to help students in their future career. For courses that are taught in English, the examination will be conducted in the same language.*

SISTEM RAKAN PENDAMPING SISWA (RPS)

- Sistem Penasihatan Akademik menjadi penghubung antara pelajar dengan pensyarah untuk berbincang dan membuat keputusan berkenaan rancangan pengajian pelajar. Walaupun pelajar mendaftar sendiri secara dalam talian (*on-line)*, pelajar perlu berjumpa dengan Rakan Pendamping Siswa (RPS) untuk mendapatkan nasihat semasa tempoh pendaftaran.

- RPS adalah satu sistem di mana staf akademik menyelia sekumpulan kecil pelajar sepanjang tempoh pengajian pelajar di UniMAP. 'Penyeliaan' di sini melibatkan perjumpaan yang kerap secara tidak formal, di mana pelajar boleh bersantai dengan staf yang berperanan sebagai “rakan" bagi membincangkan isu-isu akademik dan sosial yang berkenaan dengan mereka. Pelajar yang mempunyai prestasi akademik yang tidak memuaskan boleh merujuk kepada RPS sebagai 'mentor', dan pelajar tersebut menjadi 'mentee', di mana ini akan benar-benar membantu pelajar dalam setiap perkara yang memerlukan penyelesaian.

Maklumat lanjut berkaitan peraturan-peraturan boleh dirujuk kepada Peraturan Akademik (Sarjana Muda & Diploma) yang terkini.

BUDDY SYSTEM (RAKAN PENDAMPING SISWA)

- *Buddy System (Rakan Pendamping Siswa) or RPS is a system which connects students and lecturers to allow them to discuss and decide on students' study plan. Even though course registration is done via online by students, they are advised to meet their RPS during the registration exercise for advisory purposes.*

- *In the system, an academic staff supervises a small group of students for the whole duration of the students' study period at UniMAP. 'Supervision' here entails frequent meetings under informal settings, where students are able to discuss about academic and social issues with their lecturers who act as a 'buddy' to them. Students who have unsatisfactory academic performance may refer to their RPS as a mentor, and the student is a 'mentee'.*

More information related to the regulations can be referred to the latest Academic Regulations (Bachelor Degree & Diploma).

UniMAP Academic Guide

Online Student Information

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Pejabat Timb. Naib Canselor (Akademik & Antarabangsa) / *Deputy Vice Chancellor (Academic & International) Office*	04-941 4159
Pusat Pengurusan Akademik (AMC) / *Academic Management Centre*	04-941 4158
Bahagian Pemantapan Akademik (AED) / *Academic Enhancement Division*	04-941 4157
Bahagian Pendidikan Fleksibel *Flexible Education Division*	04-9414321
Bahagian Pengurusan Dasar TVET Management Policy TVET Division	04-9414322
Bahagian Pengurusan Akademik (AMD) / *Academic Management Division*	
▪Unit Kemasukan dan Rekod Pelajar / *Student Admissions & Records Unit*	04-941 4056/4065
▪Unit Peperiksaan dan Pengijazahan / *Examination & Convocation Unit*	04-941 4057/4058
▪Unit SENAT / *Senat Unit*	04-941 4060
Jabatan Bendahari / *Bursary Department*	04-941 4020/4021/4022
Jabatan Pendaftar / *Registrar Department*	04-941 4081
Pusat Pembangunan and Perkhidmatan Pelajar (P3P) / *Centre for Student Development and Services*	04-941 4434
Perpustakaan Tuanku Syed Faizuddin Putra (PTSFP) / *Tuanku Syed Faizuddin Putra Library*	04-941 4461/1162

FACULTY OF ELECTRICAL ENGINEERING & TECHNOLOGY (FKTE)

Programmes Offered:

1. Bachelor of Electrical Engineering with Honours
2. Bachelor of Mechatronic Engineering with Honours
3. Bachelor of Electrical Engineering Technology (Industrial Power) with Honours
4. Bachelor of Electrical Engineering Technology (Robotic And Automation Technology) with Honours
5. Bachelor of Technology in Electrical Maintenance System with Honours
6. Diploma in Electrical Engineering
7. Diploma in Mechatronic Engineering

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UR4522001
Diploma in Electrical Engineering

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who are competent in electrical engineering fields as demonstrated through career development

PEO 2
Graduates who are involved in community or professional organization and make contribution towards society.

PEO 3
Graduates who pursue continuing education opportunities

PEO 4
Graduates who make contribution through innovation and entrepreneurship

PROGRAMME OUTCOMES (PO)

PO1
Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices

PO2
Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity

PO3
Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required

PO4
Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

PO5
Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations

PO6
Consider sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems

PO7
Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion

PO8
Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings

PO9
Communicate effectively and inclusively on well-defined engineering activities with the
engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions

PO10
Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments

PO11
Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge

PO12
Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities.

FACULTY OF ELECTRICAL ENGINEERING & TECHNOLOGY

CURRICULUM STRUCTURE
UR4522001 DIPLOMA IN ELECTRICAL ENGINEERING INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (73 CREDITS)	EDJ12803 Electrical Engineering Skills [Kemahiran Kejuruteraan Elektrik]	EDJ13003 Electric Circuit I [Litar Elektrik I]	EDJ22903 Electric Circuit II [Litar Elektrik II]	EDJ22303 Electrical Instrumentation and Measurement [Peralatan Elektrik dan Pengukuran]	EDJ32003 Power System II [Sistem Kuasa II]	EDJ30108 Industrial Training [Latihan Industri]
	EDJ12102 Computer Programming [Pengaturcaraan Komputer]	EDJ12603 Electronic Devices [Peranti Elektronik]	EDJ22103 Programmable Logic Controller [Pengawal Logik Boleh Atur Cara]	EDJ22403 Power System I [Sistem Kuasa I]	EDJ32103 Power Electronics [Elektronik Kuasa]	
	EDJ12302 Computer Aided Drawing [Lukisan Terbantu Komputer]	EDJ12703 Microcontroller [Mikropengawal]	EDJ22203 Analogue Electronics [Elektronik Analog]	EDJ22503 Electrical Installation Design [Reka bentuk Pemasangan Elektrik]	EDJ32503 Power System Commissioning and Maintenance Practice [Amalan Pertauliahan dan Penyelenggaraan Sistem Kuasa]	
	EDJ12902 Introduction to Electrical Engineering [Pengenalan kepada Kejuruteraan Elektrik]	EDJ12202 Engineering Science [Sains Kejuruteraan]	EDJ22802 Industrial Safety, Quality Management & Ethics [Keselamatan Industri, Pengurusan Kualiti & Etika]	EDJ22603 Control Principle [Prinsip Kawalan]	EDJ32304 Final Year Project [Projek Tahun Akhir]	
	EDJ12403 Digital System [Sistem Digit]			EDJ22703 Electrical Machine and Application [Mesin Elektrik dan Aplikasi]	EDJ32403 Renewable Energy System Maintenance [Penyelenggaraan Sistem Tenaga Boleh Diperbaharui]	
COMMON CORE COURSES (9 CREDITS)		QDQ10103 Mathematics I [Matematik I]	QDQ20203 Mathematics II [Matematik II]	QDQ20303 Mathematics III [Matematik III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDZ1XXX1 Co-Curriculum 1 [Ko-Kurikulum 1]	SDZ1XXX1 Co-Curriculum 2 [Ko-Kurikulum 2]	SDB11302 Communicative English 3 [Bahasa Inggeris Komunikasi 3]		SDU22502 Basic Entrepreneurship [Asas Keusahawanan]	
	SDU12002 Integrity and Anti-Corruption [Integriti dan Anti Rasuah]	SDB11202 Communicative English 2 [Bahasa Inggeris Komunikasi 2]	SDU12902 Philosophy And Current Issues [Falsafah dan Isu Semasa]			
TOTAL CREDITS (94 CREDITS)	**15**	**17**	**18**	**18**	**18**	**8**
AUDIT COURSES	SDB11102[3] Communicative English 1 [Bahasa Inggeris Komunikasi 1]	SDB31002[2] Malay Language [Bahasa Melayu]				
	QDQ10002[1] Preliminary Mathematics [Matematik Awalan]					

[1] Compulsory to students without or with grade D and below for Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 -Preliminary Mathematic is an Audit course
[2] Compulsory to students with grade B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course
[3] Compulsory to students with grade B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course

UR4523001
Diploma in Mechatronic Engineering

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who are competent in mechatronic engineering fields as demonstrated through career progression

PEO 2
Graduates who are involved in community or professional organization and make contribution towards society

PEO 3
Graduates who pursue continuing education opportunities

PEO 4
Graduates who make contribution through innovation and entrepreneurship

PROGRAMME OUTCOMES (PO)

PO1
Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices

PO2
Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity

PO3
Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required

PO4
Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

PO5
Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations

PO6
Consider sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems

PO7
Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion

PO8
Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings

PO9
Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions

PO10
Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments

PO11
Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge

PO12
Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities

FACULTY OF ELECTRICAL ENGINEERING & TECHNOLOGY

CURRICULUM STRUCTURE
UR4523001 DIPLOMA IN MECHATRONIC ENGINEERING INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (73 CREDITS)	EDJ16103 Mechatronic Engineering Skills 1 [Kemahiran Kejuruteraan Mekatronik 1]	EDJ16503 Mechatronic Engineering Skills 2 [Kemahiran Kejuruteraan Mekatronik 2]	EDJ27203 Instrumentation & Measurements [Instrumentasi & Pengukuran]	EDJ28503 Machine Mechanism Elements [Elemen-elemen Mekanisma Mesin]	EDJ30002 Industrial Safety, Quality Management & Ethics [Keselamatan Industri, Pengurusan Kualiti & Etika]	EDJ30108 Industrial Training [Latihan Industri]
	EDJ16203 Computer Programming [Pengaturcaraan Komputer]	EDJ17503 Electrical Technology [Teknologi Elektrik]	EDJ27303 Digital System [Sistem Digit]	EDJ29803 Programmable Logic Controller [Pengawal Logik Boleh Aturcara]	EDJ39103 Industrial Automation & Robotics [Automasi Industri & Robotik]	
	EDJ16303 Computer Aided Drawing [Lukisan Terbantu Komputer]	EDJ17703 Analogue Electronics [Elektronik Analog]	EDJ27403 Data Communications [Komunikasi Data]	EDJ29403 Pneumatics & Hydraulics [Pneumatik & Hidraulik]	EDJ39203 Control Systems [Sistem Kawalan]	
	EDJ17303 Electric Circuits [Litar Elektrik]	EDJ18503 Applied Mechanics [Mekanik Gunaan]	EDJ28003 Thermo-Fluids [Thermo-Bendalir]	EDJ29703 Embedded Systems & Interfacing [Sistem Terbenam & Pengataramuka]	EDJ39302 Internet of Things [Internet Kebendaan]	
	EDJ18103 Engineering Materials [Bahan Kejuruteraan]				EDJ39404 Final Year Project [Projek Tahun Akhir]	
COMMON CORE COURSES (9 CREDITS)		QDQ10103 Mathematics I [Matematik I]	QDQ20203 Mathematics II [Matematik II]	QDQ20303 Mathematics III [Matematik III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDZ1XXX1 Co-Curriculum 1 [Ko-Kurikulum 1]	SDZ1XXX1 Co-Curriculum 2 [Ko-Kurikulum 2]	SDB11302 Communicative English 3 [Bahasa Inggeris Komunikasi 3]	SDU12902 Philosophy And Current Issues [Falsafah dan Isu Semasa]	SDU22502 Basic Entrepreneurship [Asas Keusahawanan]	
	SDU12002 Integrity and Anti-Corruption [Integriti dan Anti Rasuah]	SDB11202 Communicative English 2 [Bahasa Inggeris Komunikasi 2]				
TOTAL CREDITS (94 CREDITS)	**18**	**18**	**17**	**17**	**16**	**8**
AUDIT COURSES	SDB11102[3] Communicative English 1 [Bahasa Inggeris Komunikasi 1]	SDB31002[2] Malay Language [Bahasa Melayu]				
	QDQ10002[1] Preliminary Mathematics [Matematik Awalan]					

[1] Compulsory to students without or with grade D and below for Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 -Preliminary Mathematic is an Audit course
[2] Compulsory to students with grade B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course
[3] Compulsory to students with grade B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course

LIST OF COURSES

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
EDJ12102	Pengaturcaraan Komputer *[Computer Programming]*	Tiada
EDJ12202	Sains Kejuruteraan *[Engineering Science]*	Tiada
EDJ12302	Lukisan Terbantu Komputer *[Computer Aided Drafting]*	Tiada
EDJ12403	Sistem Digit *[Digital System]*	Tiada
EDJ12603	Peranti Elektronik *[Electronic Devices]*	Tiada
EDJ12703	Mikropengawal *[Microcontroller]*	Tiada
EDJ12803	Kemahiran Kejuruteraan Elektrik *[Electrical Engineering Skills]*	Tiada
EDJ12902	Pengenalan kepada Kejuruteraan Elektrik *[Introduction to Electrical Engineering]*	SDG 7, SDG 11
EDJ13002	Litar Elektrik *[Electric Circuit I]*	Tiada
EDJ16103	Kemahiran Kejuruteraan Mekatronik 1 *[Mechatronic Engineering Skills 1]*	Tiada
EDJ16203	Pengaturcaraan Komputer *[Computer Programming]*	Tiada
EDJ16303	Lukisan Terbantu Komputer *[Computer Aided Drawing]*	Tiada
EDJ16503	Kemahiran Kejuruteraan Mekatronik 2 *[Mechatronic Engineering Skills 2]*	Tiada
EDJ17303	Litar Elektrik *[Electric Circuits]*	Tiada
EDJ17503	Teknologi Elektrik *[Electrical Technology]*	Tiada
EDJ17703	Elektronik Analog *[Analogue Electronics]*	Tiada
EDJ18103	Kejuruteraan Bahan *[Engineering Materials]*	Tiada
EDJ18503	Mekanik Gunaan *[Applied Mechanics]*	Tiada
EDJ22103	Pengawal Logik Boleh Atur Cara *[Programmable Logic Controller]*	Tiada

LIST OF COURSES

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
EDJ22203	Elektronik Analog *[Analogue Electronics]*	Tiada
EDJ22303	Peralatan Elektrik Dan Pengukuran *[Electrical Instrumentation And Measurement]*	Tiada
EDJ22403	Sistem Kuasa I *[Power System I]*	Tiada
EDJ22503	Reka Bentuk Pemasangan Elektrik *[Electrical Installation Design]*	Tiada
EDJ22603	Prinsip Kawalan *[Control Principle]*	Tiada
EDJ22703	Mesin Elektrik Dan Aplikasi *[Electrical Machine And Application]*	Tiada
EDJ22802	Keselamatan Industri, Pengurusan Kualiti Dan Etika *[Industrial Safety, Quality Management And Ethics]*	SDG 8, SDG 11
EDJ22903	Litar Elektrik II *[Electric Circuits II]*	Tiada
EDJ27203	Instrumentasi & Pengukuran *[Instrumentation & Measurements]*	Tiada
EDJ27303	Sistem Digit *[Digital System]*	Tiada
EDJ27403	Komunikasi Data *[Data Communications]*	Tiada
EDJ28003	Thermo-Bendalir *[Thermo-Fluids]*	Tiada
EDJ28503	Elemen-Elemen Mekanisma Mesin *[Machine Mechanism Elements]*	Tiada
EDJ29403	Pneumatik & Hidraulik *[Pneumatics & Hydraulics]*	Tiada
EDJ29703	Sistem Terbenam & Pengantaramuka *[Embedded System & Interfacing]*	Tiada
EDJ29803	Pengawal Logik Boleh Aturcara *[Programmable Logic Controller]*	Tiada
EDJ30002	Keselamatan Industri, Pengurusan Kualiti Dan Etika *[Industrial Safety, Quality Management And Ethics]*	SDG 8, SDG 11
EDJ30108	Latihan Industri *[Industrial Training]*	Tiada
EDJ32003	Sistem Kuasa II *[Power System II]*	Tiada

LIST OF COURSES

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
EDJ32103	Elektronik Kuasa *[Power Electronic]*	Tiada
EDJ32304	Projek Tahun Akhir *[Final Year Project]*	SDG 4, SDG 9
EDJ32403	Penyelenggaraan Sistem Tenaga Boleh Diperbaharui *[Renewable Energy System Maintenance]*	SDG 8, SDG 11
EDJ32503	Amalan Pentauliahan dan Penyelenggaraan Sistem Kuasa *[Power System Commissioning And Maintenance Practice]*	Tiada
EDJ39103	Automasi Industri & Robotik *[Industrial Automation & Robotics]*	Tiada
EDJ39203	Sistem Kawalan *[Control Systems]*	Tiada
EDJ39302	Internet Kebendaan *[Internet of Things]*	Tiada
EDJ39404	Projek Tahun Akhir *[Final Year Project]*	Tiada

EDJ12102 PENGATURCARAAN KOMPUTER [COMPUTER PROGRAMMING]

No of Credits: 2

Course Synopsis:
This course introduces students to basic computer programming, for problem solving analysis and programming concepts including variables, operator, control structure, function, array, file processing, structure and pointer. Students also learn how to write programming using C language and solve engineering related problems using computer programming techniques.

Course Outcomes:
1. Ability to design solution related problems using computer programming techniques
2. Ability to apply simulation tools for compiling, debugging and executing computer programs.
3. Ability to function effectively in a group to design solutions using computer programming techniques.

EDJ12202 SAINS KEJURUTERAAN [ENGINEERING SCIENCE]

No of Credits: 2

Course Synopsis:
Engineering Science refers to the combination disciplines of science, mathematics and engineering. It is related to electrical, electronic, materials or mechanical engineering fields. From the basic engineering science student able to apply, design, and develop solutions in engineering. To empower students in the STEM fields, this subject is compulsory to all engineering students.

Course Outcomes:
1. Ability to apply knowledge of principle concepts of science.
2. Ability to analyze and evaluate the principle concepts of science and engineering.
3. Ability to communicate effectively on principle concepts of science in engineering applications.
4. Ability to engage in independent and life-long learning on the theory and the practical knowledge of the concepts of science in engineering applications.

EDJ12302 LUKISAN TERBANTU KOMPUTER [COMPUTER AIDED DRAFTING]

No of Credits: 2

Course Synopsis:
Engineering Science refers to the combination disciplines of science, mathematics and engineering. It is related to electrical, electronic, materials or mechanical engineering fields. From the basic engineering science student able to apply, design, and develop solutions in engineering. To empower students in the STEM fields, this subject is compulsory to all engineering students.

Course Outcomes:
1. Ability to apply knowledge of principle concepts of science.
2. Ability to analyze and evaluate the principle concepts of science and engineering.
3. Ability to communicate effectively on principle concepts of science in engineering applications.
4. Ability to engage in independent and life-long learning on the theory and the practical knowledge of the concepts of science in engineering applications.

EDJ12403 SISTEM DIGIT [DIGITAL SYSTEM]

No of Credits: 3

Course Synopsis:
This course introduces students to the fundamentals of digital electronic circuit's familiarization through exposure of basic logic gates. The course then develops students to appreciate simple digital applications such as arithmetic combinational logic circuits. Flip-flops and its basic application are introduced in the later part of the course then followed by shift Register and counter. Students are expected to design a simple digital system and can demonstrate their understanding.

Course Outcomes:
1. Ability to apply the principle and theoretical concepts of digital systems.
2. Ability to design digital circuits for various digital applications.
3. Ability to investigate digital systems through experimental

EDJ12603 PERANTI ELEKTRONIK [ELECTRONIC DEVICES]

No of Credits: 3

Course Synopsis:
This course introduces basic semiconductor devices such as diode, Bipolar Junction Transistor (BJT) and Field-Effect Transistor (FET) theory. The syllabus consists of understanding the principles and operation of semiconductor devices; investigating the applications of these devices; and solving BJT and FET parameters using various types of biasing.

Course Outcomes:
1. Ability to apply principles, operation, and applications of electronic devices.
2. Ability to investigate electronic devices by examining characteristics through experiments.
3. Ability to apply appropriate tools in testing electronic devices related problems.

EDJ12703 MIKROPENGAWAL [MICROCONTROLLER]

No of Credits: 3

Course Synopsis:
The aim of this course is to study the Microcontroller architecture, programming using C language and basic interfacing with input and output devices. These knowledge are gathered and applied to design a simple microcontroller based system.

Course Outcomes:
1. Ability to design systems using microcontrollers to solve well-defined engineering problems
2. Ability to apply appropriate tools for application based on microcontroller systems.
3. Ability to work effectively as an individual and as a member in teams to design solutions for well-defined engineering problems using microcontroller systems.

EDJ12803 KEMAHIRAN KEJURUTERAAN ELEKTRIK [ELECTRICAL ENGINEERING SKILLS]

No of Credits: 3

Course Synopsis:
This course is 100% practical coursework. This course contains four modules which are Electrical Wiring, Technical Drawing, Basic Electronics Soldering & PCB Design and Basic Arduino Programming

Course Outcomes:
1. Ability to apply programming languages for engineering related problems.
2. Ability to apply appropriate tools for engineering related applications.

EDJ12902 PENGENALAN KEPADA KEJURUTERAAN ELEKTRIK [INTRODUCTION TO ELECTRICAL ENGINEERING]

No of Credits: 2

Course Synopsis:
This course serves as a general introduction to the electrical engineering program offered by the Faculty of Electrical & Technology Engineering. Students will be exposed to attributes of an electrical technician from both academic and practical points of view. Some skills and knowledge that are necessary in the engineering world will be introduced here. Students will obtain a clearer overview of the benefits, excitements, and challenges of being an electrical engineering student and a certified electrical technician in the near future.

Course Outcomes:
1. Ability to apply knowledge related to electrical engineering education in accordance with the scope and career of certified technicians.
2. Ability to apply appropriate tools for engineering related applications based on electrical schematic circuits.
3. Ability to propose a solution with consideration of public health and safety, cultural, societal, and environmental related to engineering applications.

EDJ13002 LITAR ELEKTRIK [ELECTRIC CIRCUIT I]

No of Credits: 2

Course Synopsis:
This course introduces students to the fundamentals of DC circuit analysis. The course develops the understanding of electrical laws. Electrical laws are necessary to analyse any electrical circuit effectively and efficiently by determining different circuit parameters such as current, voltage, power and resistance. Additional analytical methods of circuit analysis also have been developed to analyze more complex circuits.

Course Outcomes:
1. Ability to apply knowledge of charge, current, voltage, resistance, power, energy and elementary application of resistors, ideal current and voltage source in electrical circuit and its basic laws.
2. Ability to analyze and evaluate DC circuits using methods of analysis and circuit theorem.
3. Ability to conduct investigation and evaluate the concept of electrical rules by examining DC circuits in the laboratory.

EDJ16103 KEMAHIRAN KEJURUTERAAN MEKATRONIK 1 [MECHATRONIC ENGINEERING SKILLS 1]

No of Credits: 3

Course Synopsis:
This course is entirely practical and includes four modules: Basic Programming, Electrical Industrial Machine Wiring & Installation, Basic Electronics, and Mechanical Machining. These modules were specifically designed for the Diploma in Mechatronics Engineering program. Students will learn the fundamentals of mechatronics engineering, from programming to operating machinery
for fabrication.

Course Outcomes:
1. Ability to apply basic programming techniques for Mechatronic Applications.
2. Ability to apply basic skills and standard practices in single phase wiring.
3. Ability to apply basic skills of electronic prototyping.
4. Ability to apply appropriate basic skills and standard practices in manufacturing.
5. Ability to value laboratory safety and associated responsibilities in engineering technician practice.

EDJ16203 PENGATURCARAAN KOMPUTER [COMPUTER PROGRAMMING]

No of Credits: 3

Course Synopsis:
This course is designed to introduce the fundamentals of Computer Programming using high level language. It introduces the principles of procedural programming, data types, control structures, data structures and functions, data representation on the machine level. The main objective of this course is to provide students with the skills necessary to solve problems using programming. Specifically, students will get familiar with organization charts, flowcharts, and pseudocode, which they will then use to construct a program code that solves engineering problems.

Course Outcomes:
1. Ability to apply appropriate techniques and tools
2. Ability to design solutions for engineering problems by using computer programming techniques. for computer programming.
3. Ability to communicate effectively in presenting group projects.
4. Ability to collaborate effectively in a team to conduct group projects.

EDJ16303 LUKISAN TERBANTU KOMPUTER [COMPUTER AIDED DRAWING]

No of Credits: 3

Course Synopsis:
The main objective of this course is to expose students to computer-aided drawing, focusing on drafting using CAD software such as AutoCAD, OrCAD and other open- source software. Students will learn basic CAD functions as well as skills like creating dimensions, cross sections, and cut views that are easily performed in CAD. Additionally, CAD offers advantages such as creating highly accurate designs and the ability to create drawings in 2D or 3D, easily viewed from any angle, providing students with a better understanding. The second part of the course focuses on Electronic Drawing, including designing schematic drawings and PCBs. Using Computer-Aided Design software will enhance students' understanding of the design process and allow them to practice their knowledge for future projects.

Course Outcomes:
1. Ability to apply 2D Computer-Aided Design (CAD) techniques for engineering drawings.
2. Ability to utilize engineering drawing techniques for 3D modeling, schematic design and printed circuit board (PCB) layout using design software.
3. Ability to design a mechatronic product using Computer Aided Drawing related software.
4. Ability to collaborate effectively in a team to accomplish a mechatronic product design.

