

ACADEMIC HANDBOOK

SESSION 2026/2027

DIPLOMA PROGRAMMES

SCHOOL OF TECHNICAL FOUNDATION
AND DIPLOMA STUDIES (UTeM STEP)



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Diploma Programmes
Session 2026/2027

SCHOOL OF TECHNICAL FOUNDATION AND DIPLOMA STUDIES
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
(UTeM STEP)

All the information in this Academic Handbook is precise and current at the time of print.
Version September 2026

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of the Dean of School of Technical Foundation and Diploma Studies,
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Published and printed in Malaysia by

Penerbit UTeM Press

Aras Bawah, Perpustakaan Laman Hikmah

Universiti Teknikal Malaysia Melaka

Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia

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UTeM's TOP MANAGEMENT



**Professor Datuk Ts. Dr.
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 Vice Chancellor



**Professor Dr. Mohd Rizal
 Bin Salleh**
 Deputy Vice Chancellor
 Academic and International



**Professor Dr. Zahriladha
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 Research and Innovation



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 Student Affairs & Alumni



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 (Strategic & Global
 Sustainability)



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 Mahat**
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 Bursar



**Mrs. Siti Saluwa Binti
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**Mr. Mohd Nizam Bin
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 Legal Advisor



Chief Digital Officer

VISION, MISSION & MOTTO

Universiti Teknikal Malaysia Melaka (UTeM) was established under Section 20 University and University Collage Act 1971 (Act 30) through “Perintah Universiti Teknikal Malaysia Melaka (Pemberbadanan 2007)” gazetted as P.U. (A) 43 on the 1st of February 2007. UTeM was initially known as Kolej Universiti Kebangsaan Malaysia (KUTKM), established on the 1st of December 2001.

VISION

To Be One of the World's Leading
Innovative and Creative Technical
Universities

MISSION

UTeM is determined to lead and contribute to the wellbeing of the country and the world by:

- 1 Promoting knowledge through innovative teaching and learning, research and technical scholarship.
- 2 Developing professional leaders with impeccable moral values.
- 3 Generating sustainable development through smart partnership with the community and industry.

MOTTO

Excellence *Through* **Competency**

GENERAL EDUCATIONAL GOALS

1. To conduct academic and professional programmes based on relevant needs of the industries.
2. To produce graduates with relevant knowledge, technical competency, soft skills, social responsibility and accountability.
3. To cultivate scientific method, critical thinking, creative and innovative problem solving and autonomy in decision making amongst graduates.
4. To foster research development and innovation activities with industries for the prosperity of the Nation.
5. To equip graduates with leadership and teamwork skills as well as develop communication and life-long learning skills.
6. To develop technopreneurship and managerial skills amongst graduates.
7. To instill an appreciation of the arts and cultural values and awareness of healthy life styles amongst graduates.

INTRODUCTION TO UTeM STEP



The establishment of the School of Technical Foundation and Diploma Studies, or *Sekolah Asasi Teknikal dan Pengajian Diploma* (UTeM STEP), was approved by Jabatan Pengajian Tinggi (JPT) on 6 February 2026. UTeM STEP serves as the centralized Responsibility Centre (PTj) responsible for administering, managing, and driving all diploma and technical foundation programmes across the university.

STEP aims to become a dynamic hub for technical and vocational excellence at UTeM, offering competitive programmes at both foundation and diploma levels. The school integrates solid academic pathways with high-impact TVET (Technical and Vocational Education and Training) frameworks to enhance the professional knowledge and practical skills of human capital. The STEP curriculum was specifically developed to address modern industrial challenges, including rapid technological advancements, the digital economy, and the nation's evolving strategic vision to empower advanced TVET agendas.

Thus, STEP plays a vital role in creating industry-ready professionals for technology-oriented sectors, engineering firms, and emerging digital industries. By diversifying our courses into both structured academic modules and practice-based professional certifications—spanning areas like Artificial Intelligence, Cyber Security, and specialized engineering domains—our graduates will be highly competent in technical execution, technological innovation, leadership, and adaptive communication.



FOREWORD BY THE DEAN

Associate Professor Ts. Dr. Umar Al-Amani Bin Haji Azlan

Dean

School of Technical Foundation and Diploma Studies (UTeM STEP)
Universiti Teknikal Malaysia Melaka

Assalamualaikum Warahmatullahi Wabarakatuh and Salam Sejahtera

*It is with great pleasure that I welcome all new and senior students to the **School of Technical Foundation and Diploma Studies (UTeM STEP), Universiti Teknikal Malaysia Melaka (UTeM)** for the **Academic Session 2026/2027**.*

On behalf of the management, academic staff, and administrative team of UTeM STEP, I extend my heartfelt congratulations on becoming part of a dynamic academic community that is committed to nurturing competent, innovative, and industry-ready graduates. As Malaysia's first Technical Public University, UTeM has continuously championed technical and technology-based education to meet the evolving needs of the nation and the global workforce.

The establishment of UTeM STEP marks a significant milestone in strengthening the University's commitment towards providing a comprehensive educational pathway through foundation and diploma programmes. Our mission is to provide a strong academic foundation, practical technical competencies, and professional values that will enable our students to excel in higher education and thrive in the rapidly changing technological landscape.

*The **Academic Handbook Session 2026/2027** has been carefully prepared as a comprehensive reference for students throughout their academic journey. It contains essential information on programme structures, curriculum, academic regulations, assessment methods, graduation*

requirements, student support services, and various academic policies. I strongly encourage every student to familiarise themselves with the contents of this handbook and use it as a guide in planning and managing your studies effectively. Academic handbooks are intended to serve as the primary reference for programme structures, regulations, and academic procedures throughout a student's study period.

At UTeM STEP, learning extends beyond the classroom. We place strong emphasis on experiential learning, industry engagement, digital innovation, entrepreneurship, leadership development, and holistic student growth. Through close collaboration with industry partners and professional bodies, our programmes are designed to equip graduates with future-oriented knowledge, technical expertise, and transferable skills that are highly valued in the era of Industry 4.0 and beyond.

Success at the university level requires commitment, discipline, integrity, and perseverance. I encourage every student to embrace every learning opportunity, actively participate in academic and co-curricular activities, cultivate critical thinking and creativity, and continuously strive for excellence. Remember that your journey at UTeM STEP is not merely about obtaining a qualification, but about developing yourself into a competent professional and a responsible global citizen.

I would also like to express my sincere appreciation to all academic and administrative staff whose dedication and commitment have contributed towards producing this handbook and ensuring the successful delivery of our academic programmes. Finally, I wish all students every success in your studies. May your time at UTeM STEP be filled with meaningful learning experiences, memorable achievements, and personal growth. Together, let us build a future of excellence through knowledge, innovation, and technical education.

Thank you.

"Your First Step to Technical Excellence"

OUR VISSION



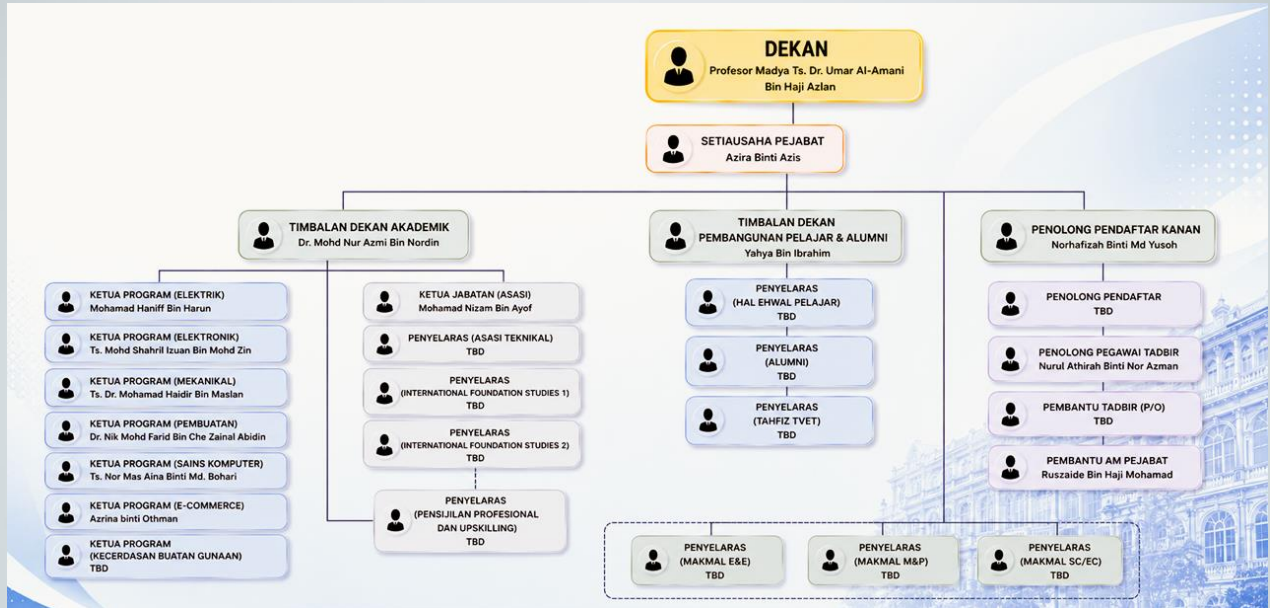
To be a **leader in technical education**, developing knowledgeable, highly skilled, innovative and globally competitive talent.

OUR MISSION



To provide **high-quality education** that advances knowledge, technical skills, innovation and lifelong learning through responsive programmes and **strategic collaboration** with industry, educational institutions and the community.

ORGANIZATION CHART

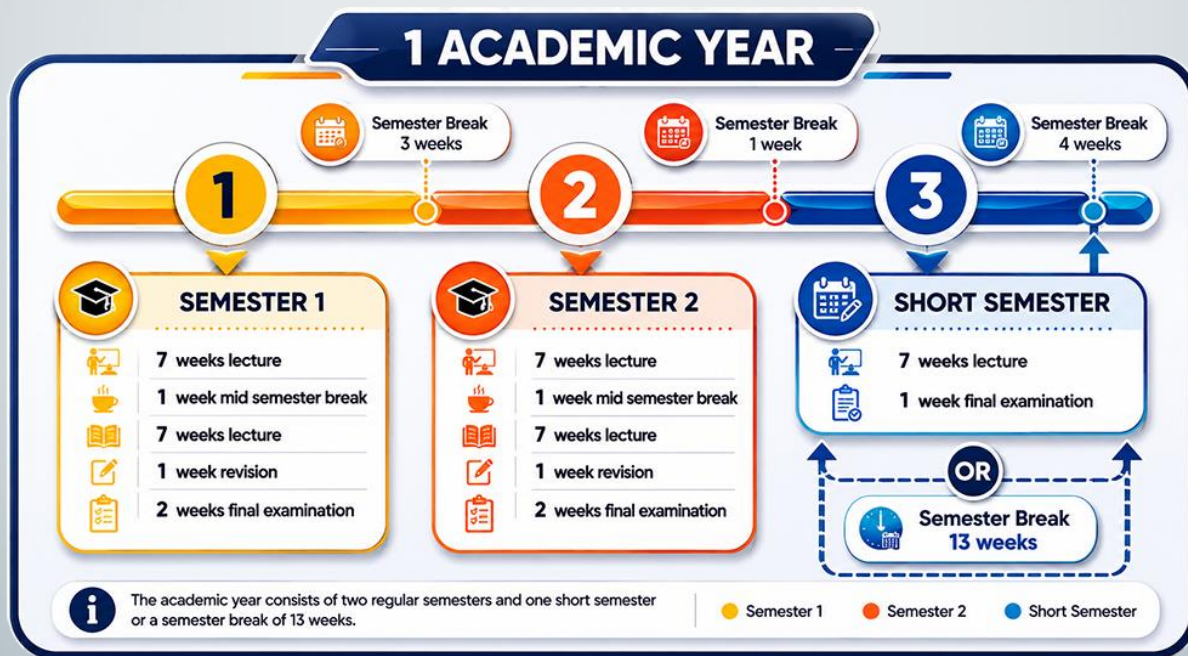


ACADEMIC SYSTEM

The university has implemented its academic system according to semester system. Every academic year comprises of two semesters and in some instances the faculty also offers a special semester which is arranged during the semester break. Specifically, there are 18 weeks per semester, which is divided as follows:

- 7 weeks for the first part of lecture.
- 1 week of mid semester break.
- 7 weeks for the second part of lecture.
- 1 week of revision.
- 2 weeks for final examination.

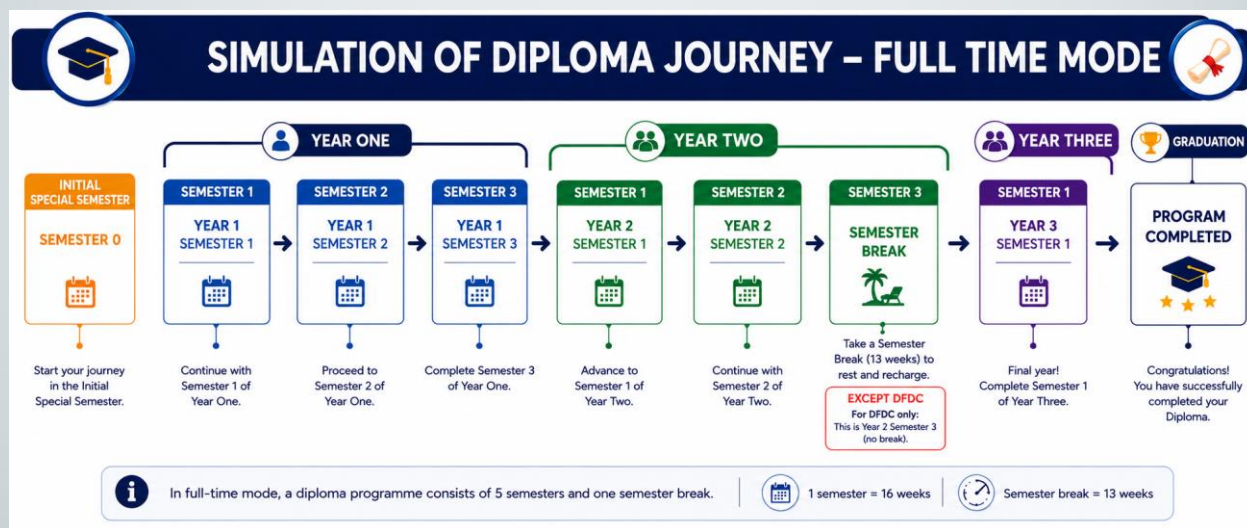
While for the short semester, there are only a total of 8 weeks of implementation, which include 7 weeks of lecture and 1 week of final examination.