EDJ16503 KEMAHIRAN KEJURUTERAAN MEKATRONIK 2 [MECHATRONIC ENGINEERING SKILLS 2]

No of Credits: 3

Course Synopsis:
The objective of the course is to prepare the students with the skills in mechanical, electrical and electronics practices. The syllabus includes mini project; mechanical based and electrical/electronic based. In mini projects, the students need to implement the knowledge that gained in EDJ16103 Mechatronic Engineering Skill 1 which includes the practice of metrology, lathe, welding, metal sheet, wiring and domestic wiring. The whole subjects will combine with other important technical elements such as technical design and knowledge on handling safety at work. The students will obtain a better perspective on the subjects of their studies because they will confront the problems of implementation of what they have learned in their mechatronics courses

Course Outcomes:
1. Ability to demonstrate mechanical, electrical and electronics skills through the completion of projects.
2. Ability to analyse project needs to solve the well- defined engineering problems in societal and environmental contexts.
3. Ability to commit to professional ethics and responsibility towards finishing the project.
4. Ability to demonstrate knowledge of engineering management principles and apply these in completing the project.

EDJ17303 LITAR ELEKTRIK [ELECTRIC CIRCUITS]

No of Credits: 3

Course Synopsis:
This course is designed to provide students with fundamentals of electrical circuit focusing on DC circuit analysis, both in theory and practice. Students are expected to acquire knowledge and able to apply and analyze basic concept and law of electric elements, apply and construct electrical circuit theorem, and apply basic concept of DC circuit analysis. Knowledge on theory acquired in lecture is also enhanced with practical works applying appropriates modern tools to construct and demonstrate the knowledge in electrical circuit application.

Course Outcomes:
1. Ability to apply basic concept and basic law for electrical circuit.
2. Ability to analyse electrical circuits using variety of circuit analysis method or circuit theorem.
3. Ability to demonstrate knowledge in electrical circuit application.

EDJ17503 TEKNOLOGI ELEKTRIK [ELECTRICAL TECHNOLOGY]

No of Credits: 3

Course Synopsis:
In this course, students will study and apply the fundamental theories and principles which underpin electrical engineering field. Students are expected to be able to identify and analyse problems related to AC circuits specifically for RLC circuit configuration, three phase systems, magnetic and electromagnetism, transformers and DC/AC electrical machines. In addition, students will develop and practice appropriate techniques and methods for solving electrical circuit and electrical machine technical problems.

Course Outcomes:
1. Ability to apply basic concepts and laws of AC circuits and electromagnetic.
2. Ability to analyse circuits related to AC circuits and three phase systems.
3. Ability to evaluate engineering problems in transformers and DC/AC machines.
4. Ability to analyse AC circuits and DC/AC electrical machines through simulations and practical works.

EDJ17703 ELEKTRONIK ANALOG [ANALOGUE ELECTRONICS]

No of Credits: 3

Course Synopsis:
This course is an introduction to the fundamentals of electronic devices circuit and applications. It covers an introduction of semiconductor, diode and application, bipolar junction transistor (BJT) and its biasing, field effect transistor (FET) and its biasing, frequency response and the applications of these devices. This requires an in-depth understanding of semiconductor devices and amplifier. The emphasis will be on the theoretical basis as well as practical implementations. Key components studied in detail are atomic structure, diode analysis, amplifier direct current (dc) analysis, Bipolar junction transistor bias analysis, field effect transistor (FET), frequency response analysis and operational amplifier.

Course Outcomes:
1. Ability to apply knowledge of semiconductor materials and selected electronic devices.
2. Ability to analyse diode application, transistor circuit and applications as amplifier.
3. Ability to apply appropriate tools to construct analogue electronic circuit application.

EDJ18103 KEJURUTERAAN BAHAN [ENGINEERING MATERIALS]

No of Credits: 3

Course Synopsis:
This course introduces students to the principles of engineering materials which treat the atomic bonding, crystal structures, imperfections, mechanical properties, strengthening mechanism in metallic materials and their alloys. Besides, the course also explores the structural properties of metal alloys, ceramics, polymers and composites. At the end of this course, the student will be able to analyse the structural and physical characteristic of the engineering materials as well as evaluate the properties and mechanism that affects the behaviour of materials for various engineering applications.

Course Outcomes:
1. Ability to categorize types of materials, bonding and crystal structure.
2. Ability to evaluate the mechanism of engineering materials that affecting the behaviour of materials and its microstructure.
3. Ability to conduct investigations on engineering- problems through a standard tests and measurements related to material characteristics and properties.

EDJ18503 MEKANIK GUNAAN [APPLIED MECHANICS]

No of Credits: 3

Course Synopsis:
This course introduces the basic concept of force, moments, moments of Couple and resultant force. As for application to statics system, students will study on structure's equilibrium and stability such as truss, frame and machine. Students will also acquire an in-depth understanding of friction and distributed forces in statics systems. In dynamics, students will be exposed to kinematics and kinetics for particles solution which involves forces and acceleration by using resolutions of force into components, impulse and momentum, and also work and energy. At the end of the course, the students are expected to be able to solve engineering problems related to equilibrium and motions.

Course Outcomes:
1. Ability to analyse the equilibrium in particle and rigid body problems.
2. Ability to analyse the kinematics and kinetics study for particles problems.
3. Ability to identify and analyze the kinematics and kinetics study for particles.

EDJ22103 PENGAWAL LOGIK BOLEH ATUR CARA [PROGRAMMABLE LOGIC CONTROLLER]

No of Credits: 3

Course Synopsis:
This course describes the basic operation and characteristics of PLC, PLC information and communication techniques, programming methods and programming techniques. The course covers historical background, uses of PLCs, product ranges, benefits numbering system codes and logic concepts pertaining to PLCs. The student will develop an understanding of the PLC central processing unit, input-output systems, programming and peripheral devices, and programming languages and will develop skills in programming and documenting on a cross section of industrial PLCs. The knowledge is used to design a simple PLC control system especially by using ladder diagram methods.

Course Outcomes:
1. Ability to design solutions for well-defined technical problems, assist with basic timer/counter functions, special instruction programming, editing and program observation.
2. Ability to construct the program in PLC using Ladder diagram and appropriate software that related to the basic concept of PLC applications.
3. Ability to communicate effectively on PLC concepts with industrial control application through technical report and presentation.
4. Ability to demonstrate entrepreneurial initiative by applying PLC knowledge and skills to develop practical and marketable engineering solutions.

EDJ22203 ELEKTRONIK ANALOG [ANALOGUE ELECTRONICS]

No of Credits: 3

Course Synopsis:
This course is an introduction to the basic principle of digital systems and digital circuit analysis. It covers an introduction to basic digital system, numbering system, logic gates, Boolean algebra, combinational logic circuit,function of combinational logic, latch and flip flops and counter application. This requires an in-depth understanding of the basic digital system. The emphasis will be on the theoretical basis as well as practical implementations. Key components studied in detail are Boolean simplification, truth table, Karnaugh map and logic circuit analysis and design.

Course Outcomes:
1. Ability to analyze theBJTs and FETs circuit configurations as an amplifier circuit.
2. Ability to design solutions for technical problems related to multistage and power amplifiers.
3. Ability to investigate the characteristics of transistors and amplifiers.

EDJ22303 PERALATAN ELEKTRIK DAN PENGUKURAN [ELECTRICAL INSTRUMENTATION AND MEASUREMENT]

No of Credits: 3

Course Synopsis:
This course objective is to introduce the student to the basic concepts of instrumentation and measurement methods, designs of measuring devices, bridge methods and transducers. Application instrumentation for the instrument is a device that transforms a physical variable of interest (measurand) into a form that is suitable for recording (measurement).

Course Outcomes:
1. Ability to apply the basic principles of instrumentation and measurement.
2. Ability to analyse elements of instrumentation and measurement systems
3. Ability to apply appropriate tools for measuring and testing parameters related to electrical measurement

EDJ22403 SISTEM KUASA I [POWER SYSTEM I]

No of Credits: 3

Course Synopsis:
This course covers topics of introduction and basic analysis to power generation, load flow studies, faults studies and transmission line studies. This course intends to give the students fair knowledge about electrical power systems which focuses on fundamental theory lectures and lab-intensive works in order to strengthen student's understanding and knowledge.

Course Outcomes:
1. Ability to analyze power system performance in power generation, transmission parameters and faults scenarios.
2. Ability to investigate the basic principles of power system operation and fault response through experiments.
3. Ability to work effectively as an individual and team member to solve problems in power system.
4. Ability to engage in independent and life-long learning on the principle of typical electrical generation plants and their operation concept in electrical power system

EDJ22503 REKA BENTUK PEMASANGAN ELEKTRIK [ELECTRICAL INSTALLATION DESIGN]

No of Credits: 3

Course Synopsis:
This course is designed and structured to provide electrical assistant engineers /technical assistants with the application skills needed in modern electrical engineering practice. This course uses a combination of theory and practical 'hands on' case studies to demonstrate and reinforce the principles. Students in this course are expected to work through the case studies. The case studies are based on actual installations and projects.

Course Outcomes:
1. Ability to design Low Voltage electrical installation for a building based on IEE,IEC and JKR guidelines.
2. Ability to evaluate an energy savings solution for lighting system in a group project.
3. Ability to work effectively as an individual, and as a member in technical teams.
4. Ability to apply knowledge of engineering management principles for project design.

EDJ22603 PRINSIP KAWALAN [CONTROL PRINCIPLE]

No of Credits: 3

Course Synopsis:
This course provides students with background of control principles in various engineering applications. Throughout this course, students will learn the basic mathematical tools such as Laplace transform, transfer function, block diagram, signal flow graph, mathematical modelling of dynamic systems, time response analysis, stability of linear system, root locus and frequency domain analysis. The laboratory will be used to aid the students' understanding of the concept introduced.

Course Outcomes:
1. Ability to analyze and evaluate the theoretical, system models and analysis methods in control systems.
2. Ability to investigate and analyze operational parameters for control systems, stability analysis, root locus and frequency response method.
3. Ability to engage in independent and life-long learning on the theory and evaluate the stability of the control system applications.

EDJ22703 MESIN ELEKTRIK DAN APLIKASI [ELECTRICAL MACHINE AND APPLICATION]

No of Credits: 3

Course Synopsis:
The course can be divided into five main topics which are single and three phase transformers, DC machine fundamentals, direct current motors, DC generator , Single phase induction motor and Three phase induction motor. All these topics cover the basic construction, equivalent circuits, phasor diagram, per unit system, efficiency and voltage regulation.

Course Outcomes:
1. Ability to analyze the principles, operation, and performance characteristics of transformers, DC machines and induction motors in both single-phase and three-phase systems.
2. Ability to investigate the parameters, characteristics, and configurations of electrical machines and transformers through experiments.
3. Ability to apply appropriate tools for testing electrical machines and transformers performance.

EDJ22802 KESELAMATAN INDUSTRI, PENGURUSAN KUALITI DAN ETIKA [INDUSTRIAL SAFETY, QUALITY MANAGEMENT AND ETHICS]

No of Credits: 2

Course Synopsis:
This course gives an exposure to students to understand industrial safety Acts, Regulations,ISO Standards, Requirements, management system concept and various safety and quality tools that allow students to understand the general picture of both areas which are being practised by industries. Students can apply moral and ethical values as professional technicians based on an understanding of the code of ethics of practice learned. At the end of this course, students are expected to be the best professionals in an industrial environment and community.

Course Outcomes:
1. Ability to analyse well-defined engineering problems related to industrial safety, electrical safety and quality management systems with appropriate TQM tools and techniques.
2. Ability to justify issues related to industrial safety, electrical safety or quality management systems with reference to relevant acts, regulations, standards and requirements.
3. Ability to justify engineering issues related to ethical principles with consideration of code of ethics.
4. Ability to analyse case studies related to industrial safety, electrical safety, quality management systems, or ethical issues with engagement of life-long learning.

EDJ22903 LITAR ELEKTRIK II [ELECTRIC CIRCUITS II]

No of Credits: 3

Course Synopsis:
This course aims to equip students with a fundamental understanding of working with AC electric circuits, encompassing topics such as sinusoidal waveforms, vectors, and phasors. Subsequently, the course will guide students in analyzing AC circuits using various methods of circuit analysis and circuit theorems.

Course Outcomes:
1. Ability to apply knowledge of electrical rules in AC circuit.
2. Ability to analyse AC steady-state electrical circuit.
3. Ability to analyse various types of AC circuits and associated theorems by conducting investigations using standard tests and measurements.
4. Ability to apply appropriate techniques to calibrate and measure basic electrical values using digital oscilloscope.

EDJ27203 INSTRUMENTASI & PENGUKURAN [INSTRUMENTATION & MEASUREMENTS]

No of Credits: 3

Course Synopsis:
This course is designed to provide students with fundamentals of instrumentation and measurement systems; in theory and practice. Throughout this course, students will learn the basic knowledge of measurement systems, error calculation, calibration process, important of resistance based transducers, magnetic-based transducers, capacitance-based transducers, mechanical transducers, flow measurement, pressure and for

Course Outcomes:
1. Ability to apply knowledge of instrumentation and measurement technique.
2. Ability to analyse sensors and transducer application in measurement system.
3. Ability to analyse measurement technique and application of sensor.

EDJ27303 SISTEM DIGIT [DIGITAL SYSTEM]

No of Credits: 3

Course Synopsis:
This course is an introduction to the basic principle of digital systems and digital circuit analysis. It covers an introduction to basic digital system, numbering system, logic gates, Boolean algebra, combinational logic circuit, function of combinational logic, latch and flip flops and counter application. This requires an in-depth understanding of basic digital system. The emphasis will be on the theoretical basis as well as practical implementations. Key components studied in detail are Boolean simplification, truth table, Karnaugh map and logic circuit analysis and design.

Course Outcomes:
1. Ability to apply basic concept of digital system.
2. Ability to analyse the fundamentals of combinational and sequential logic circuits.
3. Ability to design a circuit and system of digital electronics.
4. Ability to demonstrate knowledge of electronic circuits for digital system.

EDJ27403 KOMUNIKASI DATA [DATA COMMUNICATIONS]

No of Credits: 3

Course Synopsis:
Introduction to the principles of data communication and networking in industrial applications. Learning about data communications, networks security and the field of industrial data communications. It includes the fundamentals of wired and wireless technology, data encryption, network firewall and secure network design to provide understanding and relate the principles to various applications in the industry.

Course Outcomes:
1. Ability to apply networking scenarios to identify, troubleshoot, and resolve issues related to data communication protocols and network performance.
2. Ability to analyze various transmission methods and error correction techniques in communication systems and their related apparatus.
3. Ability to design solutions for industrial communication and network technology by selecting suitable equipment, protocols, and security measures.
4. Ability to analyze data communications using relevant networking systems.

EDJ28003 THERMO-BENDALIR [THERMO-FLUIDS]

No of Credits: 3

Course Synopsis:
This course is designed to provide a background of the fundamental principles and engineering applications of thermodynamics, heat transfer and fluid mechanics. These three areas collectively make up the field of thermal sciences but are traditionally taught as separate courses. However, in this course sequence, the three areas are presented together. Topics covered include, but not limited to: fundamental of thermodynamics; application of laws of thermodynamics to various systems; various modes of heat transfer under steady state conditions; fluid static and dynamics; law of conservation of mass Bernoulli's equation; and, flow in pipes. Knowledge on theory acquired in lecture is also enhanced with practical work conducted in laboratory.

Course Outcomes:
1. Ability to apply basic concepts of fluid mechanics, thermodynamics and heat transfer.
2. Ability to analyse engineering problems related to various laws of fluid mechanics, thermodynamics and heat transfer.
3. Ability to analyse engineering problems through standard tests and measurements related to the principles of fluid mechanics,
4. thermodynamics and heat transfer.

EDJ28503 ELEMEN-ELEMEN MEKANISMA MESIN [MACHINE MECHANISM ELEMENTS]

No of Credits: 3

Course Synopsis:
This course is designed to provide students with the skills and knowledge in machine mechanism disciplines. The practical syllabus includes power transmission elements, shaft and bearing, drive gear, flexible element drive, camshaft and follower and also linkages system. The whole subjects will combine with other important technical elements such as mechanical design and international standard that need to be followed in design. With the help of practical laboratory, the students will obtain a better perspective on the subjects of their studies because they will confront the problems of implementation of what they have learnt in their mechatronics courses.

Course Outcomes:
1. Ability to apply the principles of mechanical drive elements.
2. Ability to evaluate the mechanism of mechanical elements and the mobility of mechanical system.
3. Ability to analyze on engineering problems through a standard tests and measurements related to mechanism of mechanical elements.

EDJ29403 PNEUMATIK & HIDRAULIK [PNEUMATICS & HYDRAULICS]

No of Credits: 3

Course Synopsis:
This course is designed to provide students with fundamentals of pneumatic and hydraulic control systems, both in theory and practice. Students are expected to acquire knowledge of physical behaviour of pneumatic and hydraulic control system, the pneumatics and hydraulics components and applications. Topics covered include, but not limited to: introduction to pneumatic; components of pneumatic system; pneumatic actuators; development of single and multiple actuator pneumatic circuits; designing electro- pneumatic system; introduction to hydraulic; components of hydraulic system; hydraulic actuators; and, development of single and multiple actuator hydraulic circuits. Knowledge on theory acquired in lecture is also enhanced with a practical work conducted in laboratory. The students also will learn to design and simulate the pneumatic and hydraulic system using simulation software, as well as industrial visit,talk or case studies.

Course Outcomes:
1. Ability to apply the concepts of Pneumatic and Hydraulic Systems.
2. Ability to design solutions for the Pneumatic and Hydraulic Systems related to industrial applications.
3. Ability to implement Pneumatic and Hydraulic solutions using both simulation software and practical hardware setups.
4. Ability to engage in technical knowledge updates in Pneumatic and Hydraulic Systems through industrial talks, visits or case studies.

EDJ29703 SISTEM TERBENAM & PENGANTARAMUKA [EMBEDDED SYSTEM & INTERFACING]

No of Credits: 3

Course Synopsis:
This course is designed to provide students with fundamentals of microcontroller and the hardware both;in theory and practice. Students are expected to acquire knowledge of programming, electronic components and applications. Knowledge on theory acquired in lecture is also enhanced with a practical work conducted in laboratory.

Course Outcomes:
1. Ability to analyse the architecture, functions, basic embedded programming and compiler, timer and counter applications.
2. Ability to design programming languages and interfacing between microcontroller and other I/O devices.
3. Ability to apply a microcontroller system based applications.
4. Ability to communicate effectively in presenting the group project.
5. Ability to apply engineering management to design an engineering project in a group.

EDJ29803 PENGAWAL LOGIK BOLEH ATURCARA [PROGRAMMABLE LOGIC CONTROLLER]

No of Credits: 3

Course Synopsis:
This course deals with the basic operation, application and programming of the integrated industrial control system, concentrating on the industrial programmable logic controller (PLC). The course covers historical background, uses of PLCs, product ranges, and benefits numbering systems and codes and logic concepts pertaining to PLCs. The student will develop an understanding of the PLC central processing unit, input-output systems, programming and peripheral devices, and programming languages and will develop skills in programming and documenting on a cross section of industrial PLCs. Much time will be spent in the lab working on different kinds of PLCs programming. Knowledge on theory acquired in lecture is also enhanced with practical work conducted in the laboratory.

Course Outcomes:
1. Ability to apply knowledge of the basics of programmable logic controllers(PLC).
2. Ability to construct the program in PLCusing Ladder diagram and appropriate software.
3. Ability to design solutions in PLCprogramming, editing and program observation.
4. Ability to function effectively in groups/teams to solve the problems and demonstrate the solution.

EDJ30002 KESELAMATAN INDUSTRI, PENGURUSAN KUALITI DAN ETIKA [INDUSTRIAL SAFETY, QUALITY MANAGEMENT AND ETHICS]

No of Credits: 2

Course Synopsis:
This course gives an exposure to students to understand industrial safety Acts, Regulations, ISO Standards, Requirements, QMS concept and various safety and quality tools that allow students to understand the general picture of both areas which are being practised by industries. Students can apply moral and ethical values as professional technicians based on an understanding of the code of ethics of practice learned. At the end of this course, students are expected to be the best professionals in an industrial environment and community.

Course Outcomes:
1. Ability to analyse well-defined engineering problem related to Industrial Safety and Quality Management Systems with appropriate tools and techniques.
2. Ability to justify on Act, Regulation, Standard, or Requirement related to Industrial Safety or Quality Management Systems issues.
3. Ability to justify engineering issues based on engineering Code of Ethics practise.
4. Ability to analyse the case studies of Industrial Safety, Quality Management Systems or Ethical issues with engagement of life-long learning.

EDJ30108 LATIHAN INDUSTRI [INDUSTRIAL TRAINING]

No of Credits: 8

Course Synopsis:
The course will expose students to technical and application aspect as well as other aspect such as company's operation, work culture, safety procedure, project management, communication, technical skills and presentation. The students are required to submit their logbook and final report at the end of the industrial training. Overall, the course is practical- based.

Course Outcomes:
1. Ability to demonstrate technical knowledge and practical skills.
2. Ability to adapt to health, safety, legal, cultural and sustainability requirements in working environment.
3. Ability to execute tasks with professional ethics and responsibilities
4. Ability to work independently, interact with co- workers and work in a team.
5. Ability to communicate effectively on the well- defined engineering activities involved

EDJ32003 SISTEM KUASA II [POWER SYSTEM II]

No of Credits: 3

Course Synopsis:
This course covers topics of introduction and basic analysis to economics of generations, transmission line modeling study, power system protection study and introduction to components of transmission & distribution system in Malaysia. This course intends to give the students fair knowledge about electrical power systems.

Course Outcomes:
1. Ability to evaluate the theoretical of transmission line parameters and models, power transfer and protection to the well-define engineering problem
2. Ability to investigate electrical power system performance through analysis of load profile, transmission line characteristics, protection and relay coordination
3. Ability to communicate effectively to demonstrate components of transmission and distribution system

EDJ32103 ELEKTRONIK KUASA [POWER ELECTRONIC]

No of Credits: 3

Course Synopsis:
This course will introduce the students to the power electronics converters, power electronics concept and power semiconductor devices. Types of converters and their circuit implementation such as AC-DC, AC-AC, DC-DC and DC-AC will be introduced to the students. Students also will be exposed to the circuit and waveforms analysis for each converter and application of power electronics converters as motor drives.

Course Outcomes:
1. Ability to apply knowledge of power electronics system, devices and its applications.
2. Ability to evaluate power electronics converter topologies and operation.
3. Ability to conduct investigation on converters and their performances.

EDJ32304 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course is a small-scale research project for final year students and expected to be completed within one semester. The projects are based on solving the engineering problem by understanding the problems, troubleshooting, identifying, solving and finally report writing for the documentation purposes. The projects are related to electrical power, power electronics, renewable energy, control, instrumentation and internet of things.

Course Outcomes:
1. Ability to design solutions for well-defined technical problems with consideration of safety, society, culture, and the environment
2. Ability to conduct investigations to solve well-defined problems using standard tests and relevant codes
3. Ability to apply ethical principles to professional responsibilities in completing technical projects
4. Ability to engage in independent and life-long learning with critical thinking in conducting literature on the relevant engineering principles and theories
5. Ability to demonstrate entrepreneurial skills in developing innovative solutions with potential for commercialization

EDJ32403 PENYELENGGARAAN SISTEM TENAGA BOLEH DIPERBAHARUI [RENEWABLE ENERGY SYSTEM MAINTENANCE]

No of Credits: 3

Course Synopsis:
This course focuses on sustainable maintenance practices in the renewable energy sector with the aim of minimizing environmental impact. Students will explore conservation strategies, green technologies in maintenance, and methods for evaluating environmentally friendly practices. The course also addresses ethical issues related to renewable energy, including equitable access, community impact, and long-term sustainability. In addition, students will learn project management techniques and financial principles relevant to planning and executing cost-effective renewable energy maintenance projects.

Course Outcomes:
1. Ability to evaluate sustainable practices in maintenance to minimize environmental impact
2. Ability to discuss ethical issues in renewable energy, including access, community impact, and sustainability
3. Ability to implement project management techniques and financial principles specific to renewable energy maintenance

EDJ32503 AMALAN PENTAULIAHAN DAN PENYELENGGARAAN SISTEM KUASA [POWER SYSTEM COMMISSIONING AND MAINTENANCE PRACTICE]

No of Credits: 3

Course Synopsis:
This course is to provide students with clear understanding on maintenance and commissioning practice of electrical power system equipment. It will cover both practical and theoretical information on the maintenance and testing of transformers, circuit breakers, protective relay and other electrical equipment. In the practical session students will be divided into several groups to carry out laboratory experiments. Students will also gain knowledge regarding standard documentation, policy, investigation technique and data analysis prior to the commissioning. In addition, students will be exposed to standard apparatus and equipment used by utilities for commencing maintenance and commissioning work.

Course Outcomes:
1. Ability to analyze the specifications and performances of substation components.
2. Ability to perform electrical testing on substation components.
3. Ability to identify the regulations regarding safety issues on power system components.

EDJ39103 AUTOMASI INDUSTRI & ROBOTIK [INDUSTRIAL AUTOMATION & ROBOTICS]

No of Credits: 3

Course Synopsis:
This course covers basic mathematics related to industrial robots for control, design and application. Learn the basic principles of robotics, robot classification and robot mechanisms, robot components, basics of control systems, robot programming and industrial automation systems. In addition, it also covers safety standards and procedures related to industrial automation and robotics.

Course Outcomes:
1. Ability to analyse robot components and kinematics of robot manipulator.
2. Ability to design solution of an automated manufacturing system for industrial applications.
3. Ability to investigate robot programming, forward kinematics and inverse kinematics of industrial robot.
4. Ability to comply to safety standard and procedures in industrial robotics.

EDJ39203 SISTEM KAWALAN [CONTROL SYSTEMS]

No of Credits: 3

Course Synopsis:
This course introduces the basic of control systems in various engineering applications. Throughout this course, students will learn the fundamental of control systems such as Laplace transform, transfer function, block diagram, signal flow graph, mathematical modelling of dynamic systems, time response analysis, stability of linear system, root locus and frequency domain analysis. The laboratory will be used to aid the students understanding of the concept introduced.

Course Outcomes:
1. Ability to apply physical systems into mathematical models by applying suitable techniques.
2. Ability to evaluate the time domain and frequency domain for specific systems.
3. Ability to conduct investigation regarding characteristics for control systems problems.