Duration of Studies

 Full-time MODE	FULL-TIME	MAXIMUM
	MINIMUM	MAXIMUM
	 5 semesters (2½ years)	 10 semesters (5 years)

 Part-time MODE	PART-TIME	MAXIMUM
	MINIMUM	MAXIMUM
	 8 semesters (4 years)	 16 semesters (8 years)



Grading System

The following shows the grading system adopted by the university.

MARKS	GRADE	POINT VALUE	STATUS
80 – 100	A	4.0	Excellent
75 – 79	A-	3.7	Excellent
70 – 74	B+	3.3	Honours
65 – 69	B	3.0	Honours
60 – 64	B-	2.7	Honours
55 – 59	C+	2.3	Pass
50 – 54	C	2.0	Pass
47 – 49	C-	1.7	Conditional Pass
44 – 46	D+	1.3	Conditional Pass
40 – 43	D	1.0	Conditional Pass
0 – 39	E	0.0	Fail

Academic Achievement

Grade Point Average (GPA)

GPA is average points obtained by students at the end of each semester.

$$\text{Total Grade Point (TGP)} = k_1m_1 + k_2m_2 + \dots + k_nm_n$$

$$\text{Total Calculated Point (TCP)} = k_1 + k_2 + \dots + k_n$$

$$\text{GPA} = \frac{\text{TGP}}{\text{TCP}}$$

where

k_n = credit hour for course n ,

m = grade point obtained for course n ,

n = number of courses registered.

Cumulative Grade Point Average (CGPA)

CGPA refers to cumulative grade point average obtained for all semester studied.

$$\text{CGPA} = \frac{\text{TGP}_1 + \text{TGP}_2 + \dots + \text{TGP}_n}{\text{TCP}_1 + \text{TCP}_2 + \dots + \text{TCP}_n}$$

where

TGP = total grade point earned in semester,

TCP = total calculated point in semester,

n = total semester registered.

Academic Standing

The academic status for each student is determined by the examination results obtained at the end of every semester. The status is categorized as:



1. With the approval of the Senate, a student who obtains **CGPA ≥ 2.00** but **GPA < 1.00** may;
 - i. continue his/her studies with KB; or
 - ii. be instructed to defer his studies to the next semester with KB; or
 - iii. be terminated from his studies with KG.
2. With the approval of the Senate, a student who obtains **$1.70 \leq CGPA < 2.00$** but **GPA < 1.00** may;
 - i. be instructed to defer his/her studies to the next semester with KS; or
 - ii. be terminated from his/her studies with KG.
3. The Academic Standing of a student in the Special Semester shall not be determined. Grades obtained in the Special Semester shall be counted when calculating the CGPA of the subsequent semester. For a student who is due to graduate in the Special Semester, the CGPA will be calculated based on the Repeat or Redeem Course.
4. A student who obtains KS for three (3) consecutive semesters shall be given KG.
5. A student who obtains KG shall be terminated from his/her studies.
6. For students with KS, maximum permissible credit for the upcoming semester is 12 credits.

Dean's List Award

A student who obtains a GPA of 3.50 and above will be awarded a Dean's List Certificate. The list will be published at the University board and webpage.

Graduation Requirement

A student shall only be conferred a Diploma subject to the following requirements:

1. The student must obtain a Good Academic Standing (KB) in his/her final semester.
2. The student must pass all Courses required by the curriculum.
3. Any other requirements set by the University.

Academic Advisory System

Responsibility of Academic Advisor (Penasihat Akademik)

The importance of having an academic advisory system are as follows:

1. The Academic Advisor is required to explain to the students the important information concerning university's policy and procedure, curriculum and syllabus, academic calendar and etc.
2. The Academic Advisor also needs to assess the students' aptitude to ensure credit hours and Courses registered are suitable with their capability.
3. In addition, the Academic Advisor must approve application to add/drop Courses based on student performance.

Responsibility of Student

Students are responsible to consistently meet with their Academic Advisor twice per semester (minimum) to get advice and help in solving any academic problems arise. In general, students are responsible to:

1. meet with the Academic Advisor in the first week of each semester and obtain the general explanation about the Semester System and related issues concerning learning process as well as monitoring students' performance.
2. obtain an assistance from the Academic Advisor in preparing their study plan throughout their study in UTaM, such as Courses to be registered every semester.
3. inform the Faculty's Administration and Academic Advisor concerning their performance and problems.
4. check and verify Courses registered for the examination.
5. seek advice and explanation from their Academic Advisor the effects of registering and dropping Courses.



Diploma in Electrical Engineering (DFDL)

Programme Details

This programme is intended to produce semi-professional graduates who possess strong engineering knowledge based on skills as assistant engineers. Apart from that, this program is a pathway for students with SPM qualification to further their studies to higher level in their respective fields, especially the Electrical and Mechatronics Engineering Bachelor's Programme in UTeM.

Programme Educational Objectives (PEO)

Programme Educational Objectives (PEO) are specific goals describing the expected achievement of graduates in their career and professional life after a few years of graduation. Below are the PEO for the Diploma in Electrical Engineering Programme.

1. Graduates will be Assistant Engineers who are knowledgeable and technically competent in related electrical engineering/electrical engineering technology field, as demonstrated through career progression.
2. Graduates will be Assistant Engineers who are able to communicate professionally with society at large and being ethical and responsible in performing leadership role in an organisation.
3. Graduates will be Assistant Engineers who have vision in developing their self and career through lifelong learning or involve in techno-preneurs sector.

Programme Learning Outcomes (PLO)

Programme Learning Outcomes (PO) are statements describing what students are expected to know and be able to perform or attain by the time of graduation. These are related to the knowledge profile (DK1-DK9) that students acquire throughout the programme. Below is the list of Programme Learning Outcomes for the Diploma in Electrical Engineering Programme. Upon graduation, graduates should be able to:

1. Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide procedures and practices.
2. Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4).
3. Design solutions for well-defi technical problems and assist with the design of systems, components or processes to meet specifi needs with appropriate consideration for public health and safety as well as, cultural, societal, and environmental considerations as required (DK5).
4. Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct stabdard tests and measurements (DK8).
5. Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6).
6. 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 (DK1, DK5, and DK7).
7. 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; (DK9).
8. Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings (DK9).

9. 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.
10. Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.
11. 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; (DK8).

Curriculum Structure

The number of credits required to be awarded a Diploma is 90 credits. This course will take two (2) years and eight (8) months minimum which emphasis on the latest technology and up to date skills. The composition of the credits is as follows:

Diploma in Electrical Engineering Minimum graduating credit – 90		
Component	Component's Code	Credits
University Compulsory Course	W	14
Core Course (Engineering)	P	58
Core Course (Science & Mathematics)	K	12
Elective	P	6
Total Credits		90

Curriculum Structure for Each Semester

Initial Special Semester

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 1112	Foundation English	W	2	
DLHW 2722	Integrity and Anti-Corruption	W	2	
DLHW 2772	Appreciation of Ethics and Civilizations	W	2	
Total Credits			6	

Year One : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDU 1102	Algebra	P	2	
DFDU 1123	Physics	P	3	
DFDL 1101	Basic Electrical Skill	P	1	
DFDL 1133	Electronic Devices	P	3	
DFDL 1113	Digital Electronics	P	3	
DFDL 1103	Electric Circuit I	P	3	
DLHW 2122	English for Effective Communication	W	2	
DKK* 1**1	Co-Curriculum I ¹	W	1	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDU 1112	Calculus	P	2	
DFDL 1163	Instrumentation & Measurement	P	3	
DFDG 1153	Introduction to Mechanical System	P	3	
DFDG 1143	Computer Programming	P	3	
DFDL 1173	Analogue Electronics	P	3	
DFDL 1111	Electrical Workshop	P	1	
DLLW 3132	English for Marketability	W	2	
DKK* 2**1	Co-Curriculum II ¹	W	1	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDG 1152	Safety and Health for Engineers	P	2	
DFDL 1183	Embedded System	P	3	
DTMW 1012	Fundamentals of Entrepreneurial Acculturation	W	2	
Total Credits			7	

Year Two : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDU 2113	Differential Equations	P	3	
DFDL 2143	Power Electronics	P	3	
DFDL 2123	Control System Engineering	P	3	
DFDL 2153	Electrical Machine	P	3	
DFDL 2103	Electric Circuit II	P	3	
DFDL 2133	Automation	P	3	
Total Credits			18	

Year Two : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDU 2102	Engineering Mathematics	P	2	
DFDL 2163	Power System and Distribution	P	3	
DFDU 2134	Diploma Project	P	4	
Elective Course (Choose 2 out of 5 Elective Courses)				
DFDL 2033	Renewable Energy and Application	E	3	
DFDL 2043	Building Maintenance and Management	E	3	
DFDL 2013	Industrial Robotic	E	3	
DFDL 2173	Industrial Power Electronics	E	3	
DFDL 2023	Industrial Process Control	E	3	
Total Credits			15	

Year Three : Semester 1

Course Code	Course Name	Comp Code	Duration (weeks)	Credit	Pre-requisite
DFDU 3148	Industrial Training	P	16	8	
Total Credits				8	

Course Synopsis

UNIVERSITY COMPULSORY (W)

DLLW1112 Foundation English

This course is designed to help students to improve their proficiency in the English language and to communicate effectively in both spoken and written forms. Five main aspects: listening, speaking, reading, writing and grammar are taught in an integrated approach to build confidence among the learners to become efficient speakers of English in their tertiary education.

DLHW 2722 Integrity and Anti-Corruption

The Integrity and Anti-Corruption (KIAR) course aims to introduce students to the practices of integrity and the importance of combating corruption in society and organisations. The focus of the course is on the values of integrity and corruption prevention, as well as the issues, challenges, and problems related to the management of corruption in both society and organisations. Learning activities include group discussions, reporting, and fieldwork within various sectors of society (public sector, private sector, NGOs, politics, and students).

DLHW 2772 Appreciation of Ethics and Civilizations

This course prepares students to appreciate the ethics and civilisation within Malaysia's multi-ethnic society, strengthening their critical and analytical thinking to address increasingly challenging life situations. The course content focuses on the understanding of ethics and civilisation in the Malaysian context. Students will be exposed to the dynamics of ethical and civilisational concepts that have been pivotal in the formation of Malaysia, tracing its historical evolution from the pre-colonial era to the post-colonial period. The development of ethics and civilisation in a diverse society will be discussed to enhance the appreciation of these values towards strengthening national unity and the Malaysian identity. The Malaysian model of civilisation needs to be explored and debated within academic activities, guided by the Federal Constitution as the foundation of integration and a framework for ethics and civilisation. Building national unity is significantly influenced by globalisation and the complex developments in information and communication technology. Therefore, the

appreciation of ethics and civilisation is demonstrated by social responsibility behaviors and is driven at the individual, family, community, society, and national levels. As a result, the societal changes and direct economic development have introduced new challenges in reinforcing the sustainability of ethics and civilisation in Malaysia. High Impact Educational Practices (HIEPS) are applied in the teaching and learning process to deepen the understanding of this course.

DLLW 2122 English for Effective Communication

This course is designed to provide students with the necessary communication skills to communicate effectively. The skills covered are speaking, reading and writing. The elements of grammar are taught to complement the topics covered in this course. The documents covered are product descriptions and manual instructions. Students demonstrate interpersonal skills through speeches and role-play. The elements of problem-based learning (PBL) are especially exercised during the oral presentation of the product and manual descriptions as well as role-play.

DLLW3132 English for Marketability

This course aims to introduce and expose students to the basic tenets of communication specifically the oral and written communication required at the workplace. Students will be provided with the opportunity to produce a reflective writing, resume, job-application letter, e-message and report. They will also be able to participate in an interview, and to discuss and explain information in group discussions. Students will be exposed to situations where they learn to function as individuals and team members by communicating in spoken and written forms using appropriate language in a variety of workplace contexts.

DTMW 1012 Fundamentals of Entrepreneurial Acculturation

This course equips students with the motivation and essential entrepreneurial skills required to succeed in business. Students will gain knowledge of the principles and practices needed to establish, develop, and strengthen a business venture. Teaching, learning, and practical application activities that integrate both theory and practice will help students acquire the competencies necessary before embarking on entrepreneurial endeavors. The course also enables students to build

business networks through business discussions, simulations, and seminars. In addition, students will be exposed to issues related to marketing, strategic management, and risk management. Students will also develop the skills required to prepare cash flow statements and acquire fundamental knowledge in developing and preparing a comprehensive business plan.

CORE COURSE (P)

DFDU 1102 Algebra

This subject serves as a fundamental mathematics course for engineering students. This subject discusses about the functions and graphs including the unit step function, polynomials including partial fractions and numerical interpolation, matrices and systems of linear equations using analytical and numerical techniques, trigonometry and complex numbers. Through this subject, the students are exposed to various techniques in solving mathematical problems and its application in engineering fields.

DFDU 1123 Physics

This course covers mechanics, electricity and magnetism. The topics covers in this course are: Kinematics in One and Two

dimension, Newton's Law of Motion and its Applications, Work and Energy, Conservation of Energy, Linear Momentum and Collisions, Rotational Kinematics and Dynamics, Electric Charge and Electric Field, Capacitance and Dielectrics and Magnetism. Experiments covered Mechanics and Electricity.