EDJ39302 INTERNET KEBENDAAN [INTERNET OF THINGS]

No of Credits: 2

Course Synopsis:
This course is designed to provide students with understanding of IoT applications and microcontrollers with hand-on practice. Students are expected to acquire knowledge of programming techniques, IoT application protocols, software and tools, explore coding and method using AI generative, and cloud application. Knowledge of practical laboratory practices fully enhances student skill development in the era of the modern industrial revolution (IR4.0) and beyond, also empowering TVET.

Course Outcomes:
1. Ability to design a solution of IOT application using programming language, interfacing between microcontroller and other I/O devices.
2. Ability to construct microcontroller hardware and software programming based on IOT application.
3. Ability to collaborate effectively in groups to demonstrate project work.
4. Ability to demonstrate awareness of entrepreneurship in completing engineering
5. project.

EDJ39404 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course is a one semester research project for final year Diploma student. The projects serve to demonstrate the skills and engineering knowledge acquired by the students throughout their studies. The projects will be based on solving engineering problems which include understanding and identify the problem concerned, troubleshooting, fabrication work, and come out with possible solutions. This course offers soft skills building in communication skills via oral presentation and ability to transfer knowledge in form of report writing at the end of the semester. The projects are related to electronics based, internet of things, control, sensors, instrumentation, robotics, automation, image & signal processing and renewable energy.

Course Outcomes:
1. Ability to analyse the engineering problems through literature review and technical knowledge.
2. Ability to design solutions of well-defined engineering problems with analysis and investigation.
3. Ability to utilise appropriate technology or tools in solving well-defined engineering problems.
4. Ability to justify the impact of the project solution which relates to sustainability, societal and environmental.
5. Ability to communicate effectively on the project work through presentation.
6. Ability to demonstrate project planning, scheduling and finance through project management practices.
7. Ability to demonstrate entrepreneurial skills by doing market research and managing project resources.

FACULTY OF ELECTRONIC ENGINEERING & TECHNOLOGY (FKTEN)

Programmes Offered:

1. Bachelor of Microelectronic Engineering with Honours
2. Bachelor of Biomedical Electronic Engineering with Honours
3. Bachelor of Electronic Engineering with Honours
4. Bachelor of Electronic Engineering Technology (Electronic Systems) with Honours
5. Bachelor of Electronic Engineering Technology (Electronic Telecommunication Design) with Honours
6. Bachelor of Electronic Engineering Technology (Electronic Network Design) with Honours
7. Bachelor of Technology in Industrial Electronic Automation with Honours
8. Diploma in Electronic Engineering

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UR4523003
Diploma in Electronic Engineering

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who have demonstrated career advancement in the field of Electronic Engineering or related engineering field

PEO 2
Graduates who have contributed to a professional body or society

PEO 3
Graduates who have engaged in lifelong learning or pursuing continuing education opportunities

PEO 4
Graduates who have contributed through innovation and entrepreneurship activity.

PROGRAMME OUTCOMES (PO)

PO1
Knowledge: Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices

PO2
Problem Analysis: Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.

PO3
Design/Development of Solutions: Design solutions for well-defined technical
problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required.

PO4
Investigation: Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.

PO5
Tool Usage: Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations

PO6
The Engineering Technician and the World: Consider sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.

PO7
Ethics: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.

PO8
Individual and Collaborative Teamwork: Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings

PO9
Communications: Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.

PO10
Project Management and Finance: Demonstrate awareness of engineering
management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.

PO11
Lifelong Learning: Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.

PO12
Personal and Entrepreneurial Skills: Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities.

FACULTY OF ELECTRONIC ENGINEERING & TECHNOLOGY

CURRICULUM STRUCTURE
UR4523003 DIPLOMA IN ELECTRONIC ENGINEERING INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (73 CREDITS)	NDJ10003 Electronic Engineering Skill [Kemahiran Kejuruteraan Elektronik]	NDJ20303 Semiconductor Physics And Devices [Fizik dan Peranti Semikonduktor]	NDJ30203 Programmable Logic Controller [Pengawal Logik Boleh Atur Cara]	NDJ20403 Microcontroller System [Sistem Mikropengawal]	NDJ30003 Electronic Instrumentation [Instrumentasi Elektronik]	NDJ30508 Industrial Training [Latihan Industri]
	NDJ10102 Engineering Physics [Fizik Kejuruteraan]	NDJ10503 Electronic Devices [Peranti Elektronik]	NDJ20002 Quality Management, Industrial Safety And Ethics [Keselamatan Industri, Pengurusan Kualiti dan Etika]	NDJ21103 Electronic Packaging [Pembungkusan Elektronik]	NDJ30703 Communication System [Sistem Komunikasi]	
	NDJ10203 Electric Circuits [Litar Elektrik]	NDJ10603 Electrical Technology [Teknologi Elektrik]	NDJ20503 Integrated Circuit Layout [Bentangan Litar Bersepadu]	NDJ21403 Wafer Fabrication [Fabrikasi Wafer]	NDJ30103 Control Systems [Sistem Kawalan]	
	NDJ10303 Digital System I [Sistem Digit 1]	NDJ20103 Digital System II [Sistem Digit 2]	NDJ20603 Analogue Electronics [Elektronik Analog]	NDJ21803 Signal & System [Isyarat & Sistem]	NDJ30304 Final Year Project [Projek Tahun Akhir]	
	NDJ10403 Computer Programming [Pengaturcaraan Komputer]				NDJXXXXX Elective [Elektif]	
COMMON CORE COURSES (9 CREDITS)		QDQ10103 Mathematics I [Matematik I]	QDQ20203 Mathematics II [Matematik II]	QDQ20303 Mathematics III [Matematik III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDZ1XXXX Co-Curriculum 1 [Ko-Kurikulum 1]	SDZ1XXXX Co-Curriculum 2 [Ko-Kurikulum 2]	SDB11302 Communicative English 3 [Bahasa Inggeris Komunikasi 3]	SDU22502 Basic Entrepreneurship [Asas Keusahawanan]	SDU12902 Philosophy And Current Issues [Falsafah dan Isu Semasa]	
		SDB11202 Communicative English 2 [Bahasa Inggeris Komunikasi 2]	SDU12002 Integrity and Anti-Corruption [Integriti dan Anti Rasuah]			
TOTAL CREDITS (94 CREDITS)	**15**	**18**	**18**	**17**	**18**	**8**
AUDIT COURSES	QDQ10002[1] Preliminary Mathematics [Matematik Awalan]			SDB31002[2] Malay Language [Bahasa Melayu]		
	SDB11102[3] Communicative English 1 [Bahasa Inggeris Komunikasi 1]					

Elective : NDJ21303 Failure Analysis [Analisa Kegagalan] or NDJ21903 Digital Integrated Circuit [Litar Bersepadu Digital]

[1] Compulsory for students with grade D and without Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 - Preliminary Mathematics is an Audit course.

[2] Compulsory for students with grades B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course.

[3] Compulsory for students with grades B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course.

LIST OF COURSES:

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
NDJ10003	Kemahiran Kejuruteraan Elektronik [Electronic Engineering Skills]	Tiada
NDJ10102	Fizik Kejuruteraan [Engineering Physics]	Tiada
NDJ10203	Litar Elektrik [Electric Circuits]	Tiada
NDJ10303	Sistem Digit I [Digital System I]	Tiada
NDJ10403	Pengaturcaraan Komputer [Computer Programming]	Tiada
NDJ10503	Peranti Elektronik [Electronic Devices]	Tiada
NDJ10603	Teknologi Elektrik [Electrical Technology]	Tiada
NDJ20002	Keselamatan Industri, Pengurusan Kualiti Dan Etika [Quality Management, Industrial Safety And Ethics]	SDG 3, SDG 9, SDG 11
NDJ20103	Sistem Digit II [Digital System II]	Tiada
NDJ20303	Fizik & Peranti Semikonduktor [Semiconductor Physic & Devices]	Tiada
NDJ20403	Sistem Mikropengawal [Microcontroller System]	Tiada
NDJ20503	Bentangan Litar Bersepadu [Integrated Circuit Layout]	Tiada
NDJ20603	Elektronik Analog [Analogue Electronics]	Tiada
NDJ21103	Pembungkusan Elektronik [Electronic Packaging]	SDG 9
NDJ21303	Analisis Kegagalan [Failure Analysis]	SDG 7
NDJ21403	Fabrikasi Wafer [Wafer Fabrication]	Tiada
NDJ21803	Isyarat & Sistem [Signal & System]	Tiada
NDJ21903	Litar Bersepadu Digital [Digital Integrated Circuit]	Tiada
NDJ30003	Instrumentasi Elektronik [Electronic Instrumentation]	Tiada

LIST OF COURSES:

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
NDJ30103	Sistem Kawalan [Control Systems]	Tiada
NDJ30203	Pengawal Logik Boleh Aturcara [Programmable Logic Controller]	Tiada
NDJ30304	Projek Tahun Akhir [Final Year Project]	SDG 4, SDG 7, SDG 9
NDJ30508	Latihan Industri [Industrial Training]	SDG 4, SDG 8, SDG 9
NDJ30703	Sistem Komunikasi [Communication System]	Tiada

NDJ10003 KEMAHIRAN KEJURUTERAAN ELEKTRONIK [ELECTRONIC ENGINEERING SKILLS]

No of Credits: 3

Course Synopsis:
This course is a 100% practical coursework subject carrying 3 credit hours, designed to equip students with fundamental electronic engineering skills through hands-on learning. It comprises four (4) modules: Basic Knowledge of Computers, Basic Electronic Circuits, PCB Layout Design and Fabrication, and Technical Drawing. By completing this course, students will develop essential technical competencies that enhance their understanding and application of electronic concepts in other subjects throughout their studies.

Course Outcomes:
1. Ability to recognize basic components of a computer system and its assembly configurations.
2. Ability to fabricate a PCB, including transferring the design, drilling, etching, and developer stage.
3. Ability to assemble an electronic schematic diagram and PCB layout using KiCAD software.
4. Ability to perform related technical drawing and CAD software techniques in solving engineering drawing problems.

NDJ10102 FIZIK KEJURUTERAAN [ENGINEERING PHYSICS]

No of Credits: 2

Course Synopsis:
The purpose of this course is to give the knowledge for student about physics and engineering that involve physicals and sciences phenomena, which is the basic for engineering. Theories, principles and standard units have been focused for every syllabus so that the student could understand fully about this course.

Course Outcomes:
1. Ablility to apply knowledge of basic physics.
2. Ablility to explain the principle concepts of physics in engineering.
3. Ability to propose the principle concepts of physics in engineering.

NDJ10203 LITAR ELEKTRIK [ELECTRIC CIRCUITS]

No of Credits: 3

Course Synopsis:
This course covers introduction to the basics of electrical measurements, Ohm's Law, Series and Parallel Circuits, Circuit Theorems and Conversions, and RLC circuits. This course will expose the students to the elements and principles of electrical circuit theory appropriate to any RLC circuit applications.

Course Outcomes:
1. Ability to apply knowledge of fundamentals for an electric circuit.
2. Ability to analyze problems related to an electrical circuit.
3. Ability to apply appropriate techniques and tools to demonstrate fundamental skills in electric circuit.

NDJ10303 SISTEM DIGIT I [DIGITAL SYSTEM I]

No of Credits: 3

Course Synopsis:
This course provides students an exposure to logic design, particularly combinational logic functions. The students are expected to demonstrate the fundamentals of digital electronic circuits design through exposure of basic logic IC's and parallels digital simulation software. The course then develops students to understand and analyse combinational logic applications such as basic decoder and encoder, multiplexer and demultiplexer, adders, comparators and parity circuits. Finally, students are expected to design combinational logic applications and demonstrate their understanding throughout the laboratory and presentation.

Course Outcomes:
1. Ability to apply knowledge and concept of the fundamental digital logic design.
2. Ability to analyze well defined combinational logic functions.
3. Ability to demonstrate practical design for well-defined combinational logic functions.

NDJ10403 PENGATURCARAAN KOMPUTER [COMPUTER PROGRAMMING]

No of Credits: 3

Course Synopsis:
It delivers the competency to students in applying the fundamental programming concepts and is able to analyse problems and produce the solution using algorithm development tools. The course will be delivered using the basic programming language that is trending at the current market.

Course Outcomes:
1. Ability to explain the concepts of programming and its principles.
2. Ability to use appropriate tools for coding, compiling, executing, and debugging computer program.
3. Ability to apply programming techniques with precision to develop, test, and debug functional software solutions and prototypes that address defined engineering problems.

NDJ10503 PERANTI ELEKTRONIK [ELECTRONIC DEVICES]

No of Credits: 3

Course Synopsis:
This course is designed to provide and expose students with fundamentals and application of basic semiconductor devices such as diode, Bipolar Junction Transistor (BJT) and Field Effect Transistor (FET). The syllabus consists of understanding the principles and operation of semiconductor devices, investigating the applications of these devices and solving BJT and FET parameters using various types of biasing. Knowledge on theory acquired in lecture is also enhanced with practical work conducted in the laboratory.

Course Outcomes:
1. Ability to explain basic theories and operations of semiconductor materials and devices.
2. Ability to explain and analyse problems related to semiconductor devices.
3. Ability to demonstrate the semiconductor devices in laboratory.

NDJ10603 TEKNOLOGI ELEKTRIK [ELECTRICAL TECHNOLOGY]

No of Credits: 3

Course Synopsis:
This course will expose the students to the AC circuits, electromagnetic, basic transformer and electrical machines. The topics covered include the AC circuits analysis, electromagnetism, electrical transformers, DC machines and AC machines. General concepts and basic principles of operation for each electrical machine are covered including the characteristics and performance analysis.

Course Outcomes:
1. Ability to apply the theorems and laws of electrical alternating current circuits, three-phase systems, principles of magnetism, and electromagnetism.
2. Ability to analyse the fundamentals, operation and application of electrical transformer, AC machines and DC machines with respect to their equivalent circuits and performances.
3. Ability to apply appropriate techniques and modern engineering tools to simulate and practice electrical works.

NDJ20002 KESELAMATAN INDUSTRI, PENGURUSAN KUALITI DAN ETIKA [QUALITY MANAGEMENT, INDUSTRIAL SAFETY AND ETHICS]

No of Credits: 2

Course Synopsis:
This course provides students with a comprehensive understanding of industrial safety operations and guidelines, quality management standards and principles, a range of quality tools, and ethical practices commonly applied in industries. It equips students with the knowledge required to grasp the broader framework of safety, quality management and ethical principles in various industries. By the end of the course, students will be able to apply industrial safety standards, as well as implement suitable quality techniques and tools for production management and ethical principles effectively in real-world industrial environments.

Course Outcomes:
1. Ability to analyze the impact of industrial safety and quality management systems (QMS) on health, safety and sustainability using relevant laws and standards.
2. Ability to analyze ethical principles and issues related to engineering ethics and the Code of Ethics.
3. Ability to communicate effectively by structuring presentations on engineering activities, with a focus on Industrial Safety, Quality Management Systems, or Ethical Issues.
4. Ability to evaluate for life-long learning on the case studies in the context of Industrial Safety, QMS or Ethical issues.

NDJ20103 SISTEM DIGIT II [DIGITAL SYSTEM II]

No of Credits: 3

Course Synopsis:
This course exposed the students to the applications of Combinational and Sequential Logic System particularly in shift register and counter design. The course also includes Introduction to Sequencing and Control which will guide the students for subjects that will be taken in later semesters.

Course Outcomes:
1. Ability to describe the theories of basic storage devices and fundamental operations of sequential circuit application.
2. Ability to develop counters using transition tables and counter application using finite state machine and register transfer language.
3. Ability to demonstrate sequential circuit using CAD tools and program onto hardware.
4. Ability to complete task among team members and group project.

NDJ20303 FIZIK & PERANTI SEMIKONDUKTOR [SEMICONDUCTOR PHYSIC & DEVICES]

No of Credits: 3

Course Synopsis:
The aim of this course is to give the knowledge for students about physics in terms of semiconductor and engineering that involve physical phenomena, which is the basis for engineering. Theories and principles have been focused for every syllabus so that the student could understand fully about this course.

Course Outcomes:
1. Ability to explain the theory of semiconductor physics and devices.
2. Ability to explain mechanical and electrical properties.
3. Ability to solve a problem issue in semiconductor processes.
4. Ability to evaluate a semiconductor devices characteristics and behaviours.

NDJ20403 SISTEM MIKROPENGAWAL [MICROCONTROLLER SYSTEM]

No of Credits: 3

Course Synopsis:
The aim of this course is to study the Intel 8051 microcontroller architecture and relate that knowledge to the design of microcontroller based systems. This includes the design technique using internal I/O interfacing, internal memory and application of the 8051 special feature configuration for the systems. The study of 8051 instruction set and assembly language programming through various software development tools are also emphasized as the knowledge are needed in the designing of controller-based systems.

Course Outcomes:
1. Ability to analyse the concept of microcontroller system.
2. Ability to demonstrate fundamental microcontroller system applications.
3. Ability to design a microcontroller system in a simple project.
4. Ability to conduct investigation of a simple microcontroller project using proper tools.

NDJ20503 BENTANGAN LITAR BERSEPADU [INTEGRATED CIRCUIT LAYOUT]

No of Credits: 3

Course Synopsis:
Layout design is a process of creating an accurate physical of an engineering drawing that conforms to constraints imposed by the manufacturing process. Hence, this course introduces the transistor theory, CMOS logic, and alternative CMOS logic families. Stick diagrams, design rules, and design verification are also addressed throughout the course. This course also examines on the alternative CMOS logic families in understanding the design techniques.

Course Outcomes:
1. Ability to apply microelectronic technologies, IC design flow, and VLSI design principles to create fundamental circuit designs.
2. Ability to develop CMOS transistor level, logic circuits design and layout of a circuit.
3. Ability to construct an IC layout for a circuit using industry-standard software.
4. Ability to collaborate effectively with team members and work individually to complete tasks and group projects.

NDJ20603 ELEKTRONIK ANALOG [ANALOGUE ELECTRONICS]

No of Credits: 3

Course Synopsis:
This course introduces characteristics, analysis on fundamental circuits and basic application of Bipolar Junction Transistor (BJT) and Field Effect Transistor (FET). The analysis provided a basic understanding of circuit operation and characteristics involving direct current (DC) and alternate current (AC) until a multistage amplifier. The concept of power amplifiers in various classes continues with the usage in amplifiers as well as power amplifier circuits..

Course Outcomes:
1. Ability to explain basic theories of analogue electronics.
2. Ability to analyze and evaluate operation of Bipolar Junction Transistors (BJTs), Field Effect Transistors (FETs, BJTs multistage and Power amplifier circuits.
3. Ability to construct circuit of BJT, FET, Multistage Amplifier and Power amplifier circuits experiment.

NDJ21103 PEMBUNGKUSAN ELEKTRONIK [ELECTRONIC PACKAGING]

No of Credits: 3

Course Synopsis
The aim of this course is to expose students about the electronics packaging process flow and the quantitative analysis method to control the semiconductor packaging processes. Theories and principles have been focused for every syllabus so that the student could understand fully about this course. Topics covered in this course are, Introduction to Microsystems Packaging, The Role of Packaging in Microelectronics, General Semiconductor Packaging Process Flow, Interconnection in IC Assembly, Fundamental Design For Reliability and Quantitative Analysis.

Course Outcomes:
1. Ability to explain the semiconductor packaging process flow.
2. Ability to judge and interact well about critical parameters and technology trends in semiconductor packaging process.
3. Ability to practice skills and investigate in semiconductor packaging process using modern engineering tool.

NDJ21303 ANALISA KEGAGALAN [FAILURE ANALYSIS]

No of Credits: 3

Course Synopsis:
The purpose of this course is to give the knowledge for students about the process flow of failure analysis in general and also the techniques used in failure analysis engineering as well. Destructive and NDT is the main focus in the subject and also the inspection technique as devices use for observation and analysis.Topic covered in this course are, Intro to FA, Electrical Characterization, Package Analysis, Fault Localization, Die Exposure and Die Deprocessing and also Metallographic Cross Sectioning.

Course Outcomes:
1. Ability to define the terms commonly used in failure analysis and explain the failure analysis process flow.
2. Ability to practice skills and analyze the different tools and techniques available in FA, its importance and the details operation principle.
3. Ability to analyze and propose the most suitable FA techniques to be conducted, given a particular failure.

NDJ21403 FABRIKASI WAFER [WAFER FABRICATION]

No of Credits: 3

Course Synopsis:
This course introduces the processes involved in ICs fabrication. Both theories and practicals are combined to assure that students are able to perform the wafer fabrication processes independently. Four topics related to wafer fabrication processes are covered in this course are; thermal process, photolithography, etching and metallization.

Course Outcomes:
1. Able to explain the fundamentals of semiconductor and process in wafer fabrication.
2. Able to analyze the theoretical background of each process involved in the fabrication process.
3. Able to apply appropriate techniques and develop the structure and important parameters in the fabrication process.

NDJ30003 INSTRUMENTASI ELEKTRONIK [ELECTRONIC INSTRUMENTATION]

No of Credits: 3

Course Synopsis:
Introduction to the basics of electronic instrumentation, transducers and the internet of things (IoT) system that is used in modern instrumentation systems and embedded system design. Expose students to the elements and principles of data acquisition system and sensor integration with appropriate applications. Practical involves the interfacing of transducer circuits and signal conditioning circuits to internet of things (IoT) systems.

Course Outcomes:
1. Able to explain the basic concept of electronic instrumentation and multiple type of sensor
2. Able to analyze the problem related to instrumentation electronic and Internet of things (IoT)
3. Ability to build design model-based problem related to instrumentation electronic and Internet of things (IoT)

NDJ30103 SISTEM KAWALAN [CONTROL SYSTEMS]

No of Credits: 3

Course Synopsis:
The course covers mathematical modelling of electrical and mechanical systems using Laplace transform. They will also learn the basics of transfer function, block diagram, signal flow graph and time response analysis. Afterwards, they will learn how to improve system stability in time and frequency domains. Lab experiments help understand further

Course Outcomes:
1. Ability to use Laplace transform to solve mathematical modelling and outline the characteristics of control system response.
2. Ability to analyze and evaluate the stability of a system's response in time and frequency domain.
3. Ability to reproduce open and closed loop feedback stability conditions of a system using computer aided software tools.

NDJ30203 PENGAWAL LOGIK BOLEH ATURCARA [PROGRAMMABLE LOGIC CONTROLLER]

No of Credits: 3

Course Synopsis:
Programmable Logic Controllers (PLCs) are the predominant tool for controlling industrial and specialty systems. These computer based controllers provide a variety of programming options and easily configurable inputs and outputs. This course deals with the basic operation, application and programming of the integrated industrial control system, concentrating on the industrial PLC. The course covers introduction to PLC, basic PLC operations and instructions, product ranges, benefits numbering systems and codes and combinational logic concepts pertaining to PLCs. The student will develop an understanding of the PLC central processing unit, input-output systems, programming and peripheral devices, and programming languages and will develop skills in programming and documenting on a cross section of industrial PLCs.

Course Outcomes:
1. Ability to explain the fundamental concepts of Programmable Logic Control,principles of digital design using PLCs and electronic input-output components in the engineering field.
2. Ability to apply PLC programming techniques.
3. Ability to configure and troubleshoot PLC hardware and software effectively.

NDJ30304 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course offers to fulfil the 4 credits for the final year project for diploma students.

Course Outcomes:
1. Ability to develop and perform data interpretations and analysis to solve engineering problems.
2. Ability to conduct research and investigations systematically by planning and executing in a timely manner.
3. Ability to apply appropriate techniques, modern engineering and IT tools to well-defined engineering problems.
4. Ability to evaluate the element of environment and sustainability in project implementation.
5. Ability to explain the project with efficient communication skills.
6. Ability to manage the project and finance according to Gantt Chart (milestone) and effective costing.
7. Ability to demonstrate continuous learning of new knowledge and skill to support the development of the project.

NDJ30508 LATIHAN INDUSTRI [INDUSTRIAL TRAINING]

No of Credits: 8

Course Synopsis:
The course will expose students to aspects such as technical, application, company organization structure, company operation, department function, work procedure, safety procedure, management, communication, skills, project management and presentation. The students are also required to submit their log book and final report at the end of the industrial training. Overall, the course is practical-based.

Course Outcomes:
1. Ability to apply theoretical knowledge and practical skills to application in the industry.
2. Ability to apply theoretical knowledge and practical skills to application in the industry.
3. Ability to commit to professional ethics of technician practices.
4. Ability to work effectively as an individual, and as a member in diverse technical teams to complete the given task by the host company.
5. Ability to communicate effectively and able to comprehend the works of others, writing reports and present own work.

FACULTY OF MECHANICAL ENGINEERING & TECHNOLOGY (FKTM)

Programmes Offered:

1. Bachelor of Mechanical Engineering with Honours
2. Bachelor of Manufacturing Engineering with Honours
3. Bachelor of Agricultural Engineering with Honours
4. Bachelor of Mechanical Engineering Technology (Machining) with Honours
5. Bachelor of Mechanical Engineering Technology (Agricultural Systems) with Honours
6. Bachelor of Mechanical Engineering Technology (Product Design) with Honours
7. Bachelor of Mechanical Engineering Technology (Materials Processing) with Honours
8. Bachelor of Technology in Industrial Machining with Honours
9. Bachelor of Technology in Automotive with Honours
10. Bachelor of Technology in Welding with Honours
11. Diploma in Manufacturing Engineering
12. Diploma in Mechanical Engineering Technology

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UR4540001
Diploma in Manufacturing Engineering

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who are competence in manufacturing engineering field as demonstrated through career progression.

PEO 2
Graduates who are involved in community or professional organization and make contribution towards society.

PEO 3
Graduates who pursue continuing education opportunities.

PEO 4
Graduates who make contribution through innovation and entrepreneurship

PROGRAMME OUTCOMES (PO)

PO1
Knowledge: Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices.