DFDL 1101 Basic Electrical Skill

In this workshop, students will be exposed to three basic engineering work; basic electronic measurement, basic microcontroller programming, and basic introduction to electronic components and soldering process. For the first session, student will be introduced to use several measurement equipment such as voltmeter, ammeter, multimeter, oscilloscope, etc for a given circuit, students need to measure the current and voltage at certain load. After that, student will be introduced with basic electronic components knowledge (read, testing and measure) schematic reading and soldering technique. Concentration is given on the safety aspects and quality of works. For the last session, student will be exposed to the basic microcontroller programming which is able to control the circuitry design in real time hardware assembling process (Arduino circuitry) is carried out and will be

assess with a mini project at the end of the session.

DFDL 1133 Electronic Devices

This course will equip students with basic principle of semiconductor and diode operation using appropriate rules and basic laws. It will also covers topics such as BJT, JFET, MOSFET circuits using appropriate rules and laws and their analysis and applications.

DFDL 1113 Digital Electronics

This course will equip students with basic principle, techniques and conventions used in digital electronic circuit design. It will covers topics such as numbering systems and codes, types of basic logic gates, formulation of logic equations and logic circuits schematics, manipulations of logic expression using boolean algebra and DeMorgan' theorem, combinational logic circuits design using SOP, POS and K-Map, basic concept of integrated circuit logic families, MSI logic circuits applications and schematic circuits, and implementations counters and registers using latches and flip flops.

DFDL 1103 Electric Circuit I

This subject starts with refresh the student on basics circuit law's using Ohm's law and

Kirchhoff's Law. which will cover the active and passive elements, resistive circuit. The student also learns the analytical methods namely mesh and nodal analysis. Then apply Thevenin's and Norton's Theorems, Superposition Theorem and maximum power transfer in circuit analysis. Power in the electrical circuit and maximum power transfers. Basic concepts to two-port network and also introduce to PSpice for circuit's analysis. The application of the method will be focusing only on dc circuit analysis.

DFDU 1112 Calculus

This subject enchances two main parts in Calculus which consists of differential and integral which will be solved using analytical and numerical techniques. This subject serves to give students good understanding knowledge the basic concept of derivative and integration in solving application related to mathematics and engineering problems.

DFDL 1163 Instrumentation & Measurement

This subject discusses about units and dimensions, standards, errors, static characteristic, noise and calibration in measurement. It covers most on the measurement devices such as

galvanometers, ammeters, voltmeters, AC/DC meters, sensors, transducers, signal conditioning as well as bridges. It also introduces the principle of data acquisition system used in instrumentation.

DFDG 1153 Introduction to Mechanical System

Introduction to basic concepts in static and mechanics as a study of physical sciences, system of units, scalars and vectors, free body diagram, various types of structures, stress, strain, principles of dynamics based on kinetic and kinematics and basic concepts of thermodynamics.

DFDG 1143 Computer Programming

This course covers the introductory topics in programming using C++ language. It includes the introduction to computers and programming, the fundamentals of programming, problem solving and software development. Data types and operators, selection, repetition, function, array, file, structured data and pointer are among the topics covered in the course.

DFDL 1173 Analogue Electronics

This subject serves as an electronic fundamental course for engineering students. The topics that will be covered including the Power Amplifier, Operational

Amplifier, Active Filter, Voltage Regulator, and Feedback and Oscillator. Introduction to the use of P-Spice and Proteus simulation software for circuit designing as well as hardware experiments during laboratory will be implemented.

DFDL 1111 Electrical Workshop

This workshop will expose student to relay control circuit, and domestic wiring installation. Concentration is given on the safety aspects and quality of works. Then the students also will be exposed the basic engineering software AutoCAD where to the 2D basic engineering drawing in which involve creating, editing, plotting and electrical services system.

DFDG 1152 Safety and Health for Engineers

The primary objective of this course is to instill in students the awareness of and ability to engage in lifelong learning. Students will be exposed to topics including Occupational Safety and Health, industrial safety, quality management concept and various quality tools, as well as knowledge of contemporary safety and health issues in engineering-related disciplines. In addition, the student will present a case study on a pre-determined safety and health topic based on related assigned building.

DFDL 1183 Embeded System

This course is about hardware and microprocessor handling, type of microprocessor systems, system handler and timing diagrams. The course covers the concept of microprocessor software architecture, programming, assembly language and basic instruction, data transferring instruction, program control and subroutine, arithmetic and logic operations. It touches most on programming techniques, designing a microcomputer system, interfaces with memory and I/O devices. Students will experience PBL approach in this course where a PO-PBL will be introduced to the student.

DFDU 2113 Differential Equations

This course consists of 5 chapters : First order linear differential equations, Second order linear differential equations with constants coefficients, Laplace transform, Fourier series and Partial Differential Equations. The syllabuses are developed based on these three different stages which are exposing the learner's on the fundamental concept of differential equation, various techniques to solve differential equation and lastly, apply the various solving techniques to the learner's engineering problem.

DFDL 2143 Power Electronics

This course is about the basic principles of power electronics, semiconductor power switches, single and three-phase inverter, the application of semiconductor devices in power electronics converters such as AC to DC, AC to AC, DC to DC and DC to AC converters, circuits as DC drives, AC drives and snubbers.

DFDL 2123 Control System Engineering

This course will discuss about the concepts in control system; open and closed loop system, transfer function, signal flow graphs, feedback control system, modeling for electrical and mechanical systems, analysis in time and frequency domain responses and also stability in time and frequency domain.

DFDL 2153 Electrical Machine

Introduction to DC and AC type of electrical machines which cover physical construction, equivalent electrical circuit diagrams and motor starters methods as well. The machine performances like torque, speed and efficiency are investigated. The energy efficiency of machine according to the standard will also be covered.

DFDL 2103 Electric Circuit II

This course will cover the transient analysis for first order and second order electric circuits. Then, the students will be exposed to the principle of AC voltage and current generations, RMS, average value and RLC circuits analysis. Furthermore, the basic concept and principles to conduct Nodal and Mesh analysis, Thevenin's, Norton's and Superposition Theorems on single phase AC system will be covered in this course. The course also cover AC Power Analysis for Single Phase Circuit and calculation on power factor correction.

DFDL 2133 Automation

This course will introduce a fundamental of the automation in manufacturing sector, their components such as actuators, sensors as well linear and rotary transportation devices. It will also covers on programmable logic controller (PLC) as the main controller including its definition, main hard components, PLC programming languages, interfacing PLC with computers. At the end of this course, students will able to solve automation problems and capable to integrate PLC hardware and software with their components.

DFDU 2102 Engineering Mathematics

This subject consists of three chapters: Multivariable Functions, Double Integral and Vector-valued Functions. The syllabus is extended from subject Calculus which emphasizing the concepts of the functions with several variables, double integrals of functions in Cartesian and polar coordinates system and also vector-valued function.

DFDL 2163 Power System and Distribution

The purpose of this subject is to introduce students with principle and fundamental on power system network configurations (i.e., network basic concept, short line analysis, and per-unit system), industrial and commercial building wiring (i.e., cables and circuit breaker selection, switchboard and distribution board). This course will cover the procedures on basic design, safety, erect protection relays, inspection, testing and commissioning of an electrical installation. The experimental section will cover the working procedures of 3-phase industrial wiring system and also construction of a basic motor starter circuit (D.O.L/Forward-Reverse/Star-Delta).

DFDU 2134 Diploma Project

This subject gives students an opportunity to practice the knowledge that they have

learnt. At the end of semester, students are required to present their project achievement in oral presentation and submit a comprehensive project report. Student's performance will be evaluated base on project achievement and project report.

DFDU 3148 Industrial Training

All Diploma students are required to undergo industrial training as part of their curriculum to complete their two and half (2 1/2) years course after semester 4 of studies for a 16-weeks period of training at respective industrial companies. It is compulsory for all students to undergo the Industrial Training Programme. In general, the aim of industrial training are to give exposure, experience and professional skills to various aspects of engineering discipline, in particular in electrical engineering related industries. The students are also expected to be familiarized with efficient, accountable and ethical conduct as they will be supervised directly under the company's personnel as well as supervisors from the faculty. Apart from that, the assessment will be made by the appointed faculty supervisors & the industry supervisors. A PO survey is also embedded inside the assessment form by the industry supervisors. There will also be a survey by

the students prior to completion of their training. After completing the industrial training, students have to submit a formal report following the faculty format. Evaluation will be based on faculty supervisor report, industrial supervisor report and student logbook toward grading whether pass or fail.

ELECTIVE (E)

DFDL 2033 Renewable Energy and Application

The subject intends to expose to the students the most recent development on the sustainable electrical resources. This subject also introduces the students various form of sustainable energy resources and their connection to the electrical network. The students also exposed to different types of photovoltaic materials, characteristics and the design procedure to create a photovoltaic system. In addition, there will be a brief intro to the other sustainable energy applications such as wind turbine, hydro, biomass, etc.

DFDL 2043 Building Maintenance and Management

This subject covers the concept of building services and systems for mechanical, electrical, plumbing, building floor plans and

building regulations, by-laws and code of practice. This includes communication lines, escalators and lifts, fire detection and protection system, water drainage and plumbing. The students are also exposed to energy conservation and energy efficiency for environmental protection. Finally the students will be introduced to concept of the lightning protection, low voltage (LV) systems, distribution boards and switchgear, heating, ventilation and air conditioning (HVAC), security and alarm systems.

DFDL 2013 Industrial Robotic

Introduction to robotics, classification of robots, basic components of robot systems, basic concepts of kinematics and dynamics, mechanical structure of robot systems, robot drives and motion control system using stepper motor, servo motor, servo amplifier and pneumatics, sensory devices such as position, force and torque, basic robot programming and industrial robot applications. Experiments will include robot programming in an industrial application setting.

DFDL 2173 Industrial Power Electronics

This subject will discuss the principles of power generation, power application, and power quality improvement by means of

power electronics devices. The basic design and operation of power supply and gate drive will be reviewed at glance. Subsequently, students will be given fundamental knowledge on how to design common power electronics system used in industrial applications. The basic operation and designed of switched mode power supply (SMPS), power electronics in solar applications, high voltage direct current (HVDC), flexible AC Transmission Systems (FACTS), electric/hybrid vehicles and active filter will be exposed to the students.

DFDL 2023 Industrial Process Control

This course intends to expose to the students the implementation of control system engineering in industrial processess. This includes the concept of process control system and its dynamic behaviour. The basic analog controller such as P, PI and PID controller and advanced control structure will be reviewed. Subsequently, students will be given fundamental knowledge on method of tuning and its performance criteria. The basic operation of Final Control Elements and Transducers will be exposed to the students.

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DFDR

DIPLOMA IN
ELECTRONIC ENGINEERING

Diploma in Electronic Engineering (DFDR)

Programme Details

The Diploma in Electronic Engineering (DFDR) program is designed to equip students with the essential knowledge and practical skills necessary for a successful career in the electronic engineering industry. The curriculum is carefully structured to integrate both theoretical and hands-on learning experiences, fostering intellectual development, practical skills, and soft skills. The program outcomes (PO) emphasize a balance between technical expertise, problem-solving abilities, and professional attributes.

Programme Educational Objectives (PEO)

The Diploma in Electronic Engineering (DFDR) programme aims to produce graduates who:

1. Work as engineering technicians and/or able to assist in providing creative and innovative solutions in electronics engineering problems.
2. Are able to display exemplary interpersonal, entrepreneurship and social skills as well as upholding high ethical conduct.
3. Further studies at higher level and/or engage in life-long learning activities for professional development.

Programme Learning Outcomes (PLO)

The aim of the Diploma in Electronic Engineering programme is to produce students with the following characteristics:

1. Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices
2. Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4).

3. 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 (DK5).
4. Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8).
5. Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6).
6. Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems (DK1, DK5, and DK7).
7. 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 (DK9).
8. Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings (DK9).
9. 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.
10. Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.
11. 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 (DK8).

Curriculum Structure

Number of credit hours regarding to course component is represented in the following table.

Diploma in Electronic Engineering Minimum graduating credit – 90		
Component	Component's Code	Credits
University Compulsory	W	14
Course Core	P	62
Industrial Training	P	8
Elective	E	6
Total Credits		90

Curriculum Structure for Each Semester

Initial Special Semester

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 1112	Foundation English	W	2	
DLHW 2722	Integrity and Anti-Corruption	W	2	
DLHW 2772	Appreciation of Ethics and Civilizations	W	2	
Total Credits			6	

Year One : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 1*1	Co-Curriculum I ¹	W	1	
DFDU 1202	Algebra	P	2	
DFDU 1212	Calculus	P	2	
DFDU 1223	Physic Fundamentals	P	3	
DFDR 1023	Electrical Principles	P	3	
DFDG 1283	Engineering Drawing	P	3	
DFDR 1233	Electronic Instrumentations	P	3	
Total Credits			17	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 2**1	Co-Curriculum II ¹	W	1	
DFDU 1213	Differential Equations	P	3	
DFDR 1253	Electronic Principles	P	3	
DFDR 1263	Electrical Circuits	P	3	
DFDR 1273	Logic Circuits	P	3	
DFDG 1243	Computer Programming	P	3	
DFDR 1222	Electronic Workshop & Domestic Wiring	P	2	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DTMW 1012	Fundamentals of Entrepreneurial Acculturation	W	2	
DFDR 1232	PCB Design & Fabrication Workshop	P	2	
DFDG 1252	Safety and Health in Engineering	P	2	
Total Credits			6	

Year Two : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 2122	English for Effective Communication	W	2	
DFDU 2203	Engineering Statistics	P	3	
DFDR 2213	Electronics	P	3	
DFDR 2223	Signal and Network	P	3	
DFDR 2233	Digital Systems	P	3	
DFDR 2243	Microcontroller	P	3	
Total Credits			17	

Year Two : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 3132	English for Marketability	W	2	
DFDR 2253	Communication Principles	P	3	
DFDR 2263	Control Principles	P	3	
DFDU 2234	Diploma Project	P	4	
Elective Course (Choose 2 out of 4 Elective Courses)				
DFDR 2013	Database and Cloud System	E	3	
DFDR 2023	Computer Network	E	3	
DFDR 2033	Telecommunication Engineering	E	3	
DFDR 2043	Industrial Automation	E	3	
Total Credits			18	

Year Three : Semester 1

Course Code	Course Name	Comp Code	Duration (weeks)	Credit	Pre-requisite
DFDU 3248	Industrial Training	P	16	8	
Total Credits				8	

Course Synopsis

UNIVERSITY COMPULSORY (W)

DLLW1112 Foundation English

This course is designed to help students to improve their proficiency in the English language and to communicate effectively in both spoken and written forms. Five main aspects: listening, speaking, reading, writing and grammar are taught in an integrated approach to build confidence among the learners to become efficient speakers of English in their tertiary education.