PO2
Problem analysis: Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.

PO3
Design/development of solutions: Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required.

PO4
Investigation: Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.

PO5
Tool Usage: Apply appropriate techniques, resources, and modern engineering computing and IT tools to well- defined engineering problems, with an awareness of the limitations.

PO6
The Engineering Technician and the World: Consider sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problem.

PO7
Ethics: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.

PO8
Individual and Collaborative Teamwork: Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings.

PO9
Communications: Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.

PO10
Project Management and Finance: Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.

PO11
Lifelong Learning: Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.

PO12
Personal and Entrepreneurial Skills: Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities.

CURRICULUM STRUCTURE
UR4540001 DIPLOMA IN MANUFACTURING ENGINEERING INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (74 CREDITS)	MDJ12103 Materials [Bahan]	MDJ10103 Statics and Dynamics [Statik dan Dinamik]	MDJ20103 Mechanics of Materials [Mekanik Bahan]	MDJ20203 Termo-Bendalir [Themo-Fluid]	MDJ34104 Final Year Project [Projek Tahun Akhir]	MDJ39908 Industrial Training [Latihan Industri]
	MDJ11103 Computer Programming [Pengaturcaraan Komputer]	MDJ12503 Computer-Aided Design [Reka Bentuk Terbantu Komputer]	MDJ21103 Electrical Technology [Teknologi Elektrik]	MDJ20303 Pneumatic and Hydraulic Systems [Sistem Pneumatik dan Hidraulik]	MDJ35102 Safety and Ethics [Keselamatan dan Etika]	
	MDJ12403 Engineering Drawing [Lukisan Kejuruteraan]	MDJ13303 Manufacturing Process 1 [Proses Pembuatan 1]	MDJ22302 Engineering Design [Reka Bentuk Kejuruteraan]	MDJ21203 Electronics [Elektronik]	MDJ31103 Manufacturing Automation and Internet of Things [Automasi Pembuatan dan Internet Pelbagai Benda]	
	MDJ13103 Technology and Handwork Practice [Teknologi dan Amalan Kerja Tangan]	MDJ13203 Technology and Machining Practice [Teknologi dan Amalan Pemesinan]	MDJ23103 Mamufacturing Process 2 [Proses Pembuatan 2]	MDJ22403 Machine Components Design [Reka Bentuk Komponen Mesin]	MDJ32102 Injection Mould Design [Reka Bentuk Acuan Suntikan]	
				MDJ23203 Computer-Aided Manufacturing [Pembuatan Terbantu Komputer]	MDJ33102 Production Planning and Control [Perancangan dan Kawalan Pengeluaran]	
					MDJ33303 Quality Engineering [Kejuruteraan Kualiti]	
COMMON CORE COURSES (9 CREDITS)		QDQ10103 Mathematics I [Matematik I]	QDQ20203 Mathematics II [Matematik II]	QDQ20303 Mathematics III [Matematik III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDZXXX01 Co-Curriculum 1 [Ko-Kurikulum 1]	SDB11202 Communicative English 2 [Bahasa Inggeris Komunikasi 2]	SDB11302 Communicative English 3 [Bahasa Inggeris Komunikasi 3]			
	SDU12002 Integrity and Anti-Corruption [Integriti dan Anti Rasuah]	SDZXXX01 Co-Curriculum 2 [Ko-Kurikulum 2]	SDU12902 Philosophy And Current Issues [Falsafah dan Isu Semasa]		SDU22502 Basic Entrepreneurship [Asas Keusahawanan]	
TOTAL CREDITS (95 CREDITS)	**15**	**18**	**18**	**18**	**18**	**8**
AUDIT COURSES	QDQ10002[1] Preliminary Mathematics [Matematik Awalan]	SDB31002 [2] Malay Language [Bahasa Melayu]				
	SDB11102 [3] Communicative English 1 [Bahasa Inggeris Komunikasi 1]					

[1] Compulsory for students with grade D and without Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 - Preliminary Mathematics is an Audit course.
[2] Compulsory for students with grades B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course.
[3] Compulsory for students with grades B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course.

UR4521003
Diploma in Mechanical Engineering Technology

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who are competent in their respective engineering technology fields as exhibited through career development.

PEO 2
Graduates who involved and contribute to the society.

PEO 3
Graduates who pursue education opportunity continually

PEO 4
Graduates who contribute through innovation and entrepreneurship

PROGRAMME OUTCOMES (PO)

PO1
Knowledge: Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices.

PO2
Problem Analysis: Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.

PO3
Design/ Development of Solutions: Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required.

PO4
Investigation: Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.

PO5
Tool Usage: Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.

PO6
The Engineering Technician and the World: Consider sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems

PO7
Ethics: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.

PO8
Individual and Collaborative Teamwork: Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings.

PO9
Communications: Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.

PO10
Project Management and Finance: Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.

PO11
Lifelong Learning: Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.

PO12
Personal and Entrepreneurial Skills: Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities.

CURRICULUM STRUCTURE
UR4521003 DIPLOMA IN MECHANICAL ENGINEERING TECHNOLOGY INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (73 CREDITS)	MDK10103 Statics and Dynamics [Statik dan Dinamik]	MDK10502 Manufacturing Technology [Teknologi Pembuatan]	MDK20103 Strength of Materials [Kekuatan Bahan]	MDK20502 Computer Programming [Pengaturcaraan Komputer]	MDK30104 Final Year Project [Projek Tahun Akhir]	MDK30608 Industrial Training [Latihan Industri]
	MDK10203 Engineering Graphics [Grafik Kejuruteraan]	MDK10603 Computer Aided Design [Reka Bentuk Berbantu Komputer]	MDK20203 Computer Aided Design II [Reka Bentuk Berbantu Komputer II]	MDK20603 Project Management [Pengurusan Projek]	MDK30203 Heat Transfer [Pemindahan Haba]	
	MDK10303 Workshop Technology [Teknologi Bengkel]	MDK10703 Quality Control [Kawalan Kualiti]	MDK20303 Thermodynamics [Termodinamik]	MDK20703 Instrumentation and Control [Instrumentasi dan Kawalan]	MDK30303 Computer Aided Engineering [Kejuruteraan Berbantu Komputer]	
	MDK10403 Materials Science [Sains Bahan]	MDK10803 Basic Electrical and Electronics [Asas Elektrik dan Elektronik]	MDK20403 Material Testing [Pengujian Bahan]	MDK20803 Fluid Mechanics [Mekanik Bendalir]	MDK30403 Industrial Ergonomics [Ergonomik Industri]	
				MDK20903 CNC Technology [Teknologi CNC]	MDK30503 Ethics and Safety [Etika dan Keselamatan]	
COMMON CORE (9 CREDITS)		QDQ10103 Mathematics I [Matematik I]	QDQ20203 Mathematics II [Matematik II]	QDQ20303 Mathematics III [Matematik III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDU12002 Integrity and Anti-Corruption [Integriti dan Anti Rasuah]	SDB11202 Communicative English 2 [Bahasa Inggeris Komunikasi 2]	SDB11302 Communicative English 3 [Bahasa Inggeris Komunikasi 3]		SDU22502 Basic of Entrepreneurship [Asas Keusahawanan]	
	SDU12902 Philosophy and Current Issues [Falsafah dan Isu Semasa]					
	SDZXXX01 Co-curriculum 1 [Ko-Kurikulum 1]	SDZXXX01 Co-curriculum 2 [Ko-Kurikulum 2]				
TOTAL CREDITS (94 CREDITS)	**17**	**17**	**17**	**17**	**18**	**8**
AUDIT COURSES	QDQ10002[1] Preliminary Mathematics [Matematik Awalan]	SDB31002 [2] Malay Language [Bahasa Melayu]				
	SDB11102 [3] Communicative English 1 [Bahasa Inggeris Komunikasi 1]					

[1] Compulsory for students with grade D and without Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 - Preliminary Mathematics is an Audit course.
[2] Compulsory for students with grades B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course.
[3] Compulsory for students with grades B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course.

LIST OF COURSES:

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
MDJ10103	Statik dan Dinamik [Statics and Dynamics]	Tiada
MDJ11103	Pengatucaraan Komputer [Computer Programming]	Tiada
MDJ12103	Bahan [Materials]	SDG 11
MDJ12403	Lukisan Kejuruteraan [Engineering Drawing]	Tiada
MDJ12503	Reka Bentuk Terbantu Komputer [Computer-Aided Design]	Tiada
MDJ13103	Teknologi dan Amalan Kerja Tangan [Technology and Handwork Practice]	Tiada
MDJ13203	Teknologi dan Amalan Pemesinan [Technology and Machining Practice]	Tiada
MDJ13303	Proses Pembuatan 1 [Manufacturing Process 1]	SDG 9
MDJ20103	Mekanik Bahan [Machanics of Material]	Tiada
MDJ20203	Themo-Bendalir [Thermo-Fluid]	SDG 7
MDJ20303	Sistem Pneumatik dan Hidraulik [Pneumatic and Hydraulic System]	Tiada
MDJ21103	Teknologi Elektrik [Electrical Technology]	Tiada
MDJ21203	Elektronik [Electronics]	Tiada
MDJ22302	Reka Bentuk Kejuruteraan [Engineering Design]	Tiada
MDJ22403	Reka Bentuk Komponen Mesin [Machine Components Design]	Tiada
MDJ23103	Proses Pembuatan 2 [Manufacturing Process 2]	SDG 9
MDJ23203	Pembuatan Terbantu Komputer [Computer-Aided Manufacturing]	Tiada
MDJ31103	Automasi Pembuatan dan Internet Pelbagai Benda [Manufacturing Automation and Internet of Things]	SDG 9

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
MDJ32102	Reka Bentuk Acuan Suntikan [Injection Mould Design]	Tiada
MDJ33102	Perancangan dan Kawalan Pengeluaran [Production Planning and Control]	Tiada
MDJ33303	Kejuruteraan Kualiti [Quality Engineering]	Tiada
MDJ34104	Projek Tahun Akhir [Final Year Project]	Tiada
MDJ35102	Keselamatan dan Etika [Safety and Ethics]	SDG 8
MDJ39908	Latihan Industri [Industrial Training]	Tiada
MDK10103	Statik & Dinamik [Statics & Dynamics]	Tiada
MDK10203	Grafik Kejuruteraan [Engineering Graphics]	Tiada
MDK10303	Teknologi Bengkel [Workshop Technology]	Tiada
MDK10403	Sains Bahan [Materials Science]	SDG 12, SDG 13
MDK10502	Teknologi Pembuatan [Manufacturing Technology]	SDG 9
MDK10603	Reka Bentuk Berbantu Komputer [Computer Aided Design]	SDG 9
MDK10703	Kawalan Kualiti [Quality Control]	SDG 9, SDG 12
MDK10803	Asas Elektrik dan Elektronik [Basic Electrical and Electronics]	Tiada
MDK20103	Kekuatan Bahan [Strength of Materials]	Tiada
MDK20203	Reka Bentuk Berbantu Komputer II [Computer Aided Design II]	SDG 9
MDK20303	Termodinamik [Thermodynamics]	SDG 7, SDG 13
MDK20403	Pengujian Bahan [Material Testing]	Tiada
MDK20502	Pengaturcaraan Komputer [Computer Programming]	Tiada

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
MDK20603	Pengurusan Projek [Project Management]	SDG 17
MDK20703	Instrumentasi dan Kawalan [Instrumentation and Control]	Tiada
MDK20803	Mekanik Bendalir [Fluid Mechanics]	Tiada
MDK20903	Teknologi CNC [CNC Technology]	SDG 9
MDK30104	Projek Tahun Akhir [Final Year Project]	Tiada
MDK30203	Pemindahan Haba [Heat Transfer]	SDG 7, SDG 13
MDK30303	Kejuruteraan Berbantu Komputer [Computer Aided Engineering]	SDG 9
MDK30403	Ergonomik Industri [Industrial Ergonomics]	SDG 3
MDK30503	Etika dan Keselamatan [Ethics and Safety]	SDG 3
MDK30608	Latihan Industri [Industrial Training]	Tiada

MDJ10103 STATIK DAN DINAMIK [STATICS AND DYNAMICS]

No of Credits: 3

Course Synopsis:
This course is mainly divided into two parts; statics and dynamics. In statics, student will be exposed to the basic concepts of engineering mechanics such as forces, moments and friction. They will apply this basic knowledge to analyze the equilibrium of rigid bodies, as well as the stability of a structure. The subject of dynamics will be dealt in two parts: kinematics, which treats only the geometric aspects of the motion, and kinetics, which is the analysis of the forces causing the motion. Analysis regarding kinetic problems will be solved by using acceleration method, principle of work and energy, and principle of impulse and momentum.

Course Outcomes:
1. Ability to explain the fundamental of statics and dynamics.
2. Ability to analyze problems related to statics and dynamics.
3. Ability to analyze the experimental finding related to statics and dynamics principle.

MDJ11103 PENGATURCARAAN KOMPUTER [COMPUTER PROGRAMMING]

No of Credits: 3

Course Synopsis:
This course introduces computer system introduction, Problem Solving Analysis and Programming Concept including Variables, Arithmetic Operations, Control Structure, Looping Function , Numeric Array, User Friendly Interface and their application to solve engineering problems. C programming language is utilized in this course.

Course Outcomes:
1. Ability to construct C programs with the most suitable variables, arithmetic operations and math functions.
2. Ability to construct C programs with control flow, functions, pointers and arrays.
3. Ability to react to the process of writing, compiling and executing using appropriate predefined functions in C programs.

MDJ12103 BAHAN [MATERIALS]

No of Credits: 3

Course Synopsis:
Materials science and engineering drives innovation in both research and industry. It is fundamental to all other science and engineering disciplines. Concerning the importance of the knowledge in materials this course is designed to complete the student's knowledge on materials science and engineering materials fundamentals. Materials focus on knowledge of engineering materials application, atomic bonding, crystal structure, mechanical and physical properties, corrosion mechanism, microstructural analysis, phase diagram, ferrous and non-ferrous alloys, polymer and advanced materials.

Course Outcomes:
1. Ability to analyse transformation, microstructure and behaviors of engineering materials - ferrous, non ferrous and polymer.
2. Ability to analyze mechanical and corrosion properties of engineering materials.
3. Ability to demonstrate sustainability by solving material-related challenges.
4. Ability to comply with testing standards in material testing and characterisation.

MDJ12403 LUKISAN KEJURUTERAAN [ENGINEERING DRAWING AND COMPUTER AIDED]

No of Credits: 3

Course Synopsis:
The course aims to provide exposure and skills to Engineering Diploma students in basic Engineering Drawing, Computer-aided Drafting (CAD) and its engineering applications. The course covers Engineering Drawing for beginners followed by projection systems, oblique and isometric sketches, before going on to Computer Aided Drafting using AutoCAD software, focusing on product design in 2D and 3D. Knowledge in dimensioning and geometrical tolerance (GDT) will enhance student's ability in interpreting and assessing information from primary raw data of an engineering drawing.

Course Outcomes:
1. Ability to construct technical drawing and drafting using proper technique.
2. Ability to construct technical drawing and drafting using CAD software.
3. Ability to apply Geometric Dimensioning and Tolerance (GD&T) in engineering drawing as a life long learning.

MDJ12503 REKA BENTUK TERBANTU KOMPUTER [COMPUTER-AIDED DESIGN]

No of Credits: 3

Course Synopsis:
This course focus on giving exposure and skill to students about basis of 3D modeling and its application in engineering field by using 3D Modeling software. This course include details on 3D modeling followed by producing 2D drawing, assembly drawing, exploded drawing, surface modeling, rendering and animation. All this skills will help student to apply its in engineering field to fulfill industry demand.

Course Outcomes:
1. Ability to construct 3D model of components and technical drafting by using 3D Modelling software.
2. Ability to construct assembly and exploded drawing using 3D Modelling software.
3. Ability to reproduce 3D animation and rendering for the components using 3D Modelling software.
4. Ability to demonstrate technical drawing documents for drawing projects.

MDJ13103 TEKNOLOGI DAN AMALAN KERJA TANGAN [TECHNOLOGY AND HANDWORK PRACTICE]

No of Credits: 3

Course Synopsis:
The course will cover safety precautions in the workshop, the basics measuring equipment such as vernier calipers, micrometers, etc., followed by theory and practice of various basic cutting processes, e.g. filling, chiselling, sawing, etc. Students also will be exposed to sheet metalworking and various joining and assembly processes such as welding.

Course Outcomes:
1. Ability to apply the principles of craftsmanship in engineering practice.
2. Ability to construct a product using various hand tools and machines in workshop.
3. Ability to demonstrate the knowledge of safety in engineering activities.
4. Ability to complete the project through effective project management.
5. Ability to apply business model development in workshop project.

MDJ13203 TEKNOLOGI DAN AMALAN PEMESINAN [TECHNOLOGY AND MACHINING PRACTICE]

No of Credits: 3

Course Synopsis:
This course introduce about safety aspects in workshop and fundamental of measurement technique followed by milling, lathe and grinding operation which consists of introduction to basic knowledge of various cutting tools, parts of machine and its functions, machine operations, and numerous calculations involving the operations.

Course Outcomes:
1. Ability to apply knowledge on conventional machining processes.
2. Ability to produce products using conventional machining.
3. Ability to work independently and teamwork.
4. Ability to apply knowledge on safety in machining.

MDJ13303 PROSES PEMBUATAN 1 [MANUFACTURING PROCESS 1]

No of Credits: 3

Course Synopsis:
This course explore the manufacturing process which used in industry to convert raw material into finished product. In the beginning, introduction to manufacturing technology will be given, followed by material selection in manufacturing and heat treatment process. Various metal casting processes will be introduced including sand casting, investment casting, vacuum casting and other casting processes. Overview of forming and shaping process will be given on rolling, forging, extrusion, drawing, sheet metal, powder metallurgy, injection moulding and rapid prototyping process. Besides that, this course also include various joining process such as brazing, soldering, adhesive bonding, and mechanical fastening processes.

Course Outcomes:
1. Ability to apply the manufacturing process: Plastic Shaping, Metal Casting, Metal forming and Joining.
2. Ability to propose suitable manufacturing processing technique to produce various product.
3. Ability to produce manufacturing products using appropriate manufacturing processes..

MDJ20103 MEKANIK BAHAN [MECHANICS OF MATERIAL]

No of Credits: 3

Course Synopsis:
This course is designed to provide students with a clear presentation of both; the theory and application of mechanics of materials principles. Students are introduced to acquire the knowledge of the physical behavior of materials under load and material behavior requirement. At the end of the course, students are expected to be able to solve engineering problems related to mechanisms and rigid bodies.

Course Outcomes:
1. Ability to apply the fundamental theory of mechanics of materials.
2. Ability to analyse the mechanics of materials principles related to various engineering problems.
3. Ability to demonstrate the experimental works related to mechanics of materials principle.

MDJ20203 THERMO-BENDALIR [THERMO-FLUID]

No of Credits: 3

Course Synopsis:
This course designed to provide a background on the fundamental principles and engineering applications of thermodynamics, heat transfer and fluid mechanics. These three areas collectively make up the field of thermal sciences but are traditionally taught as separate courses. However, in this course sequence, the three areas are presented in a more integrated manner, emphasizing the connectivity between these areas through the use of 'realworld' examples of thermal systems. The course begins with discussion on Basic concepts of thermodynamics, first law of thermodynamics. Then students will be discussing on topic Thermodynamics properties of liquids and solids. Course sequence of Heat Transfer and Fluid mechanics, topic is covered on mod of heat transfer (Conduction, Convection and Radiation) and then cover-up for fluid properties and fluid at rest. The fundamental laws, governing the motion of fluids are discussed next.

Course Outcomes:
1. Ability to analyze the principle of thermodynamic in selected area of study.
2. Ability to analyze the principle of heat transfer in selected area of study.
3. Ability to analyze the principle of fluid mechanic in selected area of study.

MDJ20303 SISTEM PNEUMATIK DAN HIDRAULIK [PNEUMATIC AND HYDRAULIC SYSTEM]

No of Credits: 3

Course Synopsis:
This course will be exposing students about the fundamental of basic Pneumatic & Hydraulic Systems that are being practiced in Industry today. This course will be focusing on basic introduction which covers symbols, components, and circuits used in Pneumatic & Hydraulic Systems as well as its application in industry. To increase knowledge of students in this course, a practical approach will be done using the Pneumatic & Hydraulic equipments aided by computer software to construct the related circuits in Manufacturing Automation Lab. At the end of this course, the Pneumatic System application will be combined with Electro-Pneumatic System which uses electric power, relay, sensor and limit switch to move the components and actuator in Pneumatic System.

Course Outcomes:
1. Ability to discuss concepts of Pneumatic & Hydraulic Systems.
2. Ability to illustrate components and symbols of Pneumatic & Hydraulic Systems.
3. Ability to design circuits of Pneumatic Systems that related to industrial applications.
4. Ability to interpret the Electro-Pneumatic Systems applications.

MDJ21103 TEKNOLOGI ELEKTRIK [ELECTRICAL TECHNOLOGY]

No of Credits: 3

Course Synopsis:
This course is offered to non-electrical engineering background students. This course is intended to provide students with clear understanding the concepts and principles of the DC and AC circuits, basic principles of three phase AC circuits, and electromagnetism. The students will also gain an understanding of the basic operating principles of a transformer, calculate induced e.m.f, equivalent resistance, reactance and impedance, losses and transformer efficiency. At the end of the chapter, the students will understand the principles of DC Machines and three phase induction motors and do some basic calculation of losses and efficiency of DC Machines

Course Outcomes:
1. Ability to apply the terms, units, laws and theorems of basic electrical system.
2. Ability to apply the concept and principle of single phase and three phase AC circuits parameters.
3. Ability to analyze the concept and principle of magnetic fields and the operation of transformer.

4. Ability to analyze the concept and principles used in DC machines and three phase induction motor.
5. Ability to apply appropriate techniques and tools to demonstrate fundamental skills in electrical system.

MDJ21203 ELEKTRONIK [ELETRONICS]

No of Credits: 3

Course Synopsis:
The course aims to introduce and expose students to electronic devices which, includes analogue and digital devices. The analogue device topic includes introducing basic electronic components, semiconductor, PN junction, diodes, zener diodes, bipolar junction transistor (BJT) and operational amplifier. The digital device topic includes the introduction to digital electronic binary number system, Boolean algebra, logic gates, logic circuits, Boolean function and combinational logic circuits. Students will be exposed to the electronic basic, operation concept and analysis method including the electronic devices used in industry. Lab tests will also be done to clarify the topics learned in the class.

Course Outcomes:
1. Ability to apply the concepts, principles and applications of electronic analogue components.
2. Ability to analyze electronic circuits.
3. Ability to apply the concepts, principles and applications of electronic digital components.

MDJ22302 REKA BENTUK KEJURUTERAAN [ENGINEERING DESIGN]

No of Credits: 2

Course Synopsis:
The course introduces the concepts and principles of engineering design approach in product development. Engineering design is the systematic integration of scientific principles, technical information and aesthetics in the definition of a product, process or system to perform pre-specified functions with maximum economy and efficiency. Therefore, the course introduces the phases of the engineering design process. Engineering design is commonly related to product function and performance aspects built in during detail and parametric design stages. However, it is very important to understand that a successful design solution is the result of the integration of engineering knowledge and non-engineering as well. While engineers provide a technical solution, engineering design implies a solution that is aesthetic as well. In other words, designers too are involved to ensure that the end product is economical, eco-friendly and appeals to users. Topics such as project planning, understanding customer needs, engineering economics and prototype making are included as they are essential albeit supplementary inclusions in the design process. The knowledge of these topics helps the students produce better designs of products. From the concepts and principles learned, students are required to run a project in designing a simple product. This project will focus on the design development of the product from the mechanical and material aspects. At the same time, this activity will expose the students to the concepts of working in a group, effective communication skills and design project management. Besides this project activity, students will do a project report, and project presentation and use CAD softwares.

Course Outcomes:
1. Ability to analyse engineering design process as a step to create product design specifications.
2. Ability to generate design solution to produce prototype by following methodology of engineering design process.
3. Ability to communicate effectively design ideas and information..

MDJ22403 REKA BENTUK KOMPONEN MESIN [MACHINE COMPONENTS DESIGN]

No of Credits: 3

Course Synopsis:
This course provides concept and understanding to allow students to find suitable designs for components in designing machine system, jig and fixtures. It focuses on basics of power transmission system, motors, fasteners and fundamental principles of jig and fixtures. Students will be exposed with simple design problems before being assigned to compute design parameters. At the end of this course, students will be analyzed simple designs of machine components by using CAD Aided Engineering (CAE) software.

Course Outcomes:
1. Ability to design mechanical components and machine elements.
2. Ability to integrate engineering management principles in design project.
3. Ability to apply specialised technical knowledge for design solution.

MDJ23103 PROSES PEMBUATAN 2 [MANUFACTURING PROCESS 2]

No of Credits: 3

Course Synopsis:
This course exposes students to the utilization of advanced machining processes. The course begins with an overview of advanced machining processes, followed by CNC 5-axis, EDM wire cut, super drill, die sinker, abrasive water jet, electrochemical and laser cut machines operation. Next, the Programming Operation which includes G and M codes will be taught and students will also be exposed to the principles of operation and applications of other advanced manufacturing processes. Students also attend industrial visit to expose what the advanced machining used by the industrial based on current technology.

Course Outcomes:
1. Ability to explain advanced machining processes, tools related and control systems.
2. Ability to distinguish the advanced machining processes and applications.
3. Ability to operate the machine: CNC, EDM Wire Cut Machine, EDM Die Sinker Machine.

MDJ23203 PEMBUATAN TERBANTU KOMPUTER [COMPUTER-AIDED MANUFACTURING]

No of Credits: 3

Course Synopsis:
This course introduces principles and application of CAD/CAM system which integrates with the application of CNC machine. This course enables student to understand the theory, concept, and application of CAD/CAM and CNC machine in an industry. Student will be exposed to CAD software to illustrate parts and then using CAM software to convert CAD file into numerical control (NC) codes. Then transfer the NC code to the CNC machine and perform the actual machining process. This course also enable students to understand the NC code to review the program.

Course Outcomes:
1. Ability to explain CAD/CAM system as part of product development process.
2. Ability to generate part programming for machining process based on CAD file.
3. Ability to create Numerical Control (NC) codes manually or using CAD/CAM software and transfer the NC program to operate CNC machine.

MDJ32102 REKA BENTUK ACUAN SUNTIKAN [INJECTION MOULD DESIGN]

No of Credits : 2

Course Synopsis:
This course introduces students to basic khowledge of plastic injection mold. This course is focuses on basic step in designing mould start with procudure in designing plastic products, procedure in deisgning plastic injection mould, analyses of material flow in plastic injection mould, translation of 3D data to CAM and continuing producing the assembly drawing of plastic injection mould to produce a plastic product.

Course Outcomes:
1. Ability to describe the basic terminology process in plastic injection molding and mould design.
2. Ability to describe the procedure of designing plastic product for injection moulding process.
3. Ability to apply Mould Flow Plastic Insight (MPI) software for plastic parts design.
4. Ability to design the mould for plastic injection moulding using design software.

MDJ31103 AUTOMASI PEMBUATAN DAN INTERNET PELBAGAI BENDA [MANUFACTURING AUTOMATION AND INTERNET OF THINGS]

No of Credits: 3

Course Synopsis:
This course is an introduction to the Manufacturing and Robotics Automation system used in the Industry today. It covers topics related to automation systems such as pneumatic, hydraulic, variable logic control (PLC), material management, Automated Storage and Retrieval System (ASRS), Automated Directional Vehicle (AGV), customizable manufacturing system (FMS) , integrated computer manufacturing (CIM) and security automation. Students will also be trained in designing pneumatic and hydraulic circuits manually before using variable logic control (PLC) and FluidSIM software. The application of automation systems today is increasingly complex and complex to develop. Internet of Things (IoT) was introduced in this course to enable different devices and systems to be connected to the internet chain and subsequently the automation system will function more optimally.

Course Outcomes:
1. Ability to explain the concepts of Automation and Programmable Logic Controller (PLC) in manufacturing technologies applications.
2. Ability to apply the concept of material handling and storage system in automated system.
3. Ability to design the Automated System with application of Programmable Logic Controller (PLC).
4. Ability to design the Automated System with integration of Internet of Things (IoT) for industrial applications.

MDJ33102 PERANCANGAN DAN KAWALAN PENGELUARAN [PRODUCTION PLANNING AND CONTROL]

No of Credits: 2

Course Synopsis:
This course addresses the production planning and control in manufacturing and service firms. The course introduces students to the fundamental concepts of modern production management and discusses its importance to the overall strategy and competitiveness. The students learn about the main approaches supporting the decision process in designing and operating the production and logistics system of an enterprise. Long-term, medium-term and short-term planning which includes forecasting, aggregate planning, materials requirement planning (MRP), lot sizing scheduling, project scheduling, supply chain management, inventory management, production planning, materials handling, JIT, Lean production system and human resources and job design are covered.

Course Outcomes:
1. Ability to analyse problems in Production Planning & Control and management.
2. Ability to analyse project problems related to project management.
3. Ability to function effectively as a team member.

MDJ33303 KEJURUTERAAN KUALITI [QUALITY ENGINEERING]

No of Credits: 3

Course Synopsis:
This course emphasizes the knowledge on quality control either by basic principles or concepts in controlling and supervising the quality control of products and services. Students will be exposed to quality control tools such as basic statistic, 7 quality control tools, acceptance sampling, control chart and quality cost. Students will also be exposed to the importance of International Standard of Quality Assurance, ISO 9000 series for organization.

Course Outcomes:
1. Ability to apply the basic principle statistic and quality management system in the principle Quality Control.
2. Ability to analyze the quality products and services by using control chart,Statistical Process Control and Acceptance Sampling.
3. Ability to evaluate the quality cost and quality improvement technique based on Quality System ISO series.
4. Ability to apply the Statistical Process Control and seven (7) basic tools and technique of quality as a long life learning.

MDJ34104 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course is a small scale research project for final year students and expected to be completed within the same semester. The projects are based of solving the engineering problem by understand the problems, troubleshooting, identify, solves and finally report writing for the documentation purposes. Students are required to manage the project individually with the guidance of the project supervisor.

Course Outcomes:
1. Ability to identify problem statement and sustainable solution for society.
2. Ability to design engineering solution utilizing an engineering practice.
3. Ability to complete the project through effective project management.
4. Ability to write technical report and communicate in oral presentation.
5. Ability to construct a functional prototype.
6. Ability to establish the need to engage in independent and lifelong learning in engineering to complete the project.
7. Ability to analyze potential commercialization of the project.

MDJ35102 KESELAMATAN DAN ETIKA [SAFETY AND ETHICS]

No of Credits: 2

Course Synopsis:
This course aims to explain the main concepts in engineering ethics, sustainability, risk management and occupational safety and health as well as to expose the student to the basic law in the engineering context. The materials will be introductory nature to enable engineering technician to appreciate factors that have to be considered in decision-making. At the end of the course, students will be able to identify and discuss issues and challenges faced by engineering technician relating to engineering ethics, environmental & sustainability, risk management and to understand the legal requirements related to engineering field.

Course Outcomes:
1. Ability to evaluate the issues and challenges of engineering ethics.
2. Ability to appraise issues related to sustainability and its impact to societal and environment context.
3. Ability to evaluate hazards, risk management, occupational safety & health (OSHA) and legal procedures on engineering issues.

MDJ39908 LATIHAN INDUSTRI [INDUSTRIAL TRAINING]

No of Credits: 8

Course Synopsis:
This course will expose students to technical, application, company organization structure, company operation, department function, work procedure, safety procedure, management, communication, skills, project management and presentation. The industrial training is clearly desirable for students to be properly trained for the skills involved, the central aim is to acquire craft skills. The students are also required to submit their log-book and written report at the end of the industrial training.

Course Outcomes:
1. Ability to apply theoretical knowledge and practical skills gained in the related industry
2. Ability to practice safety, health, legal and cultural issues in a working environment
3. Ability to commit to professinal ethics of technician practices.
4. Ability to work effectively as individual and as a member in diverse technical teams to complete the given task by the host company.

MDK10103 STATIK DAN DINAMIK [STATICS AND DYNAMICS]

No of Credits: 3

Course Synopsis:
This course provides a fundamental understanding of statics and dynamics, essential for analysing mechanical systems. In statics, students will learn key concepts such as forces, moments, and free-body diagrams, applying them to analyse and solve engineering statics problems involving equilibrium and support reactions in mechanical structures and components. The dynamics part of the course will cover kinematics, which focuses on the geometric aspects of motion, and kinetics, which examines the forces causing motion. By the end of this course, students will develop analytical skills to solve engineering problems related to statics and dynamics.

Course Outcomes:
1. Ability to apply the basic concepts and principles of statics and dynamics.
2. Ability to analyse engineering problems related to statics and dynamics.
3. Ability to analyse the experimental findings related to the principles of statics and dynamics

MDK10203 GRAFIK KEJURUTERAAN [ENGINEERING GRAPHICS]

No of Credits: 3

Course Synopsis:
This course introduces students to the principles and techniques of engineering graphics. It covers basic geometrical constructions, dimensioning, multiview projections, isometric and oblique drawings, and sectional views using manual drawing techniques. Students will also be introduced to Computer-Aided Drafting (CAD), including 2D drawing construction, editing, and dimensioning, as well as basic 3D solid modelling. By the end of the course, students will be able to produce detail and assembly drawings in accordance with engineering standards.

Course Outcomes:
1. Ability to construct engineering drawing and drafting using manual drawing techniques.
2. Ability to construct engineering drawing and drafting using CAD software.
3. Ability to produce detail and assembly drawing using CAD software.

MDK10303 TEKNOLOGI BENGKEL [WORKSHOP TECHNOLOGY]

No of Credits: 3

Course Synopsis:
This course introduces students to fundamental workshop practices in mechanical engineering technology. It covers key processes including measurement techniques, cutting, fitting, joining, metal forming, and the operation of turning and milling machines. Emphasis is placed on proper tool handling, safety procedures, and the application of standard engineering practices. Through hands-on sessions, students will gain practical experience and a solid understanding of workshop operations.

Course Outcomes:
1. Ability to demonstrate the proper use of various measurement equipment and hand tools to produce work specimens.
2. Ability to operate milling and turning machines to produce work specimens.

MDK10403 SAINS BAHAN [MATERIALS SCIENCE]

No of Credits: 3

Course Synopsis:
This course provides a foundational understanding of materials science, focusing on atomic structures, atomic bonding in solids, and crystal structures. Students will explore the mechanical properties of materials, phase diagrams, phase transformations, heat treatment processes for ferrous and non-ferrous alloys. Additionally, the course covers polymers, ceramics and composites. By applying this knowledge, students will develop the ability to analyse material properties and make informed material selections while considering sustainability and environmental impact in engineering applications.

Course Outcomes:
1. Ability to analyse atomic structure, interatomic bonding, crystalline structures, and solid imperfections and their influence on engineering material properties.
2. Ability to analyse the mechanical properties of engineering materials, as well as phase diagrams, phase transformations and thermal processing of metals.
3. Ability to analyse material properties through standard material testing procedures.
4. Ability to demonstrate awareness of sustainable and environmental considerations in the selection of engineering materials.

MDK10502 TEKNOLOGI PEMBUATAN [MANUFACTURING TECHNOLOGY]

No of Credits: 2

Course Synopsis:
This course is designed to introduce the various types of technologies used in the manufacturing process of a product. Some of the manufacturing technologies covered include the casting process, bulk deformation process, sheet metal working process, and rapid prototyping. Understanding the correct application of these technologies during the design and manufacturing stages ensures high product quality and optimal process efficiency.

Course Outcomes:
1. Ability to explain the concepts and principles of solidification, shaping, and special processing technologies.
2. Ability to analyse problems related to metal forming, sheet metalworking, joining, and assembly processes and technologies.
3. Ability to demonstrate basic manufacturing processes such as casting and forming, using appropriate techniques and safety procedures.
4. Ability to discuss new manufacturing technologies to support continuous learning and professional development.

MDK10603 REKA BENTUK BERBANTU KOMPUTER [COMPUTER AIDED DESIGN]

No of Credits: 3

Course Synopsis:
This course aims to provide students with foundational knowledge and practical skills in 3D and geometric modelling, specifically applied within the engineering discipline using 3D modelling software. It covers comprehensive topics including creating 3D models, generating 2D drawings from those models, converting 2D drawings back into 3D models, as well as preparing assembly and exploded views, and rendering techniques. These skills enable students to develop technical drawings and virtual prototypes that align with manufacturing requirements.

Course Outcomes:
1. Ability to construct 2D sketches, 3D solid models, and 2D drawings from 3D parts and assemblies using CAD software.
2. Ability to perform and organize 3D modelling-based product and rendering using related applications and CAD software.
3. Ability to collaborate effectively within a team to complete CAD modelling projects
4. Ability to effectively communicate technical information through clear and accurate CAD drawings and presentations.

MDK10703 KAWALAN KUALITI [QUALITY CONTROL]

No of Credits: 3

Course Synopsis:
This course introduces the fundamental principles of quality control relevant to mechanical engineering applications. It explores industry-standard processes and practices commonly adopted to ensure product and process quality. Additionally, the course examines statistical methods and acceptance sampling techniques, which serve as essential tools in effective quality control management.

Course Outcomes:
1. Ability to apply principles of quality assurance, quality control, and management improvement, and to evaluate suitable sampling and testing methods for effective quality assurance and control.
2. Ability to formulate the processes in quality assurance and quality control with statistical method.
3. Ability to design experiments using Design of Experiments (DOE) methodologies to optimise processes and enhance product quality.

MDK10803 ASAS ELEKTRIK DAN ELEKTRONIK [BASIC ELECTRICAL AND ELECTRONICS]

No of Credits: 3

Course Synopsis:
This course provides students with fundamental knowledge in solving AC electrical circuits and introduces the basic principles of electrical machines. It also covers key concepts in electronics, including semiconductor devices such as diodes and transistors, along with an introduction to digital systems. Emphasis is placed on understanding, analysing, and applying core electrical and electronics principles relevant to engineering practice. By the end of the course, students will be able to demonstrate a solid foundation in electrical and electronic concepts for further study and practical application in the field.

Course Outcomes:
1. Ability to demonstrate fundamental knowledge of basic electric and electronic circuits and their components
2. Ability to analyze AC circuits
3. Ability to operate basic electrical and electronics equipments

MDK20103 KEKUATAN BAHAN [STRENGTH OF MATERIALS]

No of Credits: 3

Course Synopsis:
This course provides students with a clear understanding of the theory and application of the principles of mechanics of materials. It covers essential concepts such as statics, deformation, stress, and strain that occur in solid bodies subjected to external loads. Students will learn to analyse and solve problems involving axial, torsional, and bending loads. The course also explores the state of stress resulting from combined loading conditions. In addition, topics on structural stability, types of supports, and column design are discussed towards the end of the course.

Course Outcomes:
1. Ability to apply the basic principles of deformation, stress, and strain in load-bearing structures.
2. Ability to analyse strengh of materials engineering problems.
3. Ability to analyse the experimental findings related to strength of materials principle.

MDK20203 REKA BENTUK BERBANTU KOMPUTER II [COMPUTER AIDED DESIGN II]

No of Credits: 3

Course Synopsis:
This course focuses on giving exposure and skills to students about the advance of 3D geometry modelling and its application in the design and engineering field by using 3D modelling software. This course includes details on basic surface modelling, advanced surface modelling, rendering and animation. All this skill will help students to produce external and internal surfacing with complex shapes for virtual prototypes or models which suit manufacturing processes. This skill is very demanding in industry.

Course Outcomes:
1. Ability to identify the principles and tools to develop surface modelling in computer aided design
2. Ability to construct surface modelling data by using tools effectively in computer aided design
3. Ability to organize complete CAD data output formally along with rendering work

MDK20303 TERMODINAMIK [THERMODYNAMICS]

No of Credits: 3

Course Synopsis:
This course covers the fundamental concepts of thermodynamic laws, including the properties of substances, energy principles, and the first and second laws of thermodynamics, which are applicable in various engineering applications. Topics include the study of substance properties such as saturated liquid, saturated vapour, and superheated vapour. Students will also explore energy analysis of both closed and open systems, and understand the concepts of work and heat transfer. The course introduces the concept of entropy and its significance in analysing the performance and limitations of thermodynamic systems such as heat engines and refrigeration cycles.

Course Outcomes:
1. Ability to analyse the properties of pure substances and the first law of thermodynamics.
2. Ability to analyse the second law of thermodynamics and entropy changes of the substances.
3. Ability to analyse thermodynamics principles through experiments

MDK20403 PENGUJIAN BAHAN [MATERIAL TESTING]

No of Credits: 3

Course Synopsis:
This course is designed to expose students to both the theoretical and practical aspects of material testing through destructive and non-destructive methods. Students will conduct tests such as compression, tension, and bending, as well as non-destructive techniques including ultrasonic testing, magnetic particle testing, and liquid penetrant testing. In addition, the course introduces key mechanical properties of materials such as hardness, brittleness, and ductility. Through hands-on laboratory sessions and analysis, students will gain a deeper understanding of material behaviour and the importance of testing in ensuring engineering reliability and safety.

Course Outcomes:
1. Ability to analyse the importance of material testing, identify various testing methods, and explain basic material imperfections and impurities in solids.
2. Abillity to analyse the destructive and non-destructive materials tests.
3. Ability to analyse material testing results to evaluate material properties, detect imperfections, and determine suitability for engineering applications.

MDK20503 PENGATURCARAAN KOMPUTER [COMPUTER PROGRAMMING]

No of Credits: 3

Course Synopsis:
This course introduces basic programming using high level language (C language). The main objective of this course is to prepare the students with the ability of problem solving with programming tools such as organization chart, IPO chart, flowchart and pseudo code and then implement them by developing C program

Course Outcomes:
1. Ability to construct simple and straightforward manner in C Programs
2. Ability to create and construct C programs with variables, to perform mathematics functions and to configure with desired input/ output
3. Ability to create and design C Programs with control structure, looping functions and numeric arrays

MDK20603 PENGURUSAN PROJEK [PROJECT MANAGEMENT]

No of Credits: 3

Course Synopsis:
This course aims to equip students with the ability to apply project management skills and economic evaluation techniques in the context of engineering design. It emphasises the role of engineering economics in assessing the feasibility of projects, estimating their value, and providing justification from an engineering technology perspective. By the end of the course, students will be able to identify and discuss the issues and challenges faced by engineering practitioner in managing projects within current economic conditions.

Course Outcomes:
1. Ability to design a basic project management plan that incorporates scope, schedule, cost, and resource considerations based on project requirements.
2. Ability to recognise and apply ethical considerations and professional responsibilities in project planning and decision-making.
3. Ability to demonstrate teamwork in planing, executing, and presenting engineering project proposals within given constraints and timelines.
4. Ability to communicate project plans, progress, and economic justifications clearly through written reports and oral presentations.
5. Ability to apply project management tools and basic financial analysis to evaluate project feasibility and manage resources effectively.
6. Ability to demonstrate self-management, adaptability, and entrepreneurial thinking in identifying and proposing engineering project opportunities.

MDK20703 INSTRUMENTASI DAN KAWALAN [INSTRUMENTATION AND CONTROL]

No of Credits: 3

Course Synopsis:
This course introduces students to fundamental knowledge about instrumentation and control system technology. Students will be exposed to basic instrumentation and measurement concepts including the general measurement system, transducers, working principle of various sensors and signal conditioning. Students will also be exposed to the basic knowledge of control system technology, including control system models, transfer functions, system response and process controllers.

Course Outcomes:
1. Ability to analyse concepts of instrumentation system including sensors, transducers and signal processing.
2. Ability to analyse basic concepts of control system technology.
3. Ability to demonstrate instrumentation and control principles through experiments, modelling or simulations.

MDK20803 MEKANIK BENDALIR [FLUID MECHANICS]

No of Credits: 3

Course Synopsis:
This course introduces the basic concepts of fluid mechanics, with emphasis on the properties of fluids, pressure and fluid statics, as well as the application of mass, Bernoulli, and energy equations. It also covers momentum analysis of flow systems and examines both internal flows and external flows. Students will learn to apply fundamental fluid mechanics principles to analyse and solve practical engineering problems related to fluid behaviour in various systems and components.

Course Outcomes:
1. Ability to analyse the properties of fluids, fluid static and fluid flow principle.
2. Ability to analyse internal and external flows.
3. Ability to analyse fluid mechanics principles through experiments, modelling or simulations.

MDK20903 TEKNOLOGI CNC [CNC TECHNOLOGY]

No of Credits: 3

Course Synopsis:
This course covers the principles and concepts of Computer Numerical Control (CNC) as applied in modern manufacturing environments. Students will develop a solid understanding of CNC machine set-up, operation, tooling, and programming fundamentals. Emphasis is placed on the use of G and M code programming to write part programs, focusing on standardised codes that are common across various CNC machines and controllers. In addition, students will be introduced to the basics of Programmable Logic Controllers (PLC), providing a broader perspective on automation in manufacturing systems.

Course Outcomes:
1. Ability to perform basic NC machining operation such as workpiece zero setting and tool setting.
2. Ability to construct G and M code programs and documentation for machining operation on CNC machine tools.
3. Ability to demonstrate abilty to use CNC milling and turning machine.

MDK30104 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course provides students with the opportunity to apply the knowledge and skills acquired throughout the programme to an individual engineering project. Under the guidance of a supervisor, each student is required to independently plan, execute, and present a project related to mechanical engineering technology. The course emphasises problem-solving, technical analysis, investigation, design, and fabrication. It also supports personal development through self-directed learning, critical thinking, and effective time management—laying the foundation for lifelong learning. In addition, students will cultivate entrepreneurial skills such as innovation, creativity, and professional communication, equipping them for future career challenges or business ventures. By the end of the course, students are expected to submit a comprehensive technical report and deliver a presentation of their project outcomes.

Course Outcomes:
1. Ability to apply knowledge of mathematics, science, and engineering fundamentals to solve problems related to the project. – PO1
2. Ability to analyse engineering problems related to the project and develop effective and practical solutions.
3. Ability to conduct investigations using appropriate methods to obtain data and information relevant to the project.
4. Ability to design engineering solutions by utilising appropriate engineering practices and techniques.
5. Ability to manage project activities effectively to achieve defined objectives.
6. Ability to communicate project findings effectively through written reports and oral presentations.
7. Ability to construct a functional prototype.
8. Ability to engage in independent learning to acquire new knowledge and skills relevant to the project.
9. Ability to analyse potential commercialization of the project.

MDK30203 PEMINDAHAN HABA [HEAT TRANSFER]

No of Credits: 3

Course Synopsis:
This course introduces the fundamental principles of heat transfer, focusing on the three primary modes: conduction, convection, and radiation. The course also covers the application of heat transfer principles in engineering systems such as heat exchangers, cooling and heating systems, and thermal insulation. Emphasis is placed on problem-solving skills and real-world applications relevant to mechanical engineering technology. By the end of the course, students will be able to analyse and evaluate heat transfer processes in various engineering contexts.

Course Outcomes:
1. Ability to apply fundamental knowledge of heat transfer mechanisms.
2. Ability to evaluate thermal engineering problems in conduction, convection, radiation and heat exchanger systems.
3. Ability to analyse heat transfer principles through experiments, modelling or simulations.

MDK30303 KEJURUTERAAN BERBANTU KOMPUTER [COMPUTER AIDED ENGINEERING]

No of Credits: 3

Course Synopsis:
This course provides students with a fundamental understanding of structural analysis using Finite Element Analysis (FEA). It offers a solid foundation for the intelligent and effective use of commercial FEA software. The course begins with an introduction to FEA, matrix algebra, and the solution of linear equations. It then progresses to the analysis of one-, two-, and three-dimensional problems, both from a theoretical perspective and through practical applications using FEA software. By the end of the course, students are expected to be able to analyse and solve real-world engineering problems related to structural domains using computer-aided engineering tools.

Course Outcomes:
1. Ability to analyse engineering problems using basic concept and knowledge in finite element analysis.
2. Ability to design appropriate solutions for structural engineering problems using FEA.
3. Ability to use commercial FEA software to model, simulate, and interpret structural engineering problems effectively.

MDK30403 ERGONOMIK INDUSTRI [INDUSTRIAL ERGONOMICS]

No of Credits: 3

Course Synopsis:
This course introduces students to the principles of industrial ergonomics, focusing on human capabilities, body mechanics, and workplace design in industrial settings. It emphasises the application of ergonomics assessment tools to identify and address issues related to worker performance, health, safety, and productivity. Key topics include ergonomics in industrial design, biomechanics, task and workplace evaluation, user-centred design, occupational safety and health, equipment and tool design, and considerations for diverse worker populations. Delivered through lectures, lab sessions, and problem-based learning, the course prepares students to apply ergonomic principles, analyse workplace issues, and propose effective solutions to improve overall industrial work environments.

Course Outcomes:
1. Ability to demonstrate knowledge of fundamental principles of ergonomics, human capabilities, and body mechanics in industrial settings.
2. Ability to propose effective ergonomics-based design solutions to enhance product intervention, usability, and user well-being in industrial applications.
3. Ability to demonstrate considerations of the impacts of ergonomic design solutions on sustainable development, including societal, economic, health, safety, legal, and environmental aspects.
4. Ability to work effectively as a team member in solving ergonomics-related engineering problems.
5. Ability to communicate ergonomics findings, analysis, and design solutions clearly and effectively in both written and oral forms.

MDK30503 ETIKA DAN KESELAMATAN [ETHICS AND SAFETY]

No of Credits: 3

Course Synopsis:
This course provides engineering practitioners to the fundamental principles of professional ethics and workplace safety, with a focus on legal and regulatory frameworks such as the Occupational Safety and Health Act (OSHA). Students will explore the roles and responsibilities of engineering practitioners in upholding ethical standards and ensuring safe working environments. The course covers ethical theories, codes of conduct, ethical decision-making, and the societal impact of engineering practices. It also includes key topics in occupational safety, such as hazard identification, risk assessment, accident prevention, and compliance with OSHA regulations. Through case studies and practical applications, students will develop the ability to recognise ethical and safety issues, make responsible decisions, and contribute to a safe and ethical engineering culture.

Course Outcomes:
1. Ability to discuss the impact of engineering practices on society, the economy, sustainability, health and safety, legal frameworks, and the environment.
2. Ability to integrate ethical principles and professional codes of conduct in addressing issues related to engineering practice.
3. Ability to work effectively in a team to analyse and discuss ethical and safety issues in engineering contexts.
4. Ability to communicate ethical and safety-related information clearly and effectively in both written and oral forms.

MDK30608 LATIHAN INDUSTRI [INDUSTRIAL TRAINING]

No of Credits: 8

Course Synopsis:
This course provides students with real-world industrial exposure by placing them in relevant engineering environments. Through industrial training, students will have the opportunity to observe, experience, and participate in actual engineering practices, operations, and problem-solving processes. The course aims to enhance students' technical skills, work discipline, communication abilities, and understanding of workplace safety, ethics, and professional conduct. It also helps develop personal and interpersonal skills, including teamwork, responsibility, and adaptability. By the end of the training, students are expected to reflect on their learning, demonstrate improved practical competence, and better understand the expectations of the engineering industry.

Course Outcomes:
1. Ability to use appropriate tools, equipment, and technology relevant to the industrial workplace effectively and safely.
2. Ability to practise safety, health, legal, and cultural awareness in a professional working environment.
3. Ability to demonstrate ethical behaviour and professional responsibility in accordance with industry norms and practices.
4. Ability to work effectively as a member of a team and contribute to shared tasks and goals in a workplace setting.
5. Ability to communicate effectively with supervisors, colleagues, and others through appropriate oral, written, and digital means.
6. Ability to manage tasks and responsibilities assigned during the industrial training in a timely and organised manner.
7. Ability to seek and acquire new knowledge and skills independently in response to industrial challenges and opportunities.
8. Ability to adapt to the professional working environment by demonstrating flexibility, resilience, and a willingness to improve for future career development.