DLHW 2722 Integrity and Anti-Corruption

The Integrity and Anti-Corruption (KIAR) course aims to introduce students to the practices of integrity and the importance of combating corruption in society and organisations. The focus of the course is on the values of integrity and corruption prevention, as well as the issues, challenges, and problems related to the management of corruption in both society and organisations. Learning activities include group discussions, reporting, and fieldwork within various sectors of society (public sector, private sector, NGOs, politics, and students).

DLHW 2772 Appreciation of Ethics and Civilizations

This course prepares students to appreciate the ethics and civilisation within Malaysia's multi-ethnic society, strengthening their critical and analytical thinking to address increasingly challenging life situations. The course content focuses on the understanding of ethics and civilisation in the Malaysian context. Students will be exposed to the dynamics of ethical and civilisational concepts that have been pivotal in the formation of Malaysia, tracing its historical evolution from the pre-colonial era to the post-colonial period. The development of ethics and civilisation in a diverse society will be discussed to enhance the appreciation of these values towards strengthening national unity and the Malaysian identity. The Malaysian model of civilisation needs to be explored and debated within academic activities, guided by the Federal Constitution as the foundation of integration and a framework for ethics and civilisation. Building national unity is significantly influenced by globalisation and the complex developments in information and communication technology. Therefore, the

appreciation of ethics and civilisation is demonstrated by social responsibility behaviors and is driven at the individual, family, community, society, and national levels. As a result, the societal changes and direct economic development have introduced new challenges in reinforcing the sustainability of ethics and civilisation in Malaysia. High Impact Educational Practices (HIEPS) are applied in the teaching and learning process to deepen the understanding of this course.

DTMW 1012 Fundamentals of Entrepreneurial Acculturation

This course equips students with the motivation and essential entrepreneurial skills required to succeed in business. Students will gain knowledge of the principles and practices needed to establish, develop, and strengthen a business venture. Teaching, learning, and practical application activities that integrate both theory and practice will help students acquire the competencies necessary before embarking on entrepreneurial endeavors. The course also enables students to build business networks through business discussions, simulations, and seminars. In addition, students will be exposed to issues related to marketing, strategic management, and risk management.

Students will also develop the skills required to prepare cash flow statements and acquire fundamental knowledge in developing and preparing a comprehensive business plan.

DLLW 2122 English for Effective Communication

This course is designed to provide students with the necessary communication skills to communicate effectively. The skills covered are speaking, reading and writing. The elements of grammar are taught to complement the topics covered in this course. The documents covered are product descriptions and manual instructions. Students demonstrate interpersonal skills through speeches and role-play. The elements of problem-based learning (PBL) are especially exercised during the oral presentation of the product and manual descriptions as well as role-play.

DLLW 3132 English for Marketability

This course aims to introduce and expose students to the basic tenets of communication specifically the oral and written communication required at the workplace. Students will be provided with the opportunity to produce a reflective writing, resume, job-application letter, e-message and report. They will also be able to

participate in an interview, and to discuss and explain information in group discussions. Students will be exposed to situations where they learn to function as individuals and team members by communicating in spoken and written forms using appropriate language in a variety of workplace contexts.

CORE COURSE (P)

DFDU 1202 Algebra

This course serves as a fundamental mathematics course for engineering students. This course will discuss about the fundamental concepts of functions and graphs, polynomials, matrices, nonlinear equation, trigonometry and complex number. Through this course, the students will be exposed to various techniques in solving mathematics problems and its application in physical and engineering fields.

DFDU 1212 Calculus

This course will discuss limit and its properties, differentiation including Chain Rule, Differentiation of Trigonometric Function, Logarithmic Function, Exponential Function, Implicit Differentiation, Parametric Differentiation, Application of Differentiation, Forward, Backward and Central Differencing

of First and Second Derivatives for Normal and High Accuracy. It then continued with the topic of integration, exponential, logarithmic and inverse functions. This course serves to give the students a good understanding of the basic concept of derivative and integration in solving application related to science, mathematics and engineering problems.

DFDU 1223 Physic Fundamentals

The topics covered in this course are Mechanics: Physical Quantities and Measurements, Kinematics of Linear Motion, Circular Motion, Force and Newton's laws, Momentum and Impulse, Work, Energy and Power, Circular Motion, Gravitation, Rotation of A Rigid Body, Moment of Inertia. Wave: Simple Harmonic Motion (SHM), Mechanical Waves and Sound Wave. Properties of Matter: Density and Specific Gravity, Hydrostatics, Elasticity, Viscosity. Thermodynamics: Temperature and Heat Transfer, Theory Kinetic of Gases. Light: Reflection and Refraction of Light.

DFDR 1023 Electrical Principles

This course discusses the basic principles of electrics and electronics such as introduction to electrical elements, concept of voltage and current, and Ohm's and Kirchoff's Laws. Students will learn to analyse

series and parallel circuits for both direct current (DC) and alternating current (AC). Students will also learn to analyse series and parallel capacitance and inductance circuits in DC and AC. The course will also cover magnetic and electromagnetism theories, devices and laws such as Lenz's and Faraday's law.

DFDG 1283 Engineering Drawing

The course will provide students with an understanding of the importance of engineering drawing as a communication tool among engineers. Student will be exposed to the engineering graphics fundamentals of manual sketching, geometric dimensioning and tolerancing, graphic projections, sectioning and engineering drawings. Students will develop visualization skills by constructing technical drawings using manual sketches and computer aided design (CAD) software. The course consists of both lecture and practical session where students will be guided in presenting and interpreting engineering drawings correctly.

DFDR 1233 Electronic Instrumentations

The course discusses about units and dimensions, standards, errors, static characteristics, noise and calibration in

measurement. It covers most on the measurement devices such as galvanometers, ammeters, voltmeters and wattmeter as well as Wheatstone Bridge, Kelvin Bridge, bridge-controlled circuit, oscilloscope and function generator. It also introduces traducers for instrumentation application.

DFDU 1213 Differential Equations

This course will discuss about the classification of differential equations, first order ordinary differential equations, second order ordinary differential equations, Laplace transform, Fourier series and partial differential equations. The syllabuses are developed to expose students on the fundamental concept of differential equations.

DFDR 1253 Electronic Principles

This course discusses about the structure and material of semiconductor, the diode characteristics and applications such as half-wave & full-wave rectifiers, clamping and clipping function and Zener diode. It then followed by DC biasing transistor of BJT (common-base, common-emitter & common collector) and FET transistor (DC biasing; common-source, common-drain & commongate). The application of BJT and IC

in voltage regulator circuits is also discussed at the end of this course

DFDR 1263 Electrical Circuits

The course begins with nodal and mesh analysis of DC circuit analysis. The course will cover essential circuit theorems such as source transformation, superposition theorem, Thevenin's theorem, Norton's theorem, maximum power transfer, delta-to-wye and wye-to-delta conversions. Students will also be exposed to first-order circuits such as source-free RC and RL circuits. Apart from DC circuit analysis, this course will also introduce the concept of sinusoids and phasors in AC circuits. It then continued by two-port networks application, transformer's concept and basic principles of power system.

DFDR 1273 Logic Circuits

This course starts with the introduction to digital concepts such as the digital quantity, digital waveform, digital and logic circuits, and parallel and serial transmission. Then, students will be exposed to number systems and operations that consists of number conversion, binary codes, binary mathematical operation, signed numbers representation, one's and two's complement and two's complement arithmetic. The course will also cover combinational logic

gates that involve Boolean constants and variables, truth table, Boolean theorems, Demorgan's theorems, and parity generator and checker. This is followed by logic expression and minimization for simplifying logic circuits, designing combinational logic circuits and Karnaugh Map method simplifications. Students will also learn combinational logic circuits and applications such as logic gates, adders, comparator, decoder and encoder. The last topic will introduce students to integrated circuit technology such as CMOS and TTL circuits.

DFDG 1243 Computer Programming

The course begins with an introduction to computer programming. It will then focus on C++ programming language, where students will learn basic structure, identifiers and keywords, data type, variable, constant, operators, and input and output operations. The course will cover essential topics that will enable the students to have a good grasp in computer programming such as control technique, functions, arrays, derived types and pointers.

DFDR 1222 Electronic Workshop & Domestic Wiring

This course begin with an introduction to Occupational Safety and Health (OSH);

introduction to Occupational Safety and Health Administration (OSHA), safety measures at workplace, and safety and health practices in workshop and laboratory sessions (electrical hazards). Next, students are exposed to measuring and testing methods of electronic components; structure, characteristic, unit and symbol of resistor, diode, capacitor, transistor, inductor, transformer, IC, fuse and relay in electronic circuits. Students will also learn about troubleshooting techniques and involve in workshop on active and passive components. The workshop will also cover application of electronic equipment such as multimeter, function and signal generators, AC/DC power supply and oscilloscope. Students will also be exposed to the use of several types of electronic equipment in Multisim software that are often used to measure the performance of electronic circuits. Next, students will be introduced to the electricity supply and distribution system in Malaysia, and distribution fuse box and electrical wiring accessories; sequential control circuit, distribution fuse box components, wiring accessories, installation and wiring of distribution fuse box, functional testing of protection devices and wiring accessories. In addition, students will also learn about electrical wiring and grounding systems; electrical wiring types and the

importance of the grounding system. In the next topics, student will practice single-phase domestic wiring system and circuit testing. Finally in this course, students will also explore basic three-phase wiring system.

DFDR 1232 PCB Design & Fabrication Workshop

This workshop starts with soldering and desoldering technique, IPC standard and Safety and Health of handling electronic assemblies. The students are then introduced to PCB design using a design software to design circuit and layout design. Students will also be exposed to PCB fabrication, drilling process, components installation and troubleshooting

DFDG 1252 Safety and Health in Engineering

This safety and health subject link on aspects of safety in work to ensure that the workplace and the stakeholders involved are protected from dangers such as accidents and disasters. Students will be exposed to topics related to safety and health issues in related to engineering technician fields. The professional ethics and conduct will also be introduced to the students. PBL, project and presentation of case study by the student with a given topic

of safety and health will also be included, to ensure students are able to relate what is taught in class to issues found in the industry.

DFDU 2203 Engineering Statistics

The outcome of this course is to deliver statistical techniques and tools for data analysis. The course begins with data description. Then, students will be exposed to normal and sampling distributions, estimation, and hypothesis testing for one and two populations. In addition, one-way ANOVA and simple linear regression will be taught in this course. Apart from that, students will learn non-parametric statistics. Finally, students will apply their statistical knowledge with a software application to ensure that they are well-prepared for the industry.

DFDR 2213 Electronics

The course begins with an introduction to amplifier, small signal BJT transistor amplifiers and FET transistor amplifiers. The course will also cover the basic operation, the characteristics of an operational amplifier and the application of operational amplifier in voltage regulator and active filter circuit. The students will also be exposed to design active filter circuit using operation amplifier.

DFDR 2223 Signal and Network

The course starts with signal and system definition, continuous and discrete signal, signal operations, signal characteristics and types of signals. Next, students will be exposed to Fourier series, phase and amplitude spectrum and Parseval theorem. Students will also learn about Fourier transform, step and delta function, and energy and power spectrum. In addition, Laplace Transform and inverse Laplace Transform characteristics will also be explored to enable students to do circuit analysis using Laplace Transform.

DFDR 2233 Digital Systems

In this course, students will be exposed to several topic such as the operation of basic and gated latches, edge triggered and master-slave flip-flops (S-R, J-K, T and D flip-flops), designing asynchronous and synchronous binary counter, finite state machine, design of sequential circuit, shift registers functions and applications.

DFDR 2243 Microcontroller

The outcome of this course is to deliver the fundamental of microcontroller and introduce the student with current microcontroller technology and application. This course begins with the introduction to the fundamental concept of the computer

system – where the students are expected to clearly define the architecture of microcontroller. Then the course continues with brief explanation on the different components in microcontroller system – memory organization, registers, oscillators, timer and ports. Apart of that, the concept of pipelining, clock cycle, instruction cycle, interrupts are also included. Additionally, the students will be introduced with the microcontroller programming concepts by C/C++ language. Finally, the course also embedded with the project where the students are expected to develop real application with Internet-of-Things concept using the microcontroller development board. The course is critical in industry as most of automation system/machine usually controlled by microcontroller or embedded processing system.

DFDR 2253 Communication Principles

This course begins with the introduction to telecommunication, where students will learn about transmission modes, power measurements, electromagnetic frequency spectrum, bandwidth and information capacity. Next, students will be exposed to amplitude modulation (AM), frequency modulation (FM), digital modulation and noise in telecommunication systems. The

course will also cover transmission line, VSWR and transmission lines impedance matching.

DFDR 2263 Control Principles

This course will discuss about the concepts in control system; open and closed loop system; transfer function; feedback control system; modeling for electrical system; reduction of multiple subsystem using block diagram, method analysis in time and frequency domain responses and also stability in time and frequency domain.

DFDU 2234 Diploma Project

This course allows students to investigate and implement project based on hardware or combination of hardware and software. Student should perform literature review in order to produce a project proposal. This course emphasis on design and development of solutions for well-defined problem using engineering techniques and tools. Various processes involve in this course such as circuit construction, simulation of circuit design, modelling, producing printed circuit board, component assembly, soldering, troubleshooting and testing. At the end of the semester, students are required to submit a project report in a given format and deliver a presentation.