FACULTY OF CHEMICAL ENGINEERING & TECHNOLOGY (FKTK)

Programmes Offered:

1. Bachelor of Materials Engineering with Honours
2. Bachelor of Chemical Engineering with Honours
3. Bachelor of Polymer Engineering with Honours
4. Bachelor of Chemical Engineering Technology (Food Technology) with Honours
5. Bachelor of Chemical Engineering Technology (Industrial Chemical Process) with Honours
6. Bachelor of Chemical Engineering Technology (Industrial Biotechnology) with Honours
7. Bachelor of Applied Science (Materials and Metallurgical Technology) with Honours
8. Diploma in Materials Engineering

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UR4521002
Diploma in Materials Engineering

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who are competence in materials engineering field as demonstrated through career progression..

PEO 2
Graduates who are involved in community or professional organization and make contribution towards society.

PEO 3
Graduates who pursue continuing education opportunities

PEO 4
Graduates who make contribution through innovation and entrepreneurship

PROGRAMME OUTCOMES (PO)

PO1
Knowledge: Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices.

PO2
Problem analysis: Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity

PO3
Design/development of solutions: Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required.

PO4
Investigation: Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.

PO5
Tool Usage: Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.

PO6
The Engineering Technician and the World: Consider sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.

PO7
Ethics: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.

PO8
Individual and Collaborative Team Work: Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings.

PO9
Communications: Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions

PO10
Project Management and Finance: Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments

PO11
Life-Long Learning: Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.

PO12
Personal and Entrepreneurial Skills: Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities.

CURRICULUM STRUCTURE
UR4521002 DIPLOMA IN MATERIALS ENGINEERING INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (73 CREDITS)	KDJ10103 Engineering Science [Sains Kejuruteraan]	KDJ10603 Ferrous and Non- Ferrous Metals [Logam Ferus dan Bukan Ferus]	KDJ20103 Metal Extractive Technology [Teknologi Pengekstrakan Logam]	KDJ20603 Strength of Materials [Kekuatan Bahan]	KDJ30303 Metal Protections [Perlindungan Logam]	KDJ39908 Industrial Training [Latihan Industri]
	KDJ10203 Introduction to Engineering Materials [Pengenalan Kepada Bahan Kejuruteraan]	KDJ10703 Basic Static and Dynamic [Asas Statik dan Dinamik]	KDJ20203 Technology of Metal Welding [Teknologi Kimpalan Logam]	KDJ21103 Ceramic Properties and Processing [Sifat Dan Pemprosesan Seramik]	KDJ30403 Occupational Safety and Quality Management [Keselamatan Pekerjaan dan Pengurusan Kualiti]	
	KDJ10403 Engineering Drawing and Computer Aided Drafting [Lukisan Kejuruteraan dan Lukisan Terbantu Komputer]	KDJ10903 Thermodynamics [Termodinamik]	KDJ20303 Basic Electrical Technology [Asas Teknologi Elektrik]	KDJ21203 Materials Testing [Pengujian Bahan]	KDJ30604 Final Year Project [Projek Tahun Akhir]	
	KDJ10503 Basic Computer Programming [Asas Pengaturcaraan Komputer]		KDJ30703 Polymer Properties and Processing [Sifat dan Pemprosesan Polimer]	KDJ21402 Sustainable Materials [Bahan Mampan]	KDJ30803 Fluid Mechanics [Mekanik Bendalir]	
	KDJ11003 Workshop Practice [Amalan Bengkel]			KDJ21503 Metals Processing [Pemprosesan Logam]	KDJ30902 Advanced Materials [Bahan Termaju]	
COMMON CORE COURSES (9 CREDITS)		QDQ10103 Mathematics I [Matematik I]	QDQ20203 Mathematics II [Matematik II]	QDQ20303 Mathematics III [Matematik III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDZXXX01 Co-Curriculum 1 [Ko-Kurikulum 1]	SDB11202 Communicative English 2 [Bahasa Inggeris Komunikasi 2]	SDB11302 Communicative English 3 [Bahasa Inggeris Komunikasi 3]		SDU22502 Basic Entrepreneurship [Asas Keusahawanan]	
		SDZXXX01 Co-Curriculum 2 [Ko-Kurikulum 2]	SDU12902 Philosophy And Current Issues [Falsafah dan Isu Semasa]			
		SDU12002 Integrity and Anti-Corruption [Integriti dan Anti Rasuah]				
TOTAL CREDITS (94 CREDITS)	**16**	**17**	**19**	**17**	**17**	**8**
AUDIT COURSES	QDQ10002[1] Preliminary Mathematics [Matematik Awalan]			SDB31002 [2] Malay Language [Bahasa Melayu]		
	SDB11102 [3] Communicative English 1 [Bahasa Inggeris Komunikasi 1]					

[1] Compulsory for students with grade D and without Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 - Preliminary Mathematics is an Audit course.
[2] Compulsory for students with grades B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course.
[3] Compulsory for students with grades B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course.

LIST OF COURSES:

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
KDJ10103	Sains Kejuruteraan [Engineering Science]	SDG 4
KDJ10203	Pengenalan kepada Bahan Kejuruteraan [Introduction to Engineering Materials]	SDG 4
KDJ10403	Lukisan Kejuruteraan dan Lukisan Terbantu Komputer [Engineering Drawing and Computer Aided Drafting]	SDG 4
KDJ10503	Asas Pengaturcaraan Komputer [Basic Computer Programming]	SDG 9
KDJ10603	Logam Ferus dan Bukan Ferus [Ferrous and Non-Ferrous Metals]	SDG 9
KDJ10703	Asas Statik dan Dinamik [Basic Static and Dynamic]	SDG 9
KDJ10903	Termodinamik [Thermodynamics]	SDG 4, SDG7, SDG12
KDJ11003	Amalan Bengkel [Workshop Practice]	SDG 4
KDJ20103	Teknologi Pengekstrakan Logam [Metal Extractive Technology]	SDG 12
KDJ20203	Teknologi Kimpalan Logam [Technology of Metal Welding]	SDG 9
KDJ20303	Asas Teknologi Elektrik [Basic Electrical Technology]	SDG 9
KDJ20603	Kekuatan Bahan [Strength of Materials]	SDG 9
KDJ21103	Sifat dan Pemprosesan Seramik [Ceramic Properties and Processing]	SDG 15
KDJ21203	Pengujian Bahan [Materials Testing]	SDG 9, SDG12
KDJ21402	Bahan Lestari [Sustainable Materials]	SDG 12
KDJ21503	Pemprosesan Logam [Metal Processing]	SDG 12
KDJ30303	Perlindungan Logam [Metal Protections]	SDG 9, SDG12
KDJ30403	Keselamatan Pekerjaan dan Pengurusan Kualiti [Occupational Safety and Quality Management]	SDG 8

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
KDJ30604	Projek Tahun Akhir [Final Year Project]	SDG 12
KDJ30703	Sifat dan Pemprosesan Polimer [Polymer Properties and Processing]	SDG 12
KDJ30803	Mekanik Bendalir [Fluid Mechanics]	SDG 9
KDJ30902	Bahan Termaju [Advanced Materials]	SDG 12
KDJ39908	Latihan Industri [Industrial Training]	SDG 4, SDG8, SDG9, SDG17

KDJ10103 SAINS KEJURUTERAAN [ENGINEERING SCIENCE]

No of Credits: 3

Course Synopsis:
This course is to familiarize the student about basic engineering that involve physics and chemistry of materials. Students could understand the theories, principles and standard units that have been focused in the syllabus. Students are exposed to force and motion. Students are also introduced to the basics of electrostatic, electromagnetism and simple DC circuit.

Course Outcome (CO)
1. Ability to apply theory of physic, chemistry and basic electrical in various materials.
2. Ability to solve problems related to chemistry, physics and basic electrical principle.
3. Ability to contribute effectively as an individual and team in engineering science through group assignment.

KDJ10203 PENGENALAN KEPADA BAHAN KEJURUTERAAN [INTRODUCTION TO ENGINEERING MATERIALS]

No of Credits: 3

Course Synopsis:
To introduce basic concepts in the field of engineering materials: Introduction to engineering materials such as metal, ceramic, polymer, and composite. Students will be exposed to the structure, properties and application of each material group.

Course Outcome (CO)
1. Ability to describe classes, properties and applications of basic and advanced materials in engineering materials.
2. Ability to solve problems related to crystal structures and its applications in materials engineering.
3. Ability to identify solutions for well-defined technical problem in materials selection and application

KDJ10403 LUKISAN KEJURUTERAAN DAN LUKISAN TERBANTU KOMPUTER [ENGINEERING DRAWING AND COMPUTER AIDED DRAFTING]

No of Credits: 3

Course Synopsis:
The course will cover the details of Engineering Drawing for beginners before going in depth on projection systems followed by oblique and isometric sketches. Knowledge in dimensioning and geometrical tolerance will enhance student's ability in interpreting and assessing information from basic raw data of an engineering drawing. Students will also have the advantage to experience practical engineering drawing projects for familiarity from conceptual exposures and classroom theories taught by the experienced lecturers and teaching engineers. Then, from manual hand drawing, students are taught into the usage of AutoCAD software, which focus on producing drawing in 2D and 3D.

Course Outcome (CO)
1. Ability to apply the basic skills and knowledge of engineering drawing.
2. Ability to analyze various technical problems related to orthographic and isometric views in engineering drawing.
3. Ability to apply the AutoCAD programming in engineering drawing.

KDJ10503 ASAS PENGATURCARAAN KOMPUTER [BASIC COMPUTER PROGRAMMING]

No of Credits: 3

Course Synopsis:
In this course, students will be introduced to the computer system, and then will learn problem solving analysis and programming concept including variables, operator, control structure, repetition structure, function, array, structure and pointer. Students will also learn how to write programming using C language and solve engineering related problem using computer programming technique.

Course Outcome (CO)
1. Ability to apply concept and principle in computer programming.
2. Ability to analyze programming problems in developing structured solution for technical applications.
3. Ability to use appropriate tools for coding, compiling, executing, and debugging computer programming.

KDJ10603 LOGAM FERUS DAN BUKAN FERUS [FERROUS AND NON-FERROUS METALS]

No of Credits: 3

Course Synopsis:
In this subject, students will learn about the fundamental and types of ferrous and non-ferrous metals. Students will also study the classification of ferrous and non-ferrous metals, identification techniques as well as their properties. Students will be exposed to the basic of phase diagram such as iron-carbon system which characterise the steel and iron properties, as well as the binary phase diagram for non-ferrous metals. A metallographic analysis technique is introduced to enhance the subject understanding and students will be able to experience the laboratory activities to obtain a microstructure and compare with the properties involved. At the end of the subject, students will learn the metal fabrication processes.

Course Outcome (CO)
1. Ability to describe ferrous and non ferrous metals, their properties and applications.
2. Ability to conduct experiment and analyze the result obtained associated with ferrous and non ferrous metals.

KDJ10703 ASAS STATIK DAN DINAMIK [BASIC STATIC AND DYNAMIC]

No of Credits: 3

Course Synopsis:
This course is to expose students to basic knowledge of statics and dynamics. In statics, the students will be exposed to basic concepts of engineering mechanics such as forces, moments and friction. They will apply this basic knowledge to analyse the equilibrium of particle, rigid bodies and stability of a structure. In dynamics, students will be exposed to kinematics of a particle, which treats only the geometric aspects of the motion. In kinetics for particles, problems will be solved using acceleration method, principle of work and energy, and principle of impulse and momentum.

Course Outcome (CO)
1. Ability to analyze basic problems of forces and moments in two- and three dimension, resultant of force from a system of force, and equilibrium of a particle and rigid body.
2. Ability to analyze basic problems of kinematics and kinetics of a particle.
3. Ability to conduct the experiments and analyze the results obtained associated with static and dynamic.

KDJ10903 TERMODINAMIK [THERMODYNAMICS]

No of Credits: 3

Course Synopsis:
Thermodynamics is the study of the interrelation of heat and work with chemical reactions or with physical changes of state within the confines of the laws of thermodynamics. Thermodynamics involves not only laboratory measurements of various thermodynamic properties, but also the application of mathematical methods to the study of chemical questions and the spontaneity of processes.

Course Outcome (CO)
1. Ability to explain knowledge and fundamentals of the first and second laws of thermodynamics.
2. Ability to analyze equations in solving chemical equilibrium and kinetic problems
3. Ability to apply the correct techniques in handling laboratory apparatus in chemical experiments
4. Ability to analyse the results from the conducted experiments.

KDJ11003 AMALAN BENGKEL [WORKSHOP PRACTICE]

No of Credits: 3

Course Synopsis:
This subject is 100% practical coursework and carried out 3 units credit hours. This course contains basic practical works for students which are Mechanical Workshop Practice and Domestic Electrical Wiring.

Course Outcome (CO)
1. Ability to perform standard mechanical operations and domestic electrical wiring technique using appropriate tools and equipment.
2. Ability to value teamwork through effective communication and clear instruction in laboratory and workshop activities.

KDJ20103 TEKNOLOGI PENGEKSTRAKAN LOGAM [METAL EXTRACTIVE TECHNOLOGY]

No of Credits: 3

Course Synopsis:
This course is proposed to provide students with fundamentals of metal extraction from ores using pyrometallurgy process, hydrometallurgy process and electrometallurgy process. Knowledge on theory acquired in lecture is also enhanced with a practical work conducted in laboratory.

Course Outcome (CO)
1. Ability to analyse the principles of mineral processing, hydrometallurgy, electrometallurgy and pyrometallurgy in the process of extractive metallurgy.
2. Ability to investigate the metallurgical process in extractive metallurgy through experiment.
3. Ability to propose metal processing method in extractive metallurgy based on fundamental principle.

KDJ20203 TEKNOLOGI KIMPALAN LOGAM [TECHNOLOGY OF METAL WELDING]

No of Credits: 3

Course Synopsis:
The course covers the basic theories and practical knowledge of shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW). The students are also introduced to the general welding considerations of carbon and alloy steels, tool steels and cast irons, stainless steels, and nonferrous metals.

Course Outcome (CO)
1. Ability to correlate the concepts, functions of equipments and applications of welding involved in welding process.
2. Ability to comply with safety and ethic practices in welding process.
3. Ability to perform arc welding techniques using tools and equipments based on welding procedure.

KDJ20303 ASAS TEKNOLOGI ELEKTRIK [BASIC ELECTRICAL TECHNOLOGY]

No of Credits: 3

Course Synopsis:
The course will cover the details of the DC/AC circuits and three phase system which covers star-delta connection, delta-star connections and three phase power measurement. Students also will gain more knowledge on single-phase transformer and electrical generator which related to single phase AC/DC generator. In addition, students will be introduced on industrial application motors and special application motor which include DC Motor, Single Phase Induction Motor, Stepper Motor and DC/AC Servo Motor.

Course Outcome (CO)
1. Ability to explain fundamental knowledge of physic, electric and engineering principles to DC and AC circuits.
2. Ability to analyze engineering problems based on properties of magnetic materials and DC & AC machines.
3. Ability to analyze experimental results related to electrical principles.

KDJ20603 KEKUATAN BAHAN [STRENGTH OF MATERIALS]

No of Credits: 3

Course Synopsis:
The main objective of this course is to expose the student on basic concept of strength of materials which dealing with relationships between the external loads applied to an elastic body and the intensity forces acting within the body, axial load, mechanical properties of materials, torsion, shear forces and bending moments in beams and combined stresses.

Course Outcome (CO)
1. Ability to apply knowledge of the stress, strain, and mechanical properties of materials under different types of loading.
2. Ability to evaluate and solve problems related to stress, strain, and mechanical properties of materials under different types of loading.
3. Ability to conduct and analyse the mechanical properties of materials.

KDJ21103 SIFAT DAN PEMPROSESAN SERAMIK [CERAMIC PROPERTIES AND PROCESSING]

No of Credits: 3

Course Synopsis:
This topic explores the properties and processing of ceramics, focusing on their mechanical, thermal, electrical, optical, and chemical characteristics. Students learn about crystal structure, phase transformations, and the influence of composition and microstructure on properties. They also study various processing techniques like powder mixing, shaping, firing and glazing, as well as the characterization methods.

Course Outcome (CO)
1. Ability to describe the basic properties of ceramics and explain their common applications.
2. Ability to apply various ceramic processing techniques such as mixing, shaping, and firing to create ceramic products.
3. Ability to apply characterization methods to evaluate ceramic materials.

KDJ21203 PENGUJIAN BAHAN [MATERIALS TESTING]

No of Credits: 3

Course Synopsis:
This course introduces the students to the theory and practical aspects of conducting destructive and non-destructive tests on different types of materials.

Course Outcome (CO)
1. Ability to assess destructive methods for materials testing.
2. Ability to assess non-destructive methods for materials testing.
3. Ability to describe test procedures, prepare specimens, perform data acquisition, process data, and compare results with relevant theory.

KDJ21402 BAHAN LESTARI [SUSTAINABLE MATERIALS]

No of Credits: 2

Course Synopsis:
Provides students with a comprehensive understanding of sustainability in materials engineering (in environmental responsibility). Topics covered include fundamental environmental science principles, material selection and design for sustainability, green manufacturing processes, life cycle assessment, renewable resources, waste management, and environmental regulations. Through theoretical learning, practical exercises, and case studies, students develop the knowledge and skills to evaluate materials based on environmental criteria, optimize manufacturing processes for sustainability, and comply with environmental regulations. Additionally, the program integrates Industry 4.0 concepts and technologies, such as smart manufacturing, to enhance sustainability practices and environmental performance in material production.

Course Outcome (CO)
1. Ability to apply the principles of sustainability in materials science and engineering.
2. Ability to analyse the mechanical, thermal and chemical properties of sustainable materials for engineering application.
3. Ability to identify the environmental and societal impact of various materials used in engineering application.

KDJ21503 PEMPROSESAN LOGAM [METAL PROCESSING]

No of Credits: 3

Course Synopsis:
This course aims to equip students with advanced competencies in metal forming and machining techniques, practical ability in modern casting, joining, and surface treatments, a comprehensive understanding of the diverse applications and implications of various metal processing methodologies, and the analytical skills necessary to evaluate and enhance metal processing techniques within engineering frameworks.

Course Outcome (CO)
1. Ability to apply appropriate metal forming techniques to produce components from different metals.
2. Ability to analyze the outcomes of different metal processing methods to identify defects and propose modifications or optimizations for improving the efficiency and quality of the processes.
3. Ability to evaluate the implications of selected metal processing techniques on product quality and manufacturing efficiency, considering material properties, processing parameters, and production costs.

KDJ30303 PERLINDUNGAN LOGAM [METAL PROTECTIONS]

No of Credits: 3

Course Synopsis:
This course is to expose students to the theory of metals corrosion in different environments, its damage to the community and its possible preventions and countermeasures. The topics covered in this course are as follows; the principles of corrosion, types of corrosion, surface technology, tribology, surface coatings and metals protection methods.

Course Outcome (CO)
1. Ability to evaluate metal degradation based on fundamental of corrosion and tribology.
2. Ability to analyze the corrosion behavior based on electrochemical methods.
3. Ability to respond effectively in presenting concepts and ideas based on metal protection.

KDJ30403 KESELAMATAN PEKERJAAN DAN PENGURUSAN KUALITI [OCCUPATIONAL SAFETY AND QUALITY MANAGEMENT]

No of Credits: 3

Course Synopsis:
This course is intended to provide an introductory knowledge in occupational safety and quality management. It provides basic information and common theories for prospective safety and quality personnel to oversee a program that encompasses both areas of responsibility. At the end of this course, students are expected to be able to identify suitable quality techniques and tools to be implemented in production management and can apply Industrial Safety standards and professional ethics in a real industrial environment.

Course Outcome (CO)
1. Ability to apply fundamental principles, techniques and tools to address quality issues based on Occupational Safety and Health standards.
2. Ability to apply fundamental principles, techniques and tools to address quality issues based on Quality Control and Management standards.
3. Ability to respond to technician practice issues by prioritizing professional ethics and norms.
4. Ability to evaluate HIRARC analysis, techniques, and tools to resolve safety issues through continuous learning in compliance with Occupational Safety and Health standards.

KDJ30604 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course is a small-scale research project for final year students and expected to be completed within the same semester. The projects are based on solving the engineering problem by understand the problems, troubleshooting, identify, solves and finally report writing for the documentation purposes.

Course Outcome (CO)
1. Ability to analyse an engineering problem and propose solutions based on research literatures.
2. Ability to propose project solution by utilizing standard engineering techniques and processes.
3. Ability to apply theories, principles, and specifications of processes and tests in an engineering methodology.
4. :Ability to use modern engineering tools or software to solve well-defined engineering problems.
5. Ability to apply ethical principles in writing project report.
6. Ability to function effectively as an individual, and as a supervised team member.
7. Ability to communicate effectively in delivering concepts and ideas with engineering community.
8. Ability to demonstrate commitment to project management principles and the economic quality of the project.
9. Ability to engage in life-long learning in the broad context of technological change.
10. Ability to engage in self-improvement and entrepreneurial activities.

KDJ30703 SIFAT DAN PEMPROSESAN POLIMER [POLYMER PROPERTIES AND PROCESSING]

No of Credits: 3

Course Synopsis:
This course covers essential topics related to polymers in a straightforward manner. Students will learn about the relationship between the structure of polymers and their properties. They will also explore the mechanical and thermal properties of polymers and understand how these properties affect their use. The course will introduce different techniques for processing polymers, explaining their advantages and limitations, as well as how processing parameters impact the final product's properties. Students will also gain insights into the flow behaviour of polymers and the role of additives and fillers in polymer processing. The course emphasizes the importance of testing and characterizing polymers and provides an overview of common testing methods. Finally, students will learn about the process of selecting the right polymer for specific engineering applications. By the end of the course, students will have a practical understanding of polymer properties, processing techniques, and how to choose the appropriate polymers for different purposes.

Course Outcome (CO)
1. Ability to explain the relationship between polymer structure and its properties in different applications.
2. Ability to investigate the properties and behavior of polymeric material for product manufacturing
3. Ability to propose alternative materials and additives in polymer processing by considering safety and environmental aspects.
4. Ability to explain the concept and idea of entrepreneurship in product manufacturing.

KDJ30803 MEKANIK BENDALIR [FLUID MECHANICS]

No of Credits: 3

Course Synopsis:
Fluid mechanics provides students with a strong understanding of the fundamentals of fluid mechanics principles related with fluid properties, fluid classification and force types in fluids. Thus, student will be learning about fluid properties in two different conditions, statis and dynamic condition. Student also will learn momentum principles including basic equations for controlled system and volume, and then basic equations in differential form.

Course Outcome (CO)
1. Ability to assess fluid related problems based on their properties, classification, static, dynamics, kinematic and applications in materials engineering.
2. Ability to analyze the experimental results in fluid mechanics.
3. Ability to communicate effectively in delivering concepts and ideas in fluid mechanics through presentation.

KDJ30902 BAHAN TERMAJU [ADVANCED MATERIALS]

No of Credits: 2

Course Synopsis:
These topics offer diploma-level students a thorough introduction to modern materials science and engineering. By addressing core principles, practical uses, and environmental impacts, students achieve a well-rounded comprehension of how materials science drives technological innovation and supports sustainable development. Each topic is crafted to engage students and build a strong knowledge base, equipping them for advanced studies or careers in materials science.

Course Outcome (CO)
1. Ability to apply fundamental concepts of modern materials science to real-world scenarios.
2. Ability to analyze and interpret the practical applications of various materials in different industries.
3. Ability to evaluate the environmental and sustainability impacts of material use and development.
4. Ability to integrate their knowledge to prepare for advanced studies or careers in materials science with a comprehensive foundational understanding.

KDJ39908 LATIHAN INDUSTRI [INDUSTRIAL TRAINING]

No of Credits: 8

Course Synopsis:
The course will expose students to aspects such as technical, application, company organization structure, company operation, department function, work procedure, safety procedure, management, communication, skills, project management and presentation. The students are also required to submit their log book and final report at the end of the industrial training. Overall, the course is practical-based.

Course Outcome (CO)
1. Ability to apply theoretical knowledge and practical skills using tools and technology in industry application.
2. Ability to practice safety, health, legal and cultural issues in working environment.
3. Ability to respond to professional ethics in technician practices.
4. Ability to work effectively as an individual, and as a team member in diverse technical environment to complete tasks assigned by the host company.
5. Ability to demonstrate communication skills to complete task, write reports and present work effectively.
6. Ability to demonstrate effective management of cost and resource in solving engineering and technical problems during industrial training.
7. Ability to engage in life-long learning in the broad context of technological change.
8. Ability to demonstrate initiative, creativity, and professionalism in handling workplace challenges during industrial training.

FACULTY OF CIVIL ENGINEERING & TECHNOLOGY (FKTA)

Programmes Offered:

1. Bachelor of Civil Engineering with Honours
2. Bachelor of Enviromental Engineering with Honours
3. Bachelor of Civil Engineering Technology (Construction) with Honours
4. Bachelor of Technology in Building Construction with Honours

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FACULTY OF BUSINESS & COMMUNICATION (FPK)

Programmes Offered:

1. Bachelor of New Media Communication with Honours
2. Bachelor of Interactive Media Technology with Honours
3. Bachelor of Business (International Business) with Honours
4. Bachelor of Business (Engineering Entrepreneurship) with Honours
5. Bachelor of Accounting with Honours

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LIST OF COURSES

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
SDU12002	Integrity And Anti-Corruption [Integriti Dan Anti Rasuah]	SDG16
SDU12902	Philosophy And Current Issues [Falsafah Dan Isu Semasa]	SDG4
SDU22502	Basics Entrepreneurship [Asas Keusahawanan]	SDG8
SDB31002	Bahasa Melayu [Malay Language]	SDG4
SDB11102	Bahasa Inggeris Komunikasi 1 [Communicative English 1]	SDG4
SDB11202	Bahasa Inggeris Komunikasi 2 [Communicative English 2]	SDG4
SDB30102	Bahasa Inggeris Komunikasi 3 [Communicative English 3]	SDG4

SDU12002 INTEGRITY AND ANTI-CORRUPTION (INTEGRITI DAN ANTI RASUAH)

No of Credits: 2

Course Synopsis:
This course covers basic concepts on the value of Integrity, forms of corruption and abuse of power in daily life. This does not only happen in society but also involves existing organizations in the country. Therefore, methods to prevent corruption as well as identify real cases of corruption found in this life will be discussed in the learning session.