DFDU 3248 Industrial Training

All diploma students will be placed in appropriate local industries or government corporations for 16 weeks normally in the final semester of their third year of study. Students will be exposed to real life working environment relevant to their field of study

ELECTIVE (E)

DFDR 2013 Database and Cloud System

The outcome of this course is to introduce the student to the fundamental concept of database and cloud systems. On the database topic, the course is focusing on NoSQL database in which based on MongoDB database system. The course will cover both using the basic CRUD and aggregate operation. The course is designed, so the students are able to implement database operation using graphical use interface (GUI) and command line instruction. Apart of that, the students will be introduced to the fundamental concept of database modelling and database relationships. Besides, the course teaches students on how to create simple API (either using JAVA/Python) to interface with the database. For the cloud systems, it will introduces important concepts including network and cloud architecture, different

types of network topology, cloud computing and cloud security. The course is critical in nowadays as in big data era, most industry rely on the digital data for its business growth.

DFDR 2023 Computer Network

This course will discuss about the process and protocols involved in computer networking and system based on layers in TCP/IP protocol. The course will start with the introduction to the computer network, how a packet actually travels over the network and peripherals involved in this process. Then, the course will delve deeper into the mechanism involve in each layer of the TCP/IP protocols such as the Ethernet, IPv4, TCP, UDP and many more. This course will equip the students with knowledge of computer networking that will help them to pursue advanced studies in computer engineering field.

DFDR 2033 Telecommunication Engineering

Six important topics in telecommunication engineering will be covered in this course. The course begins with Satellite System, where students will learn about Kepler's Law, satellite orbits, and frequency allocation. Optical Fiber Communications will cover single and multimode fiber, light

propagation, and light sources and detectors. Students will learn about different types of antennas and waveguides, as well as basic antenna operation, in Antenna and Waveguide. Telephony System will cover telephone set, switching system, and telephone network functions. Broadcasting will cover the technologies that form the basis of TV broadcasting and the Digital Broadcasting System (DAB and DVB). Finally, Wireless Network will concentrate on wireless local area network technologies.

DFDR 2043 Industrial Automation

This course will discuss the fundamental of automation in the first chapter that covers basic concepts and terminology, impact of automation system in manufacturing, and advantages & disadvantages of automation

in manufacturing. The second chapter will cover Programmable Logic Controller (PLC) which consists of PLC architecture and operation, ladder diagram and mnemonics, PLC timer and counter, and the industrial applications. Construction and principle of operation of sensors (position and proximity sensors) and pneumatic (valve and actuator, solenoid and electrical ladder diagram) and hydraulic will be introduced in the third chapter. Subsequently, Industrial Robotics which consists of anatomy and related attributes, robot control systems, and applications of robots are covered in the fourth chapter. Finally, concepts of Flexible Manufacturing System 200 (FMS200), the function of each station and an overall system, will be covered in the final chapter of this course.

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Diploma in Mechanical Engineering (DFDK)

Programme Details

Diploma in Mechanical Engineering is designed to acquire high technical knowledge and skills as well as good attitude of graduates in-line with Malaysia Education Blueprint 2015-2025. The objective is to provide students with industry related engineering knowledge, scientific skills, computing and analysis, mathematical techniques, a sound knowledge of English to communicate in the field and ability to apply problem-solving techniques.

Programme Educational Objectives (PEO)

The programme educational objectives of the Diploma in Mechanical Engineering are:

1. Graduates who are competent and adaptable in multi-industries by practicing the knowledge in mechanical engineering that relevant to professional engineering practice.
2. Graduates who will pursue bachelor degree studies or others professional certificate.
3. Graduates who will be leader at note-worthy level and provide solutions that benefited the respective organization, society and nation.

Programme Learning Outcomes (PLO)

The Programme Learning Outcomes are in line and consist of all the criteria (11 outcomes) as stated in the Engineering Technician Education Programme Accreditation Standard (ETAC) 2024. The Programme Learning Outcomes are exhibited at many areas surrounding the faculty, such as at waiting room, meeting room, entrance lobby and laboratory areas. The 11 Programme Learning Outcomes for diploma programme are:

1. Apply knowledge of applied mathematics, applied science, computing and mechanical engineering fundamentals and specialisation to wide practical procedures and practices
2. Identify and analyse well-defined mechanical engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.

3. 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.
4. Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.
5. Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined mechanical engineering problems, with an awareness of the limitations.
6. Consider sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined mechanical engineering problems.
7. Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws while demonstrating an understanding of the importance of diversity and inclusion.
8. Function effectively as an individual, and as a member in diverse and inclusive teams in multidisciplinary, face-to-face, remote and distributed settings.
9. Communicate effectively and inclusively on well-defined mechanical 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.
10. Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.
11. Recognize the need for, and have the ability for an independent and life-long learning and critical thinking in the face of specialised technical knowledge.

Curriculum Structure

Students are required to complete a minimum of 91 credits to graduate with a Diploma in Mechanical Engineering. The programme components are as follows:

Diploma in Mechanical Engineering Minimum graduating credit - 91		
Component	Component's Code	Credits
University Compulsory Course	W	14
Common Core Course	P	77
Total Credits		91

Curriculum Structure for Each Semester

Initial Special Semester

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 1112	Foundation English	W	2	
DLHW 2722	Integrity and Anti-Corruption	W	2	
DLHW 2772	Appreciation of Ethics and Civilizations	W	2	
Total Credits			6	

Year One : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 2122	English for Effective Communication	W	2	
DKK* 1**1	Co-Curriculum I ¹	W	1	
DFDU 1303	Engineering Mathematics	P	3	
DFDU 1323	Fundamental Physics	P	3	
DFDU 1333	Chemistry	P	3	
DFDK 1393	Materials Science	P	3	
DFDG 1353	Electrical & Electronic Principles	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDK 1322	Experimental Method	P	2	
DKK* 2**1	Co-Curriculum II ¹	W	1	
DFDU 1313	Differential Equations	P	3	
DFDG 1343	Computer Programming	P	3	
DFDG 1373	Statics	P	3	
DFDG 1363	Manufacturing Process	P	3	
DFDK 1302	Technology And Engineering Workshop Practice I	P	2	
Total Credits			17	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DTMW 1012	Fundamentals of Entrepreneurial Acculturation	W	2	
DFDG 1383	Engineering Graphics	P	3	
DFDK 1312	Technology And Engineering Workshop Practice II	P	2	
Total Credits			7	

Year Two : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDU 2303	Statistics	P	3	
DFDK 2323	Mechanical Design	P	3	
DFDK 2333	Hydraulic and Pneumatics	P	3	
DFDG 2343	Electronic & Microprocessor Fundamental	P	3	
DFDK 2313	Dynamics	P	3	
DFDU 2322	Diploma Project I	P	2	
Total Credits			17	

Year Two : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 3132	English For Marketability	W	2	
DFDK 2353	Thermodynamics	P	3	
DFDK 2363	Fluid Mechanics	P	3	
DFDK 2373	Mechanics of Machines	P	3	
DFDK 2383	Solid Mechanics	P	3	
DFDG 2352	Occupational Safety and Health	P	2	
DFDU 2332	Diploma Project II	P	2	DFDU 2322
Total Credits			18	

Year Three : Semester 1

Course Code	Course Name	Comp Code	Duration (weeks)	Credit	Pre-requisite
DFDU 3348	Industrial Training	P	16	8	
Total Credits				8	

Course Synopsis

UNIVERSITY COMPULSORY (W)

DLLW1112 Foundation English

This course is designed to help students to improve their proficiency in the English language and to communicate effectively in both spoken and written forms. Five main aspects: listening, speaking, reading, writing and grammar are taught in an integrated approach to build confidence among the learners to become efficient speakers of English in their tertiary education.

DLHW 2722 Integrity and Anti-Corruption

The Integrity and Anti-Corruption (KIAR) course aims to introduce students to the practices of integrity and the importance of combating corruption in society and organisations. The focus of the course is on the values of integrity and corruption prevention, as well as the issues, challenges, and problems related to the management of corruption in both society and organisations. Learning activities include group discussions, reporting, and fieldwork within various sectors of society (public sector, private sector, NGOs, politics, and students).

DLHW 2772 Appreciation of Ethics and Civilizations

This course prepares students to appreciate the ethics and civilisation within Malaysia's multi-ethnic society, strengthening their critical and analytical thinking to address increasingly challenging life situations. The course content focuses on the understanding of ethics and civilisation in the Malaysian context. Students will be exposed to the dynamics of ethical and civilisational concepts that have been pivotal in the formation of Malaysia, tracing its historical evolution from the pre-colonial era to the post-colonial period. The development of ethics and civilisation in a diverse society will be discussed to enhance the appreciation of these values towards strengthening national unity and the Malaysian identity. The Malaysian model of civilisation needs to be explored and debated within academic activities, guided by the Federal Constitution as the foundation of integration and a framework for ethics and civilisation. Building national unity is significantly influenced by globalisation and the complex developments in information and communication technology. Therefore, the

appreciation of ethics and civilisation is demonstrated by social responsibility behaviors and is driven at the individual, family, community, society, and national levels. As a result, the societal changes and direct economic development have introduced new challenges in reinforcing the sustainability of ethics and civilisation in Malaysia. High Impact Educational Practices (HIEPS) are applied in the teaching and learning process to deepen the understanding of this course.

DTMW 1012 Fundamentals of Entrepreneurial Acculturation

This course equips students with the motivation and essential entrepreneurial skills required to succeed in business. Students will gain knowledge of the principles and practices needed to establish, develop, and strengthen a business venture. Teaching, learning, and practical application activities that integrate both theory and practice will help students acquire the competencies necessary before embarking on entrepreneurial endeavors. The course also enables students to build business networks through business discussions, simulations, and seminars. In addition, students will be exposed to issues related to marketing, strategic management, and risk management.

Students will also develop the skills required to prepare cash flow statements and acquire fundamental knowledge in developing and preparing a comprehensive business plan.

DLLW2122 English for Effective Communication

This course is designed to provide students with the necessary communication skills to communicate effectively. The elements of grammar are taught to complement the topics covered in this course. Students demonstrate interpersonal skills through speeches and role-play. The elements of problem based learning (PBL) are especially exercised during the oral presentation of the product as well as role play.

DLLW3132 English for Marketability

This course aims to introduce and expose students to the basic tenets of communication specifically the oral and written communication required at the workplace. Students will be provided with the opportunity to produce a reflective writing, resume, job-application letter, e-message and report. They will also be able to participate in an interview, and to discuss and explain information in group discussions. Students will be exposed to situations where they learn to function as

individuals and team members by communicating in spoken and written forms using appropriate language in a variety of workplace contexts.

CORE COURSE (P)

DFDU 1303 Engineering Mathematics

This course is a blend of analytical and numerical approaches that mainly focusing on the matrices, nonlinear equations, complex numbers, interpolation, differentiation, integration and vector-valued functions.

DFDU 1323 Fundamental Physics

The topics cover in this course are: forces, acceleration and Newton's second law of motion, motion with a changing velocity, circular motion, conservation of energy, linear momentum, fluids, heats, temperature, electric forces and fields, capacitor, electric current and circuits, reflection and refraction of light.

DFDU 1333 Chemistry

This course will discuss about the concepts in Chemistry: The Study of Change; Atoms, Molecules and Ions; Chemical Reaction; Structure of Atoms; The Periodic Table;

Chemical Bonding; Properties of Matter; and Thermochemistry.

DFDK 1393 Materials Science

Introduction to fundamentals of Materials Science and its applications, atomic structure, crystal structure, solidification, imperfections and solid diffusion, mechanical and physical properties, phase diagrams and transformation, types and applications of materials.

DFDG 1353 Electrical & Electronic Principles

This module provides knowledge relating to electrical units and parameters, direct and alternating current sources, Ohm's Law, passives components like resistor and capacitors in parallel and series connections, sine wave characteristic, transformers, actives components (integrated circuit) like diode, transistor, operational amplifier, digital circuits and their application.

DFDU 1313 Differential Equations

This course covers basic concepts of differential equations, first order differential equation, second order linear differential equation with constant coefficients, Laplace transforms, and Fourier series.

DFDG 1343 Computer Programming

This course discusses about the basic principles of computers, software development methodology and basic programming principles such as syntax, semantic, compiling, and linking. Programming techniques using C++ such as data type and operator, selection, repetition, function, array, file, structure and pointer are learnt towards the end of this course.

DFDG 1373 Statics

The introduction and the basic concept of statics as physical sciences, System of Units, Scalars and Vectors, Free body diagram, Forces system, Force system resultants and Moment, Equilibrium of a particle, Equilibrium of a rigid body, Structural analysis (trusses analysis and simple frames and machines), Friction and Center of gravity and Centroid.

DFDG 1363 Manufacturing Process

This course covers manufacturing and the aspects of manufacturing, joining processes and equipments, metal casting processes and equipments, metal and plastic forming processes and equipments, material removal processes and machines, and modern machining processes.

DFDK 1302 Technology and Engineering Workshop Practice I

a. Welding

This course is designed to provide students with a fundamental understanding of gas welding, arc welding (SMAW) and MIG welding (GMAW), welding safety, welding machines (gas, arc, MIG), electrode classifications and electrode selection. Training to develop the basic welding skills in basic joint configurations such as butt joint and tee joint.

b. Fabrication

Covers layout, cutting, forming and joining of basic sheet metal and use of hand tools and equipment to develop and fabricate basic sheet metal project based on drawing of the project.

c. Fitting

This course is designed to give students a good appreciation on the various types of hand tools commonly used for measurement, marking out, and metal removal. This course also let the students understand the uses of common hand tools and appreciate the important of fitting work in the finishing product. Through the hands-on practice given, the students will acquire some of the basic skills and technique involved with these hand processes.

DFDK 1322 Experimental Method

Introduction to the experiment and measurement concept. Experimental data properties and graphical presentation of the data. Dealing with hysteresis and uncertainty. This course also covers experiment data processing which consists of using statistical method for irregular data, regression line, and using spreadsheet in data analysis. Introduction to the basic knowledge about measurement devices.