Course Outcomes:
1. Ability to identify and understand the value concepts of integrity and corruption.
2. Ability to analyze the value of integrity and corrupt behavior in life and organizations.
3. Ability to discuss and evaluate integrity and acts of corruption through any type of media observation/ case study/ community service.

SDU12902 PHILOSOPHY AND CURRENT ISSUES (FALSAFAH DAN ISU SEMASA)

No of Credits: 2

Course Synopsis:
This course focuses on basic ideas and questions in philosophy related to human moral and intellectual life. Discussions are done to give students a way to think more maturely in dealing with a problem and issue. Through reading and discussion, students are guided to understand more clearly about philosophy and its importance in building identity, moral responsibility, human relations and human relationship with nature with the formation of the value system of value Malaysian society.

Course Outcomes:
1. Ability to comprehend current issues based on philosophical knowledge and National Education Philosophy with Rukunnegara.
2. Ability to explain current issues based on the main stream of various philosophical school of thoughts.
3. Ability to discuss current issues through comparison of philosophical perspectives to understand the integration of culture.

SDU22502 BASICS ENTREPRENEURSHIP (ASAS KEUSAHAWANAN)

No of Credits: 2

Course Synopsis:
This comprehensive course aims to equip students with a strong foundation in entrepreneurship. Through engaging lessons and hands-on training, students will not only gain a solid understanding of the core principles but also develop proficiency in utilising essential business tools such as the Business Model Canvas, Value Proposition Canvas, and Ansoff Matrix. The primary objective of this course is to empower students with the necessary knowledge and skills to confidently embark on an entrepreneurial journey, should they choose to pursue this path.

Course Outcomes:
1. Able to clearly define fundamental concepts and knowledge in entrepreneurship.
2. Able to explain key elements related to creativity, innovation, business planning, and essential business tools such as BMC, VPV and Ansoff Matrix.
3. Able to use their knowledge of entrepreneurship to address current issues within the context of globalization.

SDB31002 BAHASA MELAYU [MALAY LANGUAGE]

No of Credits: 2

Course Synopsis:
Kursus ini memberi pengetahuan kepada para pelajar tentang sejarah perkembangan bahasa Melayu dan memberi pendedahan kepada keempat-empat kemahiran berbahasa (mendengar, membaca, menulis dan bertutur) dengan memberi tumpuan kepada kemahiran bertutur dan menulis. Komponen menulis difokuskan kepada ketepatan penggunaan aspek tatabahasa, struktur dan semantik (makna) yang akan memberi peluang kepada pelajar untuk mempelajari proses-proses tatabahasa seperti penggunaan kata, aplikasi aspek kesalahan bahasa yang dikukuhkan dalam pelbagai konteks penulisan dan sintaksis. Aspek kemahiran bertutur akan membantu pelajar untuk berkomunikasi dengan menggunakan sistem bahasa yang berkesan seperti dalam aspek sebutan dan juga pembinaan ayat dalam bahasa Melayu.

Course Outcomes:
1. Kebolehan memahami sejarah dan perkembangan bahasa Melayu.
2. Kebolehan mengaplikasi aspek tatabahasa dan binaan ayat yang betul dan berkesan dalam pelbagai jenis laras penulisan dan lisan.

SDB11102 BAHASA INGGERIS KOMUNIKASI 1 [COMMUNICATIVE ENGLISH 1]

No of Credits: 2

Course Synopsis:
The course uses communicative-based approach to improve the students proficiency level. The course alligns with the Common European Framework of Reference for Languages (CEFR) in exposing the students to a variety of authentic materials. The course engages with receptive and productive skills commonly encountered by students in day-to-day situations, with more emphasis particularly on receptive skills (reading and listening).

Course Outcomes:
1. Ability to demonstrate comprehension of simple informational materials and short simple descriptions from everyday materials.
2. Ability to demonstrate comprehension of simple day-to-day informational audio and speech.
3. Ability to write simple connected texts on familiar topics covering formal and less formal issues.

SDB11202 BAHASA INGGERIS KOMUNIKASI 2 [COMMUNICATIVE ENGLISH 2]

No of Credits: 2

Course Synopsis:
The course aligns with the Common European Framework of Reference for Languages (CEFR) in exposing the students to a variety of authentic materials. It adopts a communicative-based approach to improve the students' proficiency levels. The course engages with receptive and productive skills commonly encountered by students in day-to-day situations and in academic context. Emphasis is given more to productive skills particularly speaking and writing.

Course Outcomes:
1. Ability to write short, detailed descriptions on familiar topics covering formal and less formal issues.
2. Ability to explain and argue on topics covering formal and less formal issues.
3. Ability to demonstrate analytical comprehension skills on information covering familiar topics.

SDB11302 BAHASA INGGERIS KOMUNIKASI 3 [COMMUNICATIVE ENGLISH 3]

No of Credits: 2

Course Synopsis:
This course is aligned with the Common European Framework of Reference for Languages (CEFR) in exposing the students to a variety of authentic materials. It adopts the communicative-based approach to improve students' proficiency level. The course engages with receptive and productive skills commonly encountered by students in day-to-day situations, academic and professional context. Emphasis is given more on productive skills particularly speaking and writing.

Course Outcomes:
1. Ability to analyse straightforward texts covering formal and less formal issues.
2. Ability to argue in a discussion covering formal and less formal issues.
3. Ability to write clear coherent writing on topics covering formal and less formal issues.

FACULTY OF INTELLIGENT COMPUTING (FIC)

Programmes Offered:

1. Bachelor of Computer Engineering with Honours
2. Bachelor in Data Science (Artificial Intelligence) with Honours
3. Diploma in Computer Engineering

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UR4523002
Diploma in Computer Engineering

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO 1
Graduates who have demonstrated career advancement in the field of Computer Engineering or related engineering field

PEO 2
Graduates who have contributed to a professional body or society.

PEO 3
Graduates who have engaged in lifelong learning or pursuing continuing education opportunities

PEO 4
Graduates who have contributed through innovation and entrepreneurship activity.

PROGRAMME OUTCOMES (PO)

PO1
Knowledge: Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation to wide practical procedures and practices

PO2
Problem Analysis: Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.

PO3
Design/Development of Solutions: Design solutions for well-defined technical
problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, as well as cultural, societal, and environmental considerations as required

PO4
Investigation: Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.

PO5
Tool Usage: Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.

PO6
The Engineering Technician and the World: Consider sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.

PO7
Ethics: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.

PO8
Individual and Collaborative Teamwork: Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings.

PO9
Communications: Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.

PO10
Project Management and Finance: Demonstrate awareness of engineering
management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.

PO11
Lifelong Learning: Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.

PO12
Personal and Entrepreneurial Skills: Demonstrate ability to engage effectively in self-improvement initiatives for career, professional or educational goals and engage in entrepreneurial activities

CURRICULUM STRUCTURE
UR4523002 DIPLOMA IN COMPUTER ENGINEERING INTAKE 2025/2026

YEAR	FIRST		SECOND		THIRD	
SEMESTER	**1**	**2**	**3**	**4**	**5**	**6**
DISCIPLINE CORE COURSES (73 CREDITS)	NDJ10102 Fizik Kejuruteraan [Engineering Physics]	NDJ10503 Peranti Elektronik [Electronic Devices]	NDJ20203 Litar Elektronik [Electronic Circuits]	NDJ20903 Sistem Komputer [Computer System]	NDJ30304 Projek Tahun Akhir [Final Year Project]	NDJ30508 Latihan Industri [Industrial Training]
	NDJ10203 Litar Elektrik [Electric Circuits]	NDJ10603 Teknologi Elektrik [Electrical Technology]	NDJ20803 Sistem Pengkalan Data [Database System]	NDJ20703 Sistem Pengoperasian [Operating System]	NDJ30003 Instrumentasi Elektronik [Electronics Instrumentation]	
	NDJ10003 Kemahiran Kejuruteraan Elektronik [Electronic Engineering Skills]	NDJ10703 Pengaturcaraan Berasaskan Objek [Object-Oriented Programming]	NDJ20403 Sistem Mikropengawal [Microcontroller System]	NDJ21003 Perhubungan Data dan Rangkaian [Data Communication and Network]	NDJ30403 Kejuruteraan Perisian [Software Engineering]	
	NDJ10403 Pengaturcaraan Komputer [Computer Programming]	NDJ20103 Sistem Digit II [Digital System II]	NDJ20002 Keselamatan Industri,Pengurusan Kualiti Dan Etika [Quality Management, Industrial Safety and Ethics]	NDJ21503 Prinsip Isyarat dan Sistem [Principles of Signal and System]	NDJ30103 Sistem Kawalan [Control Systems]	
	NDJ10303 Sistem Digit I [Digital System I]				NDJ22603 Kejuruteraan Perhubungan [Communication Engineering]	
COMMON CORE COURSES (9 CREDITS)		QDQ10103 Matematik I [Mathematics I]	QDQ20203 Matematik II [Mathematics II]	QDQ20303 Matematik II [Mathematics III]		
UNIVERSITY REQUIREMENT COURSES (12 CREDITS)	SDZ1XXXX Kokurilum 1 [Co-Curriculum 1]	SDZ1XXXX Kokurikulum 2 [Co-Curriculum 2]	SDB11302 Komunikasi Inggeris 3 [Communicative English 3]	SDU22502 Asas Keusahawanan [Basic Entrepreneurship]	SDU12902 Falsafah dan Isu Semasa [Philosophy And Current Issues]	
		SDB11202 Komunikasi Inggeris 2 [Communicative English 2]	SDU12002 Integriti dan Anti Rasuah [Integrity and Anti-Corruption]			
TOTAL CREDITS (94 CREDITS)	**15**	**18**	**18**	**17**	**18**	**8**
AUDIT COURSES	SDB11102 Komunikasi Inggeris 1 [Communicative English 1]			SDB31002 Bahasa Melayu [Malay Language]		
	QDQ10002 Matematik Awalan [Preliminary Mathematics]					

[1] Compulsory for students with grade D and without Additional Mathematics (Matematik Tambahan) in SPM. QDQ10002 - Preliminary Mathematics is an Audit course.
[2] Compulsory for students with grades B+ and below in Malay Language (Bahasa Melayu) SPM. SDB31002 - Malay Language is an Audit course.
[3] Compulsory for students with grades B+ and below in English Language (Bahasa Inggeris) SPM. SDB11102 - Communicative English 1 is an Audit course.

LIST OF COURSES

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
NDJ10003	Kemahiran Kejuruteraan Elektronik [Electronic Engineering Skills]	Tiada
NDJ10102	Fizik Kejuruteraan [Engineering Physics]	Tiada
NDJ10203	Litar Elektrik [Electric Circuits]	Tiada
NDJ10303	Sistem Digit I [Digital System I]	Tiada
NDJ10403	Pengaturcaraan Komputer [Computer Programming]	Tiada
NDJ10503	Peranti Elektronik [Electronic Devices]	Tiada
NDJ10603	Teknologi Elektrik [Electrical Technology]	Tiada
NDJ10703	Pengaturcaraan Berasaskan Objek [Object Oriented Programming]	Tiada
NDJ20002	Keselamatan Industri,Pengurusan Kualiti Dan Etika [Quality Management, Industrial Safety And Ethics]	SDG 3, 9, 11
NDJ20103	Sistem Digit II [Digital System II]	Tiada
NDJ20203	Litar Elektronik [Electronic Circuits]	Tiada
NDJ20403	Sistem Mikropengawal [Microcontroller System]	Tiada
NDJ20703	Sistem Pengoperasian [Operating System]	Tiada
NDJ20803	Sistem Pangkalan Data [Database System]	Tiada
NDJ20903	Sistem Komputer [Computer System]	Tiada
NDJ21003	Perhubungan Data dan Rangkaian [Data Communication and Network]	Tiada
NDJ21503	Prinsip Isyarat dan Sistem [Principles of Signals and Systems]	Tiada
NDJ22603	Kejuruteraan Perhubungan [Communication Engineering]	Tiada

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
NDJ30003	Instrumentasi Elektronik [Electronic Instrumentation]	Tiada
NDJ30103	Sistem Kawalan [Control Systems]	Tiada
NDJ30304	Projek Tahun Akhir [Final Year Project]	SDG 4, 7, 9
NDJ30403	Kejuruteraan Perisian [Software Engineering]	Tiada
NDJ30508	Latihan Industri [Industrial Training]	SDG 4, 8, 9

NDJ10003 KEMAHIRAN KEJURUTERAAN ELEKTRONIK [ELECTRONIC ENGINEERING SKILLS]

No of Credits: 3

Course Synopsis:
This course is a 100% practical coursework subject carrying 3 credit hours, designed to equip students with fundamental electronic engineering skills through hands-on learning. It comprises four (4) modules: Basic Knowledge of Computers, Basic Electronic Circuits, PCB Layout Design and Fabrication, and Technical Drawing. By completing this course, students will develop essential technical competencies that enhance their understanding and application of electronic concepts in other subjects throughout their studies.

Course Outcomes:
1. Ability to recognize basic components of a computer system and its assembly configurations.
2. Ability to fabricate a PCB, including transferring the design, drilling, etching, and developer stage.
3. Ability to assemble an electronic schematic diagram and PCB layout using KiCAD software.
4. Ability to perform related technical drawing and CAD software techniques in solving engineering drawing problems.

NDJ10102 FIZIK KEJURUTERAAN [ENGINEERING PHYSICS]

No of Credits: 2

Course Synopsis:
The purpose of this course is to give the knowledge for student about physics and engineering that involve physicals and sciences phenomena, which is the basic for engineering. Theories, principles and standard units have been focused for every syllabus so that the student could understand fully about this course.

Course Outcomes:
1. Ablility to apply knowledge of basic physics.
2. Ablility to explain the principle concepts of physics in engineering.
3. Ability to propose the principle concepts of physics in engineering.

NDJ10203 LITAR ELEKTRIK [ELECTRIC CIRCUITS]

No of Credits: 3

Course Synopsis:
This course covers introduction to the basics of electrical measurements, Ohm's Law, Series and Parallel Circuits, Circuit Theorems and Conversions, and RLC circuits. This course will expose the students to the elements and principles of electrical circuit theory appropriate to any RLC circuit applications.

Course Outcomes:
1. Ability to apply knowledge of fundamentals for an electric circuit.
2. Ability to analyze problems related to an electrical circuit.
3. Ability to apply appropriate techniques and tools to demonstrate fundamental skills in electric circuit.

NDJ10303 SISTEM DIGIT I [DIGITAL SYSTEM I]

No of Credits: 3

Course Synopsis:
This course provides students an exposure to logic design, particularly combinational logic functions. The students are expected to demonstrate the fundamentals of digital electronic circuits design through exposure of basic logic IC's and parallels digital simulation software. The course then develops students to understand and analyse combinational logic applications such as basic decoder and encoder, multiplexer and demultiplexer, adders, comparators and parity circuits. Finally, students are expected to design combinational logic applications and demonstrate their understanding throughout the laboratory and presentation.

Course Outcomes:
1. Ability to apply knowledge and concept of the fundamental digital logic design.
2. Ability to analyze well defined combinational logic functions.
3. Ability to demonstrate practical design for well-defined combinational logic functions.

NDJ10403 PENGATURCARAAN KOMPUTER [COMPUTER PROGRAMMING]

No of Credits: 3

Course Synopsis:
It delivers the competency to students in applying the fundamental programming concepts and is able to analyse problems and produce the solution using algorithm development tools. The course will be delivered using the basic programming language that is trending at the current market.

Course Outcomes:
1. Ability to explain the concepts of programming and its principles.
2. Ability to use appropriate tools for coding, compiling, executing, and debugging computer program.
3. Ability to apply programming techniques with precision to develop, test, and debug functional software solutions and prototypes that address defined engineering problems.

NDJ10503 PERANTI ELEKTRONIK [ELECTRONIC DEVICES]

No of Credits: 3

Course Synopsis:
This course is designed to provide and expose students with fundamentals and application of basic semiconductor devices such as diode, Bipolar Junction Transistor (BJT) and Field Effect Transistor (FET). The syllabus consists of understanding the principles and operation of semiconductor devices, investigating the applications of these devices and solving BJT and FET parameters using various types of biasing. Knowledge on theory acquired in lecture is also enhanced with practical work conducted in the laboratory.

Course Outcomes:
1. Ability to explain basic theories and operations of semiconductor materials and devices.
2. Ability to explain and analyse problems related to semiconductor devices.
3. Ability to demonstrate the semiconductor devices in laboratory.

NDJ10603 TEKNOLOGI ELEKTRIK [ELECTRICAL TECHNOLOGY]

No of Credits: 3

Course Synopsis:
This course will expose the students to the AC circuits, electromagnetic, basic transformer and electrical machines. The topics covered include the AC circuits analysis, electromagnetism, electrical transformers, DC machines and AC machines. General concepts and basic principles of operation for each electrical machine are covered including the characteristics and performance analysis.

Course Outcomes:
1. Ability to apply the theorems and laws of electrical alternating current circuits, three-phase systems, principles of magnetism, and electromagnetism.
2. Ability to analyse the fundamentals, operation and application of electrical transformer, AC machines and DC machines with respect to their equivalent circuits and performances.
3. Ability to apply appropriate techniques and modern engineering tools to simulate and practice electrical works.

NDJ10703 PENGATURCARAAN BERASASKAN OBJEK [OBJECT ORIENTED PROGRAMMING]

No of Credits: 3

Course Synopsis:
This course introduces the object oriented programming concept. The course details on applying and developing an object oriented program and is able to analyse application development of Graphical User Interface (GUI) using object oriented concept and Object Oriented Design(OOD).

Course Outcomes:
1. Ability to apply the concepts of Object Oriented Programming
2. Ability to analyse Object Oriented concept of Graphical User Interface (GUI) Application for any computational problem descriptions
3. Ability to demonstrate Object Oriented concept in laboratory using Graphical User Interface (GUI) Application.

NDJ20002 KESELAMATAN INDUSTRI, PENGURUSAN KUALITI DAN ETIKA [QUALITY MANAGEMENT, INDUSTRIAL SAFETY AND ETHICS]

No of Credits: 2

Course Synopsis:
This course provides students with a comprehensive understanding of industrial safety operations and guidelines, quality management standards and principles, a range of quality tools, and ethical practices commonly applied in industries. It equips students with the knowledge required to grasp the broader framework of safety, quality management and ethical principles in various industries. By the end of the course, students will be able to apply industrial safety standards, as well as implement suitable quality techniques and tools for production management and ethical principles effectively in real-world industrial environments.

Course Outcomes:
1. Ability to analyze the impact of industrial safety and quality management systems (QMS) on health, safety and sustainability using relevant laws and standards.
2. Ability to analyze ethical principles and issues related to engineering ethics and the Code of Ethics.
3. Ability to communicate effectively by structuring presentations on engineering activities, with a focus on Industrial Safety, Quality Management Systems, or Ethical Issues.
4. Ability to evaluate for life-long learning on the case studies in the context of Industrial Safety, QMS or Ethical issues.

NDJ20103 SISTEM DIGIT II [DIGITAL SYSTEM II]

No of Credits: 3

Course Synopsis:
This course exposed the students to the applications of Combinational and Sequential Logic System particularly in shift register and counter design. The course also includes Introduction to Sequencing and Control which will guide the students for subjects that will be taken in later semesters.

Course Outcomes:
1. Ability to describe the theories of basic storage devices and fundamental operations of sequential circuit application.
2. Ability to develop counters using transition tables and counter application using finite state machine and register transfer language.
3. Ability to demonstrate sequential circuit using CAD tools and program onto hardware.
4. Ability to complete task among team members and group project.

NDJ20203 LITAR ELEKTRONIK [ELECTRONIC CIRCUITS]

No of Credits: 3

Course Synopsis:
This course covers introduction to Operational Amplifier, common Op-amp circuitry, active filtering, voltage regulating and voltage oscillating circuits using Op-amps. This course will expose the students to the elements and principles of electronic circuitry, advantages, and analysis of Op-amp circuitry to determine responses for practical applications.

Course Outcomes:
1. Ability to apply the concept of op-amp characteristics, parameters, and circuit operations.
2. Ability to justify the op-amp configurations, op-amp circuits and other related op-amp applications.
3. Ability to demonstrate the practical op-amp circuits and perform troubleshooting.

NDJ20403 SISTEM MIKROPENGAWAL [MICROCONTROLLER SYSTEM]

No of Credits: 3

Course Synopsis:
The aim of this course is to study the Intel 8051 microcontroller architecture and relate that knowledge to the design of microcontroller based systems. This includes the design technique using internal I/O interfacing, internal memory and application of the 8051 special feature configuration for the systems. The study of 8051 instruction set and assembly language programming through various software development tools are also emphasized as the knowledge are needed in the designing of controller-based systems.

Course Outcomes:
1. Ability to analyse the concept of microcontroller system.
2. Ability to demonstrate fundamental microcontroller system applications.
3. Ability to design a microcontroller system in a simple project.
4. Ability to conduct investigation of a simple microcontroller project using proper tools.

NDJ20703 SISTEM PENGOPERASIAN [OPERATING SYSTEM]

No of Credits: 3

Course Synopsis:
This course introduces the fundamentals of operating systems. Topics include inter-process communication, process scheduling, memory management, virtual memory and file system. Format principles are illustrated with examples and case studies of one or more contemporary operating systems.

Course Outcomes:
1. Able to define and explain the major concepts which builds up an operating system
2. Able to develop a program in GNU/Linux operating system for coding, compile, execute and test C programming in simulating issues in Operating System.
3. Able to describe the processes, file management, processor scheduler and memory management

NDJ20803 SISTEM PANGKALAN DATA [DATABASE SYSTEM]

No of Credits: 3

Course Synopsis:
The purpose of this course is to give the knowledge for students about database system models and architecture. Data modelling will be based on high level conceptual data models for database design. Topics covered in this course are, Database System Concepts and Architecture, Data Modelling using Entity Relationship (ER) Model, Relational Data Model, SQL, Relational Algebra and Database Programming knowledge.

Course Outcomes:
1. Ability to apply knowledge and concept of database system.
2. Ability to create SQL program, recognize types of SQL statement by using software tool and demonstrate the workability of the programs
3. Ability to design conceptual models of an application domain for database applications
4. Ability to complete task among team members and group project.

NDJ20903 SISTEM KOMPUTER [COMPUTER SYSTEM]

No of Credits: 3

Course Synopsis:
This course focuses on learning the hardware design aspect of a computer system's architecture and organization, which includes the data path and control units as well as some advanced topics that support the current computing era. The syllabus covers the theory of basic computer systems, instruction formats, memory structures and also interfacing methods. The practical exposure of using standard industrial computer aided design (CAD) tools and hardware description language as part of their technical skills acquisition.

Course Outcomes:
1. Ability to outline the architecture and organization of the central processing unit.
2. Ability to distinguish the structural and functional concepts of the central processing unit.
3. Ability to build hardware description language programs and relate towards relevant computer systems.

NDJ21003 PERHUBUNGAN DATA DAN RANGKAIAN [DATA COMMUNICATION AND NETWORK]

No of Credits: 3

Course Synopsis:
This course is to discuss the fundamental concepts of data communication and network, emphasized on application of concept architecture and layer, signal transmission technique, network topologies and connectivity devices. It also discussed multiplexing as well as to give an exposure of network application.

Course Outcomes:
1. Ability to explain the theory and basics of data communication and network.
2. Ability to analyze the industrial application of network connection concept, protocol used, network equipment and instruments
3. Ability to construct and demonstrate the network setup and perform troubleshooting.

NDJ21503 PRINSIP ISYARAT DAN SISTEM [PRINCIPLES OF SIGNALS AND SYSTEMS]

No of Credits: 3

Course Synopsis:
This course is designed to expose students to types of signals, operations of signals and systems. Specifically, this subject covers analysis of signals in time domain and frequency domain representation, operation of signals and transformations of signals in s-domain and also the properties of a Linear Time Invariant system.

Course Outcomes:
1. Ability to interpret types, characteristics and operations of the signals and systems.
2. Ability to analyze the LTI system, involving time-domain signals and other related transforms
3. Ability to demonstrate signal transformations and system transfer functions using related software.

NDJ226033 KEJURUTERAAN PERHUBUNGAN [COMMUNICATION ENGINEERING]

No of Credits: 3

Course Synopsis:
This course introduces the students with the basic communications systems including parameters, basic elements, modems and noise. The knowledge gained will contribute in understanding the operation of the related circuit. The exposures in amplitude modulations and frequency modulations will help the most in understanding the real applications. The introduction of digital communications will enhance the students' understanding about the revolution of communications and latest technology

Course Outcomes:
1. Able to apply the knowledge of communication systems and digital communication technology
2. Able to analyze the outputs of AM & FM circuits.
3. Able to demonstrate the problems related to modulation using related software.

NDJ30003 INSTRUMENTASI ELEKTRONIK [ELECTRONIC INSTRUMENTATION]

No of Credits: 3

Course Synopsis:
Introduction to the basics of electronic instrumentation, transducers and the internet of things (IoT) system that is used in modern instrumentation systems and embedded system design. Expose students to the elements and principles of data acquisition system and sensor integration with appropriate applications. Practical involves the interfacing of transducer circuits and signal conditioning circuits to internet of things (IoT) systems.