DFDG 1383 Engineering Graphics

In the first part of this course; geometric, orthographic, dimensioning, isometric, sectional view and assembly drawing will be explained using manual drafting technique. In the second part, CAD software will be used in order to generate those drawings. Additional 3D solid modeling also will be introduced in this course.

DFDK 1312 Technology and Engineering Workshop Practice II

a. Conventional Machine

Introduction to fundamentals of machining process on conventional (Lathe and Milling) machines and its application, such as in handling aspect, safety factor, main function and machining/manufacturing process includes in conventional lathe and milling machining.

b. CNC Machine

Covers fundamentals of machining process on advanced machine as CNC lathe machine, CNC milling machine, EDM machine and wire cut machine and its applications such as in handling aspect, safety factor, main function and machining/manufacturing process with high accuracy and complex method.

DFDU 2303 Statistics

This course covers data description and numerical measures, probability, random variables and probability distributions, sampling distributions, estimation, hypothesis testing and simple linear and multiple regression.

DFDK 2323 Mechanical Design

This course covers Introduction to Engineering Design, Design of Static and Fatigue Strength, Design of Threaded and Welded Joints, Bearings, Shafts/rods, Gears and Springs. Student will learn to design a simple machine applying foundation of mechanical engineering concept. Apart from that, a topic on sustainability of design is introduced for eco-friendly design.

DFDK 2333 Hydraulic and Pneumatic System

This course covers the introduction of the hydraulic and pneumatic systems, types of pump, compressor and their working principles, types of valve, actuator, and their usage, performance of the system, others fluid power system ancillaries and sensors, fluid power circuit design and analysis with manual control and electrical control. Computer software is used to design and simulate the system circuit. The electro-mechanical is also embedded in circuit design and the application of fluid power in robotic and mobile hydraulics.

DFDG 2343 Electronic & Microprocessor Fundamental

This course will be divided into two sections; basic electronics and microprocessor technology. The first section covers the topic on concept and function of electronic components in a computer system (resistor, capacitor, inductor, transformers, fuse, cable, diode, and transistor). The next section will deal with topics such as system numbers, logic gates, Boolean operation, combination logic (type of flip flop), register and digital circuit application in microprocessor.

DFDK 2313 Dynamics

This course introduces to the principle of dynamics based on kinematics and kinetic. Understand the concept of position, velocity and acceleration, application of Newton second law, principle of work and energy, principle of impulse and momentum for particle and rigid body.

DFDU 2322 Diploma Project I

The students need to solve a well-defined mechanical engineering problem by design a mechanical product, process or system. Students are required to plan and implement the project that related to mechanical engineering field in a form of group, but the assessment will be individually. It covers initial report writing for design and analysis. The students need to achieve the objective of the project and present it in the report and oral presentations.

DFDK 2353 Thermodynamics

This course covers the basic concepts and definitions of engineering thermodynamics, energy, work and heat, properties of pure substances (relationships of P-V, T-V, P-T and T-s diagrams), First Law of Thermodynamics, Second Law of Thermodynamics and Entropy.

DFDK 2363 Fluid Mechanics

This course introduces the basic properties of fluids. It covers the definition to the pressure, heads, the derivation of hydrostatic equation and its application in pressure measurement, static forces analysis on immersed surface and also buoyancy analysis. The course also introduces fluid dynamics, fluid flow analysis, derivation of flow equations, the application of the energy equation, Bernouli equation in the calculation of flow velocity, discharge, heat lost in piping systems, dimensional analysis and also its application.

DFDK 2373 Mechanics of Machines

This course will cover the power transmission system (belt drive, gears application, gear efficiency), Dynamic system balancing (rotor balancing such as planar and multi planar and reciprocating balancing such as in-line engine, radial and V-engine), Governors (Flywheel and Porter governor), Gyroscope, Free vibration (pendulum system, spring-mass system and shaft-inertia system by using energy conservation method, equivalent method and Newton's Law method), Free vibration with viscous damping (basic principle).

DFDK 2383 Solid Mechanics

This course introduces to the various types of structures and type of supports. Understand the concepts of stress, strain, shear force and bending moment. It also covers the theory of torsion, shear flow with combination of loads, including the deflection of beams

DFDG 2352 Occupational Safety and Health

The basic principles of occupational safety and health is discussed in this course. The subject of occupational safety and health (OSH) is significant to the engineering field owing to the rapid technological changes, which have introduced new hazards in the workplace.

DFDU 2332 Diploma Project II

The student continues the project activities according to the design and analysis done in Project I DFDU 2322 in the previous semester. The Project II activities cover the fabrication of the design done and followed by presenting the product in a report. The students must also present and defend the functionality of the product in an oral presentation during the exhibition.

DFDU 3348 Industrial Training

All Diploma students are required to undergo industrial training as part of their curriculum to complete their two and half (2 ½) years course after semester 4 of studies for a 16-weeks period of training at respective industrial companies. It is compulsory for all students to undergo the Industrial Training Programme. In general, the aim of industrial training are to give exposure, experience and professional skills to various aspects of engineering discipline, in particular in electrical engineering related industries. The students are also expected to be familiarized with efficient, accountable and ethical conduct as they will be supervised directly under the company's

personnel as well as supervisors from the faculty. Apart from that, the assessment will be made by the appointed faculty supervisors & the industry supervisors. A PO survey is also embedded inside the assessment form by the industry supervisors. There will also be a survey by the students prior to completion of their training. After completing the industrial training, students have to submit a formal report following the faculty format. Evaluation will be based on faculty supervisor report, industrial supervisor report and student logbook toward grading whether pass or fail.

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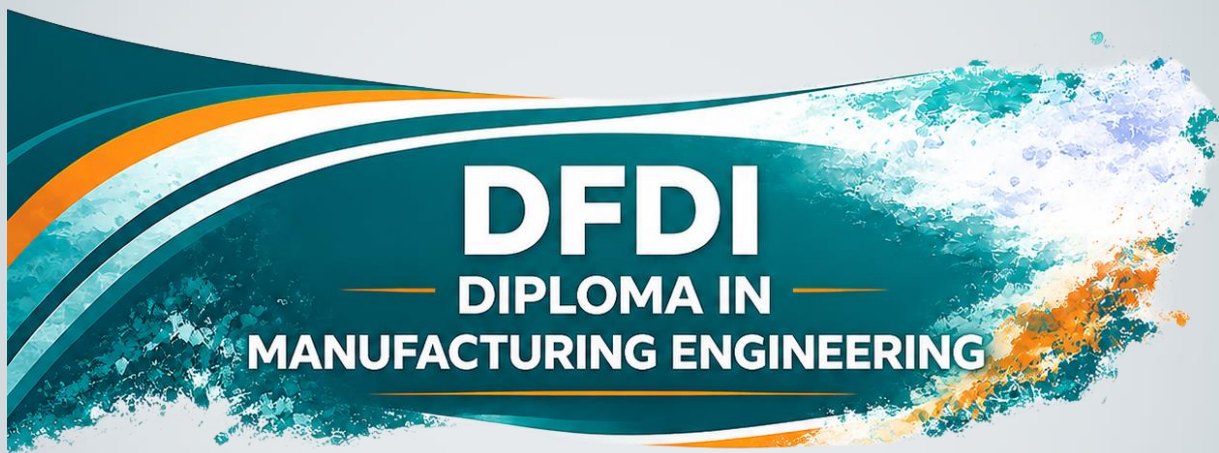
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Diploma in Manufacturing Engineering (DFDI)

Programme Details

Diploma in Manufacturing Engineering was first introduced in 2001. The course stresses on knowledge and skills in processing activities, manufacturing methods and machine usage in producing cost-effective products that fulfil customer's requirements. Graduates of this program can build their career as Manufacturing Technical Assistant, Technical Specialist or Entrepreneur. Graduates can also further their study in Bachelor Degree Program.

Programme Educational Objectives (PEO)

Program Educational Objectives (PEO) is the first pillar of Outcome Based Education (OBE). PEO describe the expected accomplishments of the graduates in respect of their career and professional life three to five years after their graduation. PEO is specific goals describing expected achievements of graduates in their career and professional life after graduation. Below are the current PEO of Diploma in Manufacturing Engineering.

1. Alumni are able to apply engineering knowledge and technical skills required to assist in analyzing and solving problems in manufacturing engineering field.
2. Alumni possess effective skills in communication, teamwork, leadership and supervision with ethical standard.
3. Alumni are creative and innovative in fulfilling the needs of industry and society for their life-long learning.

Programme Learning Outcomes (PLO)

Program Outcomes (PLO) are statements describing what students are expected to know and be able to perform or attain by the time of graduation. These relate to the skills, knowledge, and behaviours that students acquire through their program of studies.

1. Apply knowledge of applied mathematics, applied science, computing, engineering fundamentals, and manufacturing engineering.
2. Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.
3. 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.
4. Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.
5. Apply appropriate techniques, resources, and modern engineering, computing and IT tools to well-defined engineering problems, with an awareness of the limitations.
6. Evaluate the impacts of sustainable development on society, the economy, sustainability, health and safety, legal frameworks, and the environment when solving well-defined engineering problems.
7. Practice professional ethics and responsibilities, and norms of technician practice and including compliance with national and international laws. Show an understanding of the need for diversity and inclusion.
8. Function effectively as an individual and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings.
9. 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.

10. Demonstrate awareness and apply knowledge on engineering management principles individually, as a member or leader in a technical team, and to manage projects in multidisciplinary environments.
11. Ability to pursue independent and life-long learning as well as critical thinking in the face of specialized technical knowledge

Curriculum Structure

The number of credits required to be awarded a Diploma is 91 credits. This course will take two (2) years and eight (8) months minimum which emphasis on the latest technology and up to date skills. The composition of the credits is as follows:

Diploma in Manufacturing Engineering Minimum graduating credit - 91		
Component	Component's Code	Credits
University Compulsory Course	W	14
Core Course (Engineering)	P	62
Core Course (Science & Mathematics)	P	15
Total Credits		91

Curriculum Structure for Each Semester

Initial Special Semester

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 1112	Foundation English	W	2	
DLHW 2722	Integrity and Anti-Corruption	W	2	
DLHW 2772	Appreciation of Ethics and Civilizations	W	2	
Total Credits			6	

Year One : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 1*1	Co-Curriculum I ¹	W	1	
DLLW 2122	English for Effective Communication	W	2	
DFDU 1403	Engineering Mathematics	P	3	
DFDU 1423	Engineering Physics	P	3	
DFDG 1453	Electric & Electronic Principles	P	3	
DFDG 1443	Computer Programming	P	3	
DFDI 1413	Manufacturing Practice	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 2**1	Co-Curriculum II ¹	W	1	
DTMW 1012	Fundamental of Entrepreneurial Acculturation	W	2	
DFDG 1463	Manufacturing Process	P	3	
DFDG 1473	Statics	P	3	
DFDI 1433	Thermofluids	P	3	
DFDI 1493	Engineering Material	P	3	
DFDG 1483	Engineering Graphic and CADD	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDG 1452	Occupational Safety and Health	P	2	
DFDI 2402	CAD/CAM	P	2	
DFDI 2412	Total Productive Maintenance	P	2	
Total Credits			6	

Year Two : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 3132	English for Marketability	W	2	
DFDU 2403	Engineering Statistic	P	3	
DFDI 1473	Applied Dynamics	P	3	
DFDI 2413	Fluid Power	P	3	
DFDI 2423	Instrumentation & Control	P	3	
DFDI 2442	Jigs and Fixtures	P	2	
DFDU 2422	Diploma Project 1	P	2	
Total Credits			18	

Year Two : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDI 2433	Quality Control and Metrology	P	3	
DFDI 2443	Mechanics of Materials	P	3	
DFDI 2453	Industrial Automation	P	3	
DFDI 2463	CNC Technology	P	3	
DFDI 2473	Manufacturing Management	P	3	
DFDU 2432	Diploma Project 2	P	2	DFDU 2422
Total Credits			17	

Year Three : Semester 1

Course Code	Course Name	Comp Code	Duration (weeks)	Credit	Pre-requisite
DFDU 3448	Industrial Training	P	16	8	
Total Credits				8	

Course Synopsis

UNIVERSITY COMPULSORY (W)

DLLW1112 Foundation English

This course is designed to help students to improve their proficiency in the English language and to communicate effectively in both spoken and written forms. Five main aspects: listening, speaking, reading, writing and grammar are taught in an integrated approach to build confidence among the learners to become efficient speakers of English in their tertiary education.

DLHW 2722 Integrity and Anti-Corruption

The Integrity and Anti-Corruption (KIAR) course aims to introduce students to the practices of integrity and the importance of combating corruption in society and organisations. The focus of the course is on the values of integrity and corruption prevention, as well as the issues, challenges, and problems related to the management of corruption in both society and organisations. Learning activities include group discussions, reporting, and fieldwork within various sectors of society (public sector, private sector, NGOs, politics, and students).

DLHW 2772 Appreciation of Ethics and Civilizations

This course prepares students to appreciate the ethics and civilisation within Malaysia's multi-ethnic society, strengthening their critical and analytical thinking to address increasingly challenging life situations. The course content focuses on the understanding of ethics and civilisation in the Malaysian context. Students will be exposed to the dynamics of ethical and civilisational concepts that have been pivotal in the formation of Malaysia, tracing its historical evolution from the pre-colonial era to the post-colonial period. The development of ethics and civilisation in a diverse society will be discussed to enhance the appreciation of these values towards strengthening national unity and the Malaysian identity. The Malaysian model of civilisation needs to be explored and debated within academic activities, guided by the Federal Constitution as the foundation of integration and a framework for ethics and civilisation. Building national unity is significantly influenced by globalisation and the complex developments in information and communication technology. Therefore, the

appreciation of ethics and civilisation is demonstrated by social responsibility behaviors and is driven at the individual, family, community, society, and national levels. As a result, the societal changes and direct economic development have introduced new challenges in reinforcing the sustainability of ethics and civilisation in Malaysia. High Impact Educational Practices (HIEPS) are applied in the teaching and learning process to deepen the understanding of this course.

DLLW2122 English for Effective Communication

This course is designed to provide students with the necessary communication skills to communicate effectively. The elements of grammar are taught to complement the topics covered in this course. Students demonstrate interpersonal skills through speeches and role-play. The elements of problem based learning (PBL) are especially exercised during the oral presentation of the product as well as role play.

DTMW 1012 Fundamentals of Entrepreneurial Acculturation

This course equips students with the motivation and essential entrepreneurial skills required to succeed in business. Students will gain knowledge of the

principles and practices needed to establish, develop, and strengthen a business venture. Teaching, learning, and practical application activities that integrate both theory and practice will help students acquire the competencies necessary before embarking on entrepreneurial endeavors. The course also enables students to build business networks through business discussions, simulations, and seminars. In addition, students will be exposed to issues related to marketing, strategic management, and risk management. Students will also develop the skills required to prepare cash flow statements and acquire fundamental knowledge in developing and preparing a comprehensive business plan.

DLLW3132 English for Marketability

This course aims to introduce and expose students to the basic tenets of communication specifically the oral and written communication required at the workplace. Students will be provided with the opportunity to produce a reflective writing, resume, job-application letter, e-message and report. They will also be able to participate in an interview, and to discuss and explain information in group discussions. Students will be exposed to situations where they learn to function as

individuals and team members by communicating in spoken and written forms using appropriate language in a variety of workplace contexts.

CORE COURSE (P)

DFDU 1403 Engineering Mathematics

This course is a blend of analytical and numerical approaches that mainly focusing on the matrices, nonlinear equations, eigenvalues and eigen vectors, complex numbers, interpolation, differentiation, integration and vector valued functions.

DFDU 1423 Engineering Physics

The topics covers in this subject are: Forces, Acceleration and Newton's Second Law of Motion, Motion with a Changing Velocity, Circular Motion, Conservation of Energy, Linear Momentum, Fluids, Heat, Temperature, Electric Forces and Fields, Capacitor, Electric Current and Circuits, Reflection and Refraction of Light.

DFDG 1453 Electrical and Electronic Principles

This course will discuss about electric and electronic principles; passive elements, DC and AC circuit analysis, transformer, semiconductor theory and devices: diode,

Bipolar Junction Transistor, op-amp, timer and Integrated Circuits.

DFDG 1443 Computer Programming

This course covers the introductory topics in programming using computer language. It includes the introduction to computers and programming, the fundamentals of programming, problem solving and software development. Data types and operators, selection, repetition, function, array, file, structured data and pointer are among the topics covered in the course.

DFDI 1413 Manufacturing Practice

The practice consists of introducing basic knowledge of using manual hand tools and equipment, machine tools, welding, fabrication, fitting, casting, milling, metrology measurement and some manual work within manufacturing daily activities. It introduces standard equipment for performing manufacturing works such as lathe and milling machines, arc welding, sheet metal forming, basic foundry kit, fitting and metrology measurement. Due to its nature as an introductory course, students must prepare at home before having the practice to acquire any knowledge concerning the practices.

DFDG 1463 Manufacturing Processes

This course is an introduction to the manufacturing processes and machineries involved. Manufacturing engineers should have strong knowledge and fundamentals about various manufacturing processes. In this course the students will be exposed to the general introduction of manufacturing activities. The students will be provided with clear understanding of four broad manufacturing topics; forming, removing, joining and finishing. The sub elements of these topics will enable the student to have strong shield of manufacturing processes. Besides that, the students will also be taught the fundamentals of non-metallic processes.

DFDG 1473 Statics

Statics is one of the primary topics of mechanics. Mechanics is the branch of physics that considers the action of forces on bodies that are at rest or in motion. This course is offered to study the mechanics of a particle and a rigid body at rest (statics). Topics include are: forces and equilibrium systems, moments and couples, structures and members, friction, centroids and moment of inertia.

DFDI 1433 Thermofluids

The course is given to introduce the student to the basic engineering of thermodynamics that involved study on the energy transformation, working fluids, theory and application of first and second laws of thermodynamics. The course also covers explanation on the steam and gas power plant as a direct application of the thermodynamic theory. Refrigeration system is also given to expose student to the many practice examples of the thermodynamics principles. The other phase of this course is to introduce the students to the basic of fluid mechanics. The course covers the study of the pressure and fluid static, buoyancy and stability, dynamic analysis, Bernoulli equation, momentum principle, and the internal and external flow behavior of the fluids.

DFDI 1493 Engineering Materials

This course introduces students to basic concepts of engineering materials that covers interatomic bonding, crystalline structure, imperfections and diffusion in solids. Introduction to the binary phase diagrams is also provided. Explanation on various types of engineering materials (i.e. metals, ceramics, polymers, composites and semiconductors), their mechanical

properties, basic processing techniques and applications are also included.

DFDG 1483 Engineering Graphics & CADD

The purpose of this course is to provide students with an understanding of the importance of engineering graphic communication to the design process and interpreting the engineering drawings. Students will gain hands-on experience creating freehand technical sketches and CAD technical drawings using orthographic projections, section auxiliary views and isometric drawings. Emphasis is placed on creating drawing that are neat, correctly dimensioned using industry standards. Students will use freehand sketches methods and CAD software to develop visualisation skills and create the engineering drawings in 2D and 3D.

DFDG 1452 Occupational Safety and Health

The aim of this course is to expose students to industrial Laws and regulations in Malaysia specifically Factory and Machinery Act, Occupational Safety and Health Act. Students will be taught on safety, health and environment hazard that affects human being. The skills and knowledge of this area

are crucial for students to accommodate them in the future.

DFDI 2402 CAD/ CAM

This course is an introduction to the CAD/CAM system and its application. The student will be exposed to the application of CAD/CAM software for generating geometric modelling and NC part programming. Students will create 2D graphic elements and apply geometric constraints, create geometric modelling and modifying using edit commands, generative drafting and edit drawing block, create CAM programming and perform machining simulation and also generate NC part programming. The machining simulation will present the machining operation prior to the actual machining process. Student will apply all the knowledge in doing group project in order to understand the process in CAD/CAM system and integration from CAD to CAM operation.

DFDI 2412 Total Productive Maintenance

This course is important to engineers because it prepares them with the basic techniques and knowledge of Total Productive Maintenance. This course aims to motivate students through the application of Total Productive Maintenance theories,

concepts and its relation to the real world. The course contents will expose students to analyze production maintenance in the industry and solve related problems in the manufacturing world today.

DFDU 2403 Engineering Statistics

Data description and numerical measures, probability, discrete random variables, continuous random variables, sampling distribution, estimation, hypothesis testing, estimation and hypothesis testing: two populations, analysis of variance, simple linear regression and correlation, multiple linear regression.

DFDI 1473 Applied Dynamics

This course focuses on the fundamental of dynamics analysis and the principles of the mechanics of machines, with their application in practice. It also covers the basic concept of transmission elements including gear, screw, belt, joints, and bearings. Topics included are; kinematics for particle and rigid body, force and acceleration for particle and rigid body, transmission elements design, dynamic analysis, and its application on joints and bearings.

DFDI 2413 Fluid Power

This course emphasizes on the basic system used in fluid power technologies namely hydraulics and pneumatics by detailing sections for each system. The syllabus covers the type of actuator used such as linear or rotary, control of valves by means of pressure, flow or directional, sources for each system and the components involved, as well as standard symbol for each component and design and analysis of circuit diagram for hydraulics and pneumatics respectively.

DFDI 2423 Instrumentation and Control

This course is important to engineers because it prepares them with the basic techniques and knowledge of instrumentation and control system engineering. This course aims to motivate students through the application of instrumentation and control system theories, concepts and its relation to the real world. The course contents will expose students to analyze control systems in the industry and solve related problems in the manufacturing world today.

DFDI 2442 Jigs & Fixtures

This course will introduce the student to the complex field on Jig & Fixture Design with

respect to the manufacturing industry. This creative, lab oriented, problem solving course includes the generation of complete working drawings from initial concept to the final outcome. The method of instruction will be: lectures, discussion, design and development of the actual product.

DFDU 2422 Diploma Project 1

This is the first part of Diploma Final Year Project. This course introduces the integration of design and manufacturing in creating a new product. Students will be exposed to the concepts and principles of product design as well as the best processes to manufacture product. Knowledge on the economic factors influencing design such as product cost analysis and human engineering consideration in product design is also covered in this course. In addition, knowledge of the environment impacts and issues on sustainability is also covered in this course. The project in this course applies team based approached to which will improve students' teamwork and communication skills. Industrial talks delivered by experts from industry give the opportunity in sharing the working experience from the experts to the students.

DFDI 2433 Quality Control and Metrology

This course introduces the fundamentals concept of quality control and engineering metrology. The quality control and issues on quality will be covered such as statistical process control tools and techniques like Pareto diagram, cause and effect diagram, scatter diagram; etc control charts for variables and attributes, and acceptance sampling systems will also be covered. Besides, four main metrology areas also will be covered that are; fundamentals of engineering metrology statistics in dimensional metrology, geometrical dimensioning and tolerances and basic technical measuring equipment.

DFDI 2443 Mechanic of Materials

This course provides a basic introduction to the basic concepts of stress, strain, and relating stress and strain in terms of materials behavior. This course also considers the basic applications of the axial loading, torsion and bending concepts.

DFDI 2453 Industrial Automation

Robotics and Automation subject introduces students to the automation aspect that can be applied in manufacturing systems. The use of robot, CNC machines, automated guided vehicle (AGV), machine vision,

programmable logic controller (PLC), electrical circuit programming and other advanced automation technologies will be given as a fundamental to the students to pursue higher level activities in larger scale industrial automation system. In practical session students are exposed to the real PLC programming as the one applied in the manufacturing industry.

DFDI 2463 CNC Technology

This course introduces the principles of computer numerical control (CNC) which covers the differences between conventional machines and CNC machines, the advantages of CNC machines, and the type of CNC machines. In this course, the student is exposed to the CNC programming planning (programming structure methodology, programming techniques), how to coordinate and control lathe and milling machines, and tool selection as well as the safety factor.

DFDI 2473 Manufacturing Management

Manufacturing management consists of production and operational management, which emphasize on the elements and application of manufacturing. Tools, methods, and applications are introduced in this syllabus.

DFDU 2432 Diploma Project 2

This the final part of Diploma Final Year project. Diploma Project 2 focuses on integration of learning principles in multidisciplinary application for a product design project and prototype development that include marketing, concept design, material selection, process selection and sustainability, project management, and manufacturing cost. As a result, students will gain appreciation for the interdisciplinary cooperation and for the complex and essential roles played by various members of the product development teams. This design project applies team-based approach. The team-based approach will improve teamwork and communication skills in accordance to the realities of industrial practice. Students are expected to be exposed to complex and essential team roles during the development of the design project. Emphasize is also given on issues related to material selection using CES EduPack, quality of the prototypes produced and marketability of the design projects.

DFDU 3448 Industrial Training

Students are expected to be involved in the areas such as; manufacturing / production process and / or its optimization process, mechanical design and product / system development, maintenance and repair of

machineries or equipment, and product testing & quality control.

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Diploma in Computer Science (DFDS)

Programme Details

Diploma in Computer Science (DFDS) deals with designing innovative methodologies and sophisticated tools for developing software systems. Students are exposed to various techniques of analysing user requirements and specifications, as well as design and implementation of software systems. Some of the core courses include object-oriented programming, database systems, software analysis and design and human computer interaction. There is a wide range of career opportunities in the field of computer science and information technology available for graduates of Diploma in Computer Science. Among the career opportunities are Programmers / Analyst Programmers / Multimedia Programmers, Network Administrators, Software Developers and any Computer Science related positions. Other than that, the graduates also have the opportunity to further their studies at degree level in UTeM.

Programme Educational Objectives (PEO)

The aim of the Diploma in Computer Science programme is to produce students with the following characteristics:

1. Provide computer solutions to computing problems using basic knowledge, numeracy and technical skills that meet industry needs.
2. Possess supervisory ability, communication and interpersonal skills in engaging within industry and the community.
3. Practice lifelong learning and entrepreneurial mindset to improve their self and career development.
4. Uphold professional practices and ethics with integrity principles in fulfilling their responsibilities.

Programme Learning Outcomes (PLO)

The aim of the Diploma in Computer Science programme is to produce students with the following characteristics:

1. Explain a broad range of concepts, principles and theories to address issues in Computer Science discipline.
2. Apply appropriate tools and procedures to produce computing solutions for well-defined and routine problems.
3. Perform appropriate skills to support and develop computing solutions for related job functions.
4. Demonstrate effective interaction in engaging with stakeholders and society within an organisation.
5. Exhibit effective communication through oral and written modes in engaging with stakeholders and society within an organisation.
6. Use a range of computing software or tools to solve problems related to job functions.
7. Apply appropriate numerical skills in computing to solve problems related to job functions.
8. Demonstrate supervisory skills to manage teams in performing job functions with autonomy and responsibility.
9. Commit to self-improvement initiatives for independent and lifelong learning in academic and career development.
10. Demonstrate an entrepreneurial mindset in delivering solutions.
11. Commit to professionalism and ethical values in performing job and organisational functions.