Course Outcomes:
1. Able to explain the basic concept of electronic instrumentation and multiple type of sensor
2. Able to analyze the problem related to instrumentation electronic and Internet of things (IoT)
3. Ability to build design model-based problem related to instrumentation electronic and Internet of things (IoT)

NDJ30103 SISTEM KAWALAN [CONTROL SYSTEMS]

No of Credits: 3

Course Synopsis:
The course covers mathematical modelling of electrical and mechanical systems using Laplace transform. They will also learn the basics of transfer function, block diagram, signal flow graph and time response analysis. Afterwards, they will learn how to improve system stability in time and frequency domains. Lab experiments help understand further

Course Outcomes:
1. Ability to use Laplace transform to solve mathematical modelling and outline the characteristics of control system response.
2. Ability to analyze and evaluate the stability of a system's response in time and frequency domain.
3. Ability to reproduce open and closed loop feedback stability conditions of a system using computer aided software tools.

NDJ30304 PROJEK TAHUN AKHIR [FINAL YEAR PROJECT]

No of Credits: 4

Course Synopsis:
This course offers to fulfil the 4 credits for the final year project for diploma students.

Course Outcomes:
1. Ability to develop and perform data interpretations and analysis to solve engineering problems.
2. Ability to conduct research and investigations systematically by planning and executing in a timely manner.
3. Ability to apply appropriate techniques, modern engineering and IT tools to well-defined engineering problems.
4. Ability to evaluate the element of environment and sustainability in project implementation.
5. Ability to explain the project with efficient communication skills.
6. Ability to manage the project and finance according to Gantt Chart (milestone) and effective costing.
7. Ability to demonstrate continuous learning of new knowledge and skill to support the development of the project.

NDJ30403 KEJURUTERAAN PERISIAN [SOFTWARE ENGINEERING]

No of Credits: 3

Course Synopsis:
The subject will focus on the concept and principles of software engineering. It introduces essential concepts in software development activities. This includes theories, techniques, processes and tools for professional software development. The course also emphasizes understanding system requirements, finding appropriate engineering compromises, effective methods of design and software development.

Course Outcomes:
1. Ability to apply the software engineering techniques for engineering problem
2. Ability to build design models based on software engineering problems by using software tools.
3. Ability to decide the suitable software engineering techniques for engineering problem

NDJ30508 LATIHAN INDUSTRI [INDUSTRIAL TRAINING]

No of Credits: 8

Course Synopsis:
The course will expose students to aspects such as technical, application, company organization structure, company operation, department function, work procedure, safety procedure, management, communication, skills, project management and presentation. The students are also required to submit their log book and final report at the end of the industrial training. Overall, the course is practical-based.

Course Outcomes:
1. Ability to apply theoretical knowledge and practical skills to application in the industry.
2. Ability to apply theoretical knowledge and practical skills to application in the industry.
3. Ability to commit to professional ethics of technician practices.
4. Ability to work effectively as an individual, and as a member in diverse technical teams to complete the given task by the host company.
5. Ability to communicate effectively and able to comprehend the works of others, writing reports and present own work.

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LIST OF COURSES

COURSE CODE	COURSE NAME	SDG *(sila nyatakan)*
SDZ11101	Kumpulan Latihan Kelanasiswa Malaysia I (KLKM I) [Malaysian Universiti Rover Training Group I (MURTG I)]	SDG 16
SDZ11201	Kumpulan Latihan Kelanasiswa Malaysia II (KLKM II)[Malaysian Universiti Rover Training Group II (MURTG II)]	SDG 16
SDZ11301	Briged Bomba Dan Penyelamat I [Fire And Rescue Bridged I]	SDG16
SDZ11401	Briged Bomba Dan Penyelamat II [Fire And Rescue Bridged II]	SDG 16
SDZ11501	Bulan Sabit Merah Malaysia I (BSMM I) [Malaysian Red Crescent I (BSSM I)]	SDG 16
SDZ11601	Bulan Sabit Merah Malaysia II (BSMM II) [Malaysian Red CrescenT I (BSSM II)]	SDG 16
SDZ11701	Pertahanan Awam I [CIVIL DEFENSE I]	SDG 16
SDZ11801	Pertahanan Awam II [CIVIL DEFENSE II]	SDG 16
SDZ11901	Pandu Puteri Klover I [CLOVER I]	SDG 16
SDZ12001	Pandu Puteri Klover II [CLOVER II]	SDG 16
SDZ12101	St. John Ambulans Malaysia I [Malaysian St. John Ambulance I]	SDG 16
SDZ12201	St. John Ambulans Malaysia II [Malaysian St. John Ambulance II]	SDG 16
SDZ12301	Pancaragam I [Brass Band I]	SDG 04
SDZ12401	Pancaragam II [Brass Band II]	SDG 04
SDZ12501	Pasukan Askar Wataniah 1 [Territorial Army 1]	SDG 16
SDZ12601	Pasukan Askar Wataniah 2 [Territorial Army 2]	SDG 16
SDZ22501	Pasukan Askar Wataniah 3 [Territorial Army 3]	SDG 16
SDZ22601	Pasukan Askar Wataniah 4 [Territorial Army 4]	SDG 16
SDZ14001	Tahfiz 1 [Tahfiz 1]	SDG 04
SDZ14101	Tahfiz 2 [Tahfiz 2]	SDG 04

SDZ11101 MALAYSIAN UNIVERSITI ROVER TRAINING GROUP I (MURTG I)

No of Credits: 1

Course Synopsis:
KLKM merupakan badan beruniform bersifat antarabangsa yang membincangkan mengenai ilmu kemahiran hidup dan ikhtiar hidup. Kursus ini meliputi sejarah dan latar belakang, undang-undang dan persetiaan pengakap, latihan lencana kemahiran asas, latihan lencana wajib, latihan lencana pilihan dan latihan lencana Baden Powell. Pelajar akan didedahkan dengan pelbagai jenis ikatan dan simpulan dan khidmat masyarakat.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran kepimpinan dalam aktiviti pengangkap.
2. Keupayaan untuk mempraktikkan kemahiran berkomunikasi yang berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk mempamerkan kaedah yang bersesuaian dalam aktiviti pengakap.

SDZ11201 MALAYSIAN UNIVERSITI ROVER TRAINING GROUP I (MURTG II)

No of Credits: 1

Course Synopsis:
KLKM merupakan badan beruniform bersifat antarabangsa yang membincangkan mengenai ilmu kemahiran hidup dan ikhtiar hidup berdasarkan latihan Baden Powell. Para pelajar juga akan didedahkan dengan tatacara kehidupan yang beretika, saling bantu membantu, hormat menghormati, kasih sesama manusia dan alam sekitar melalui penghayatan persetiaan dan undang-undang Pengakap serta penganjuran program pengakap bersama komuniti.

Course Outcomes:
1. Keupayaan untuk menunjuk cara kemahiran kepimpinan dalam aktiviti pengangkap
2. Keupayaan untuk berkomunikasi dengan berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk mengorganisasi aktiviti perkhemahan dan pengembaraan bersama komuniti.

SDZ11301 FIRE AND RESCUE BRIGADE I

No of Credits: 1

Course Synopsis:
Tujuan utama kursus ini untuk memupuk semangat setia kepada organisasi (UniMAP & Briged Bomba) serta Negara. Memupuk sikap berdisiplin serta sedia memberi perkhidmatan sukarela pada setiap masa dan di mana jua diperlukan. Kursus ini juga memberi nilai "soft skill" dalam kalangan mahasiswa UniMAP kerana kebakaran merupakan ancaman yang terdapat dalam masa aman. Justeru, kursus ini diharap dapat memupuk serta memberi kesedaran yang tinggi kepada mahasiswa tentang bahaya kebakaran.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran kepimpinan dalam aktiviti kebombaan.
2. Keupayaan untuk mempraktikkan kemahiran berkomunikasi dengan berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk mempamerkan kaedah dan langkah-langkah asas sesuatu aktiviti kebombaan yang bersesuaian dalam komuniti.

SDZ11401 FIRE AND RESCUE BRIGADE II

No of Credits: 1

Course Synopsis:
Tujuan ini lanjutan daripada Kursus SDZ11301 Briged Bomba dan Penyelamat I. Pelajar akan didedahkan dengan teknik-teknik menyelamatkan mangsa dari lokasi kebakaran dan tatacara pengurusan risiko kebakaran. Pelajar juga akan diajar asa ikhtiar hidup dan bahaya kebakaran. Kursus ini juga memberi pengetahuan, latihan, kemahiran kepada mahasiswa UniMAP sebagai langkah berjaga-jaga serta pencegahan. Di samping meningkatkan semangat untuk perkhidmatan kepada masyarakat dalam kalangan mahasiswa UniMAP terutama apabila berlaku sesuatu ancaman kebakaran.

Course Outcomes:
1. Keupayaan untuk menunjuk cara kaedah dan langkah-langkah aktiviti menyelamat kebakaran dalam kumpulan kecil.
2. Keupayaan untuk mempraktik kemahiran berkomunikasi dengan berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mempamerkan kemahiran teknikal dalam sesuatu aktiviti kebombaan yang bersesuaian dalam komuniti.

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SDZ11501 MALAYSIAN RED CRESCENT I (BSSM I)

No of Credits: 1

Course Synopsis:
Kursus BSMM ini adalah bertujuan untuk mendedahkan mahasiswa UniMAP kepada aspek-aspek pengetahuan asas pertolongan cemas, latihan kawad asas dan khidmat masyarakat. Kursus di peringkat I ini merangkumi pengetahuan tentang Bulan Sabit Merah, pendidikan dan undang-undang kemanusiaan antarabangsa bulan sabit merah serta teori dan praktikal yang berkaitan asas pertolongan cemas berdasarkan modul bulan sabit merah Malaysia. Kursus ini juga memberi kesedaran kepada mahasiswa UniMAP tentang kepentingan bantuan menyelamat secara pantas apabila sesuatu ancaman kecemasan nyawa berlaku.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran asas pertolongan cemas BSMM dalam aktiviti kumpulan kecil.
2. Keupayaan untuk mempraktikkan kemahiran berkomunikasi yang berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mempamerkan kaedah dan langkah-langkah aktiviti menyelamat dan pertolongan cemas yang bersesuaian dalam komuniti

SDZ11601 MALAYSIAN RED CRESCENT II (BSSM II)

No of Credits: 1

Course Synopsis:
Kursus Lanjutan dari kursus SDZ11501 BSMM I ini pelajar akan didedahkan dengan prinsip-prinsip asas serta matlamat pertolongan cemas. Pelajar akan didedahkan dengan konsep dan kemahiran aktiviti menyelamat dan pertolongan cemas secara beretika. Amalan keselamatan dan kesihatan, operasi pengurusan bencana dan operasi menyelamat dalam situasi-situasi yang berbeza juga ditekankan berdasarkan modul bulan sabit merah Malaysia.

Course Outcomes:
1. Keupayaan untuk menunjuk cara aktiviti pertolongan cemas dalam kumpulan kecil.
2. Keupayaan untuk mempraktik komunikasi berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mempamerkan kaedah bantuan dan operasi menyelamat yang bersesuaian dalam komuniti.

SDZ11701 CIVIL DEFENSE I

No of Credits: 1

Course Synopsis:
Kursus ini menawarkan pengetahuan dan kemahiran asas kawad kaki, asas pertolongan cemas, sistem pendarahan tubuh manusia, sokongan asas kehidupan, pemadaman kebakaran asas dan pengenalan bencana alam. Para pelajar akan diajar secara teori dan praktikal berkenaan operasi menyelamat dan pertolongan cemas semasa kebakaran. Pelajar juga akan didedahkan dengan jenis-jenis kecederaan akibat kebakaran dan cara rawatan serta tatacara pengurusan kecemasan Jabatan Pertahanan Awam Malaysia.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran kepimpinan pertahanan awam dalam aktiviti kumpulan kecil.
2. Keupayaan untuk mempraktik komunikasi berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mempamerkan kaedah dan kemahiran teknikal dalam melaksanakan aktiviti menyelamat dalam komuniti.

SDZ11801 CIVIL DEFENSE II

No of Credits: 1

Course Synopsis:
Kursus ini menawarkan pengetahuan dan kemahiran asas kawad kaki, asas pertolongan cemas, sistem pendarahan tubuh manusia, rawatan lecur kebakaran, rawatan kecederaan tulang, sendi dan otot, rawatan gigitan serangga dan binatang berbisa, resusitasi kardio pulmonari dan teknik ekstraksi. Para pelajar akan diajar secara teori dan praktikal berkenaan operasi menyelamat dan pertolongan cemas semasa kemalangan bagi meningkatkan pemahaman dan kesediaan mental dan fizikal semasa menghadapi sebarang isu kecemasan.

Course Outcomes:
1. Keupayaan untuk menunjuk cara langkah-langkah aktiviti menyelamat dan pertolongan cemas dalam kumpulan kecil.
2. Keupayaan untuk mepraktik komunikasi berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mengorganisasi sesuatu aktiviti bantuan dan operasi menyelamat yang bersesuaian dalam komuniti.

SDZ11901 CLOVER I

No of Credits: 1

Course Synopsis:
Kursus ini merangkumi latar belakang dan prinsip asas gerakan kepanduan dan Pandu Puteri yang bertujuan melahirkan graduan yang mempunyai kemahiran insaniah melalui Program Pandu Puteri terutamanya dari aspek pengetahuan dan kemahiran asas Pandu Puteri berteraskan kerja berpasukan yang boleh diaplikasikan dalam kerjaya yang diceburi.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran kepimpinan dalam aktiviti Pandu Puteri.
2. Keupayaan untuk mempraktik komunikasi berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk mempamerkan kemahiran asas dalam aktiviti kepanduan dengan komuniti.

SDZ12001 CLOVER II

No of Credits: 1

Course Synopsis:
Kursus Pandu Puteri Klover II ini bertujuan untuk memupuk kemahiran insaniah melalui Program Pandu Puteri terutamanya dari aspek pengetahuan dan kemahiran asas Pandu Puteri yang bersifat global. Pelajar akan didedahkan dengan aspek-aspek pengurusan dan pentadbiran organisasi Pandu Puteri sedunia (WAGGGS). Pengapllikasian konsep kerja secara berpasukan yang boleh dalam program-program perkhemahan dan istiadat-istiadat tertentu pandu puteri Malaysia.

Course Outcomes:
1. Keupayaan untuk menyertai aktiviti kerja sosial yang memberi sumbangan kepada komuniti.
2. Keupayaan untuk mempraktik komunikasi berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mengorganisasi sesuatu aktiviti kepanduan/pandu puteri yang bersesuaian dalam komuniti.

SDZ12101 MALAYSIAN ST. JOHN AMBULANCE I

No of Credits: 1

Course Synopsis:
Kursus ini bertujuan memperkenalkan prinsip-prinsip asas serta matlamat pertolongan cemas. Pelajar akan didedahkan bagaimana memberi bantuan dalam sesuatu kecemasan. Mereka akan belajar kaedah pembalutan dan pembebatan, serta cara mengendalikan pendarahan luaran dan keadaan renjatan. Pelajar juga akan mengenali kepatahan tulang, terseliuh, dislokasi dan cara memberi rawatan kecemasan ke atas kes-kes tersebut.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran kepimpinan dalam aktiviti pertolongan cemas.
2. Keupayaan untuk mempraktik kemahiran berkomunikasi dengan berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk menunjukkan langkah-langkah pertolongan cemas dalam aktiviti menyelamat dengan komuniti.

SDZ12201 MALAYSIAN ST. JOHN AMBULANCE II

No of Credits: 1

Course Synopsis:
Kursus ini sebagai pendedahan dalam pengurusan pertolongan cemas dan bagaimana memberi bantuan dalam sesuatu kecemasan. Mereka akan belajar kaedah memberi kecemasan mangsa tercekik dan sistem peredaran oksigen dalam darah. Pelajar juga akan mengenali kepatahan tulang, terseliuh, dislokasi dan cara memberi rawatan kecemasan ke atas kes-kes tersebut dan kaedah CPR.

Course Outcomes:
1. Keupayaan untuk menunjuk cara pertolongan cemas dalam aktiviti kumpulan kecil.
2. Keupayaan untuk mempraktik kemahiran berkomunikasi dengan berkesan dalam aktiviti berkumpulan.
3. Berkeupayaan untuk mempamerkan kaedah dan langkah-langkah aktiviti menyelamat dan pertolongan cemas yang bersesuaian dalam komuniti.

SDZ12301 BRASS BAND I

No of Credits: 1

Course Synopsis:
Kursus kokurikulum ini bertujuan mendedahkan pelajar kepada ilmu pancaragam secara teori dan teknikal. Dari segi teori, kursus ini lebih menjurus kepada sejarah, latar belakang, terminologi, pengurusan diri dan lain-lain yang berkaitan dengan pancaragam. Manakala dari segi teknikal, kursus ini lebih menumpukan kepada latihan amali (praktikal) dari segi kemahiran bermain alat muzik di dalam kumpulan pancaragam.

Course Outcomes:
1. Keupayaan untuk menunjukkan kemahiran kepimpinan dalam permainan muzik secara berkumpulan
2. Keupayaan untuk menpraktik komunikasi berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk mempamerkan alunan muzik melalui persembahan pancaragam.

SDZ12401 BRASS BAND II

No of Credits: 1

Course Synopsis:
Kursus kokurikulum ini bertujuan mendedahkan pelajar-pelajar kepada ilmu pancaragam dari kemahiran teori dan teknikal. Dari segi teori, kursus ini lebih menjurus kepada sejarah, latar belakang, terminologi, pengurusan diri dan lain-lain yang berkaitan dengan pancaragam. Manakala dari segi teknikal, kursus ini lebih menumpukan kepada latihan amali (praktikal) dari segi kemahiran bermain alat muzik di dalam kumpulan pancaragam.

Course Outcomes:
1. Keupayaan menunjuk cara sikap profesional dan beretika dalam persembahan pancaragam.
2. Keupayaan untuk mempraktikkan kemahiran berkomunikasi yang berkesan dalam aktiviti berkumpulan.
3. Keupayaan untuk mengorganisasi alunan muzik melalui aktiviti persembahan pancaragam dengan komuniti.

SDZ12501 TERRITORIAL ARMY 1

No of Credits: 1

Course Synopsis:
Kursus ini bertujuan untuk memberikan pendedahan kepada anggota Askar Wataniah mengenai asas sistem ketenteraan, yang merangkumi struktur organisasi, disiplin, dan etika dalam tentera. Pelajar akan mempelajari mengenai tugas dan penugasan dalam operasi tentera serta kepentingan kerja berpasukan dalam memastikan keberkesanan misi. Di samping itu, kursus ini turut mengutamakan pengembangan nilai kepimpinan dan sifat setia kawan bertujuan membentuk anggota yang bukan sahaja berkemahiran dalam aspek ketenteraan tetapi juga memiliki ciri-ciri kepimpinan yang berkualiti. Dengan penekanan terhadap pembinaan sahsiah dan kerjasama, kursus ini akan melahirkan pemimpin yang bertanggungjawab dan berwibawa dalam menghadapi pelbagai cabaran.

Course Outcomes:
1. Keupayaan untuk mengamalkan prinsip dan disiplin asas ketenteraan dalam memainkan peranan sebagai seorang pemimpin.
2. Keupayaan untuk mengamalkan prinsip asas komunikasi ketenteraan.
3. Keupayaan untuk mempamerkan kemahiran asas dan etika profesional ketenteraan yang bersesuaian dalam menjalankan aktiviti berkumpulan.

SDZ12601 TERRITORIAL ARMY 2

No of Credits: 1

Course Synopsis:
Kursus ini memberikan pendedahan kepada anggota Askar Wataniah mengenai pelaksanaan latihan secara berkumpulan, etika kerja, dan pengurusan maklumat serta idea baharu melalui asas ketenteraan. Anggota akan dilatih dalam ilmu medan perang (IMP) yang merangkumi latihan taktikal dan strategi ketenteraan. Selain itu, kursus ini juga membolehkan peserta menjalani latihan mingguan, memahami urusan latihan, pentadbiran, serta aspek sosial dan kehidupan di dalam kem. Dengan latihan yang komprehensif, kursus ini bertujuan untuk membentuk anggota yang berdisiplin, bekerjasama, dan berdaya saing dalam menghadapi pelbagai cabaran ketenteraan.

Course Outcomes:
1. Keupayaan untuk mengamalkan prinsip asas latihan kepimpinan ketenteraan dalam memainkan peranan sebagai seorang pemimpin.
2. Keupayaan untuk mempraktikkan kemahiran komunikasi yang berkesan dalam aktiviti latihan asas kepimpinan dan kemahiran ketenteraan.
3. Keupayaan untuk mempamerkan kaedah kemahiran kepimpinan dan ketahanan fizikal ketenteraan yang bersesuaian dalam aktiviti berkumpulan.

SDZ22501 TERRITORIAL ARMY 3

No of Credits: 1

Course Synopsis:
Kursus ini bertujuan untuk memberi pendedahan kepada anggota Askar Wataniah mengenai operasi ketenteraan, undang-undang tentera, serta prosedur dan tugasan rejimental. Pelajar akan mempelajari aspek penting dalam melaksanakan tugas ketenteraan, termasuk menguasai kemahiran komunikasi yang efektif dalam situasi operasi. Selain itu, kursus ini menekankan nilai kerjasama dalam kumpulan untuk mencapai matlamat bersama, serta melaksanakan aktiviti ketenteraan dengan cekap dan berkesan. Dengan pendekatan ini, pelajar akan lebih bersedia untuk menghadapi cabaran dalam tugas ketenteraan yang sebenar.

Course Outcomes:
1. Keupayaan untuk memahami dan mengamalkan undang-undang ketenteraan dalam memainkan peranan sebagai seorang pemimpin.
2. Keupayaan untuk mempraktikkan kemahiran komunikasi dalam aktiviti bacaan peta dan aktiviti komunikasi ketenteraan yang lain.
3. Keupayaan untuk mempraktikkan kemahiran ketenteraan yang bersesuaian dalam aktiviti berkumpulan yang berkaitan dengan operasi ketenteraan

SDZ22601 TERRITORIAL ARMY 4

No of Credits: 1

Course Synopsis:
Kursus ini memberi pendedahan kepada anggota Askar Wataniah mengenai sistem perjawatan, pembahagian tanggungjawab, serta penugasan rejimental dalam Angkatan Tentera Malaysia. Selain itu, kursus ini juga memberikan latihan intensif yang melibatkan aspek fizikal dan mental, termasuk Ujian Jalan Lasak (UJL), Ujian Kemahiran Menembak (UKM), dan Senaman Perang. Tujuan utama kursus ini adalah untuk mempersiapkan anggota dengan kemahiran dan kekuatan yang diperlukan dalam menghadapi tugas ketenteraan, serta memperkukuh ketahanan fizikal dan mental mereka dalam situasi yang mencabar.

Course Outcomes:
1. Keupayaan untuk mempamerkan sifat kepimpinan dalam menguruskan tugasan regimental dan aktiviti sosial ketenteraan.
2. Keupayaan untuk mempraktikkan kemahiran komunikasi yang berkesan dalam pelbagai aktiviti ketenteraan.
3. Keupayaan untuk mempamerkan etika profesional ketenteraan, kemahiran ketenteraan dan ketahanan fizikal ketenteraan yang bersesuaian dalam aktiviti berkumpulan.

SDZ14001 TAHFIZ 1

No of Credits: 1

Course Synopsis:
Kursus ini bertujuan mendedahkan dan memberikan kefahaman pelajar berkenaan dengan aspek-aspek Kemahiran insaniah dan keagamaan seperti kemahiran penjagaan Al quran, kemahiran menulis semula Al Quran, Kemahiran pengurusan masa, kerjasama berpasukan dan pembelajaran sepanjang hayat serta disiplin kepada para pelajar dan memperbanyakkan platform kerjasama di antara universiti lain samada di dalam atau luar negara melalui aktiviti kokurikulum.

Course Outcomes:
1. Kebolehan untuk mengaplikasikan hukum tajwid dengan sebutan yang fasih dalam bacaan Al-Quran semasa proses hafazan dan pembelajaran tajwid.
2. Keupayaan untuk mengamalkan pengurusan masa secara berkesan dan mempersembahkan semula bacaan Al-Quran dengan tepat melalui aktiviti hafazan dan tajwid.
3. Keupayaan untuk mengamalkan kemahiran komunikasi yang berkesan dalam aktiviti hafazan dan pembelajaran tajwid secara berkumpulan.

SDZ14101 TAHFIZ 2

No of Credits: 1

Course Synopsis:
Kursus ini merupakan lanjutan kepada kursus SDZ14001 Tahfiz 1 dan dirangka untuk memperkukuh pemahaman pelajar dalam aspek kemahiran insaniah dan nilai-nilai keagamaan. Penekanan diberikan kepada kemahiran penjagaan dan penulisan semula Al-Quran, pengurusan masa yang berkesan, pembentukan kerjasama dalam pasukan, serta penerapan konsep pembelajaran sepanjang hayat dan disiplin diri. Kursus ini turut menyediakan platform kerjasama dengan institusi pengajian tinggi lain, sama ada di peringkat nasional mahupun antarabangsa, melalui pelaksanaan aktiviti kokurikulum yang strategik dan berimpak tinggi.

Course Outcomes:
1. Keupayaan untuk membaca al-Quran dengan sebutan yang tepat melalui penerapan hukum tajwid yang betul dalam proses hafazan dan pembelajaran tajwid.
2. Keupayaan untuk menunjukkan disiplin diri dalam pengurusan masa serta mempersembahkan semula hafazan al-Quran secara berkesan.
3. Keupayaan untuk menunjukkan kemahiran bekerjasama secara berkesan dalam aktiviti penghafazan dan pembelajaran tajwid secara berkumpulan.


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