Curriculum Structure

Students are required to complete a minimum of 90 credits to graduate with a Diploma in Computer Science. The programme components are as follows:

Diploma in Computer Science Minimum graduating credit – 90		
Component	Component's Code	Credits
University Compulsory	W	14
Core Computing	P	33
Discipline Core	K	31
Final Year Project	P	4
Industrial Training	P	8
Total Credits		90

Curriculum Structure for Each Semester

Initial Special Semester

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 1112	Foundation English	W	2	
DLHW 2722	Integrity and Anti-Corruption	W	2	
DLHW 2772	Appreciation of Ethics and Civilizations	W	2	
Total Credits			6	

Year One : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 1*1	Co-Curriculum I ¹	W	1	
DTMW 1012	Fundamentals of Entrepreneurial Acculturation	W	2	
DFDU 1503	Discrete Mathematics	P	3	
DFDS 1513	Programming I	P	3	
DFDS 1533	Ethics in Computing	P	3	
DFDS 1543	Computer Organisation and Architecture	P	3	
DFDS 1553	Database	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 2**1	Co-Curriculum II ¹	W	1	
DLLW 2122	English for Effective Communication	W	2	
DFDS 1563	Calculus and Algebra	P	3	
DFDS 1523	Programming 2	K	3	DFDS 1513
DFDS 1573	Human Computer Interaction	K	3	
DFDS 1583	System Analysis and Design	P	3	
DFDS 1593	Operating System	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDS 2503	Data Communication and Networking	P	3	
DFDS 2513	Data Structure and Algorithm	K	3	DFDS 1513 DFDS 1523
Total Credits			6	

Year Two : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 3132	English for Marketability	W	2	
DFDS 2523	Statistics and Probability	P	3	
DFDS 2533	Web Programming	K	3	
DFDS 2543	Computer Security	P	3	
DFDS 2553	Object-Oriented Programming	K	3	DFDS 1513
DFDS 2564	System Development Workshop	K	4	DFDS 1583
Total Credits			18	

Year Two : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDS 2573	Applied Artificial Intelligence	K	3	
DFDS 2583	Platform-Based Development	K	3	
DFDS 2593	Distributed and Parallel Application Development	K	3	
DFDS 3593	System Fundamentals	K	3	
DFDU 2534	Diploma Project	P	4	DFDS 2564
Total Credits			16	

Year Three : Semester 1

Course Code	Course Name	Comp Code	Duration (weeks)	Credit	Pre-requisite
DFDU 3546	Industrial Training	P	16	6	
DFDU 3542	Industrial Training Report	P	16	2	
Total Credits				8	

Course Synopsis

UNIVERSITY COMPULSORY (W)

DLLW1112 Foundation English

This subject is designed to help students to improve their proficiency in the English Language and to communicate effectively in both spoken and written forms. Five main aspects: listening, speaking, reading, writing and grammar are taught in an integrated approach to build confidence among the learners to become efficient speakers of English in their tertiary education.

DLHW 2722 Integrity and Anti-Corruption

The Integrity and Anti-Corruption (KIAR) course aims to introduce students to the practices of integrity and the importance of combating corruption in society and organisations. The focus of the course is on the values of integrity and corruption prevention, as well as the issues, challenges, and problems related to the management of corruption in both society and organisations. Learning activities include group discussions, reporting, and fieldwork within various sectors of society (public sector, private sector, NGOs, politics, and students).

DLHW 2772 Appreciation of Ethics and Civilizations

This course prepares students to appreciate the ethics and civilisation within Malaysia's multi-ethnic society, strengthening their critical and analytical thinking to address increasingly challenging life situations. The course content focuses on the understanding of ethics and civilisation in the Malaysian context. Students will be exposed to the dynamics of ethical and civilisational concepts that have been pivotal in the formation of Malaysia, tracing its historical evolution from the pre-colonial era to the post-colonial period. The development of ethics and civilisation in a diverse society will be discussed to enhance the appreciation of these values towards strengthening national unity and the Malaysian identity. The Malaysian model of civilisation needs to be explored and debated within academic activities, guided by the Federal Constitution as the foundation of integration and a framework for ethics and civilisation. Building national unity is significantly influenced by globalisation and the complex developments in information and communication technology. Therefore, the

appreciation of ethics and civilisation is demonstrated by social responsibility behaviors and is driven at the individual, family, community, society, and national levels. As a result, the societal changes and direct economic development have introduced new challenges in reinforcing the sustainability of ethics and civilisation in Malaysia. High Impact Educational Practices (HIEPS) are applied in the teaching and learning process to deepen the understanding of this course.

DTMW 1012 Fundamentals of Entrepreneurial Acculturation

This course equips students with the motivation and essential entrepreneurial skills required to succeed in business. Students will gain knowledge of the principles and practices needed to establish, develop, and strengthen a business venture. Teaching, learning, and practical application activities that integrate both theory and practice will help students acquire the competencies necessary before embarking on entrepreneurial endeavors. The course also enables students to build business networks through business discussions, simulations, and seminars. In addition, students will be exposed to issues related to marketing, strategic management, and risk management.

Students will also develop the skills required to prepare cash flow statements and acquire fundamental knowledge in developing and preparing a comprehensive business plan.

DLLW2122 English for Effective Communication

This course is designed to provide students with the necessary communication skills to communicate effectively. The elements of grammar are taught to complement the topics covered in this course. Students demonstrate interpersonal skills through speeches and role-play. The elements of problem based learning (PBL) are especially exercised during the oral presentation of the product as well as role play.

DLLW3132 English for Marketability

This course aims to introduce and expose students to the basic tenets of communication specifically the oral and written communication required at the work place. Students will be provided with the opportunity to produce a resume, a job-application letter and a letter of inquiry. They will also be able to participate in an interview and a group discussion. Students will be exposed to situations where they learn to function as individuals and team members by communicating in spoken and written

forms using appropriate language in a variety of workplace contexts.

CORE COMPUTING (P)

DFDU 1503 Discrete Mathematics

This course introduces the fundamental concepts and techniques of Discrete Mathematics that are needed for computer science. Topics include Fundamental of Logics, Fundamentals of Proofs, Set Theory, Functions. Algorithms, Integers, Induction, Recursion, Counting, Relation, Graphs, Trees and Boolean Algebra.

DFDS 1513 Programming 1

This course covers the introductory topics in structured programming language. It includes the introduction to computers and programming as well as the fundamentals of programming problem. Data types and operators, selection, repetition, function are among the topics covered in the course.

DFDS 1533 Ethics in Computing

This course is an introduction to the ethical issues in the field of computer technology. It will explore a range of topics, including the nature of ethical reasoning and its application to computing; the ethical implications of new technologies, the ethical

responsibilities of computer scientists in the workplace; and the social implications of computer technology. The course will use a variety of teaching methods, including lectures, class discussions, and case studies. Students are expected to complete a number of assignments, final project and presentations.

DFDS 1543 Computer Organisation and Architecture

This subject provides a detail of computer system's functional components, characteristics, performance and interactions including system bus, different types of memory and Input/Output and CPU, as well as practical implementations of the components. Besides that, the architectural issues such as instruction set design and data types are covered. This subject includes digital circuit design and its application in microprocessor architecture.

DFDS 1553 Database

This course provides a comprehensive introduction to the core concepts and practical skills necessary for effective database management. Students will gain a solid foundation in understanding databases, data modeling, executing SQL queries, and developing simple database systems. At the end of this course, students

will have gained a comprehensive understanding of database fundamentals and the practical skills required to design, manage, and interact with databases effectively. The course will prepare students to step into roles as database designers and developers, enabling them to apply their knowledge in diverse professional environments and providing a solid foundation for further studies in advanced database courses.

DFDS 1563 Calculus and Algebra

This course introduces the fundamental concepts of Calculus and Algebra essential for computer science. Topics include functions, exponential and natural logarithm, limits and continuity, differentiation and its applications, integration and its applications, matrices, determinants, systems of linear equations, and vectors.

DFDS 1583 System Analysis and Design

Students will be introduced to a variety of information systems and system development lifecycles. Then, the system development methodology will be explained with different approaches - structured approach and object-oriented approaches. Next, it discusses the planning phase with a

focus on project identification, selection, initiation, and planning. The analysis phase will emphasize the determination and structuring of user requirements. The design phase then discusses the database, input, output, interface, and dialogue design. The final phase of system development will cover the implementation and software quality assurance. Object-oriented concepts with common UML diagrams are also introduced in general as different approaches to system analysis and design methodology.

DFDS 1593 Operating System

This course is designed to give an exposure to students about the fundamental of operating system including process, management of memory, file and I/O and also about CPU scheduling. The introduction part consists of the evolution of operating system since it started until now. Student will also learn about the basic concepts, technology and theory used in operating system such as concurrency, kernel, deadlock and multithreading. In addition, students will be introduced to few types of operating systems at basic administrative level.

DFDS 2503 Data Communication and Networking

This course introduces the fundamental concepts and terminologies of data communication and networking, encompassing both technical and managerial aspects and to help students better understand the challenges and opportunities faced by modern business. Topics will include: fundamentals of telecommunications, data transmission mechanisms, telecommunication media and technologies, considerations for LAN and WAN implementations, the Internet and intranet applications, emerging telecommunications technologies, and trends in the telecommunications industry. Students will also be able to understand, explain and apply the fundamentals of data communication and network technology concepts and skills in network applications, troubleshooting, and configuring basic computer networks using guided or unguided media.

DFDS 2523 Statistics and Probability

Students are exposed to the concept of probability and inferential statistics. The course starts with data description and numerical measures, probability, discrete random variables, continuous random variables and sampling distributions. Main

topics for inferential statistics will start with estimation and will be followed by hypothesis testing and simple linear regression. Besides that, this course will give some exposure to statistical software.

DFDS 2543 Computer Security

Security in Information Technology is a critical area of study for computer professionals and users. This course covers security services including Confidentiality, Integrity, and Availability (CIA) in ICT-based systems. It highlights the application of cyberlaw in protecting user rights and outlines the essential methods for disaster recovery planning.

DFDU 2534 Diploma Project

Diploma project trains the students to practice their knowledge by undertaking a project. The students are exposed to real system development environment in which they will have to analyze and solve system related problems, plan and develop the system as well as to meet the design and analysis requirements using appropriate computer programming language.

DFDU 3546 Industrial Training

Students must do the internship no less than 16 weeks in an organization that they have chosen. Throughout the internship, students

are guided and monitored by the industrial supervisor. Students are required to report their internship activities in their logbooks. The faculty supervisor will visit the student only once and usually, it will be near the end of the 16 weeks. During the visit, students are required to do a presentation at the organization in attendance of both Industrial and Faculty supervisor. Students must also submit a copy of the Industrial Training Report to the faculty supervisor for evaluation.

DFDU 3542 Industrial Training Report

This subject is an extension of DFDU 3546 where students must do the internship no less than 16 weeks in an organization that they have chosen. Throughout the internship, students are guided and monitored by the industrial supervisor. Students are required to report their internship activities in their logbooks. The faculty supervisor will visit the student only once and usually, it will be near the end of the 16 weeks. During the visit, students are required to do a presentation at the organization in attendance of both Industrial and Faculty supervisor. Students must also submit a copy of the Industrial Training Report to the faculty supervisor for evaluation.

DISCIPLINE CORE (K)

DFDS 1523 Programming 2

This course is a continuity on fundamental functional programming from previous course, which covers topics such as array, cstring manipulation, structured data, pointer as well as the problem solving resolves around these topics. Some Standard Library – Math/Date/Map library will be applied.

DFDS 1573 Human Computer Interaction

This subject introduces the concept of HCI and its relationship with system development. The topics include the basic understanding of cognitive psychology, user interface design, interaction design, usability, and evaluation. Other topics, such as user-centered design, task analysis, and user support design, are also covered. The current issues on accessibility and localization are also discussed at the end of this course.

DFDS 2513 Data Structure and Algorithm

This course aims to develop students' knowledge of data structures and algorithms. It begins with a review of basic abstract data type (ADT) concepts, which

will later be applied to the implementation of data structures. The course then introduces the analysis of algorithm efficiency, followed by problem-solving using recursion. Students will learn about essential data structures such as array-based lists, linked lists, stacks, queues, trees, graphs, and heaps, along with the operations for maintaining them. The course then discusses various searching and sorting algorithms, followed by problem-solving using greedy algorithms.

DFDS 2533 Web Programming

The purpose of this course is to equip students with a comprehensive understanding of the tools and problem-solving techniques required to develop effective World Wide Web sites, with an emphasis on five key components in web application development, namely client-side technologies (HTML5, CSS, JavaScript), server-side technologies (PHP), database servers (MySQL), and web servers (Apache); in addition, the course integrates essential elements of web design, including graphics, animation, and data storage, to enable students to construct fully functional and commercially viable web applications.

DFDS 2553 Object-Oriented Programming

This course covers the fundamentals of object oriented programming including principles such as abstraction, encapsulation, polymorphism and inheritance. Apart from that, object oriented concepts such as class, object, constructor and method, inheritance, polymorphism, exception and graphical user interface (GUI) will also be covered.

DFDS 2564 System Development Workshop

This course aims to provide exposure and skills to the students in developing and presenting a project of application/system development in a group. In this course students should be able to integrate subjects learned in earlier semesters such as analysis and design, programming, data structures and algorithms to develop a system.

DFDS 2573 Applied Artificial Intelligence

Students are exposed to the basic and branches of Artificial Intelligence such as the various search techniques, knowledge representation and reasoning, inference techniques, learning from experience and planning. Besides, some applications of AI

including game playing, expert systems, and machine learning will be introduced.

DFDS 2583 Platform-Based Development

This course concentrates on designing and developing software applications for specific platforms, with particular attention to web and mobile platforms. This platform-based development involved working with ecosystems and environments that are resource-constrained, feature-restricted, and energy-efficient. Thus, the skills of developing concerning services, APIs, and hardware are covered within the course curriculum, including programming paradigms, component libraries, and security. This course involves significant practical programming components focusing on different platform concepts with a broad range of theoretical and technical advances.

DFDS 2593 Distributed and Parallel Application Development

This course introduces the concepts of distributed and parallel computing. Topics covered include architectural patterns, I/O fundamentals, distributed application development with TCP and UDP programming, multithreading, concurrency, the Fork/Join framework, and performance

testing of Fork/Join applications. Upon completion of this course, students will be able to understand the fundamental concepts of distributed and parallel computing, apply architectural patterns to design distributed and parallel applications, use I/O effectively in distributed and parallel applications, develop distributed applications using TCP and UDP programming, understand the basics of multithreading, apply concurrency concepts to design and develop parallel applications, use the Fork/Join framework to develop parallel applications, and perform performance testing of Fork/Join applications.

DFDS 3593 System Fundamentals

This course introduces students to the fundamental concepts and design principles of computer systems, providing a unified view of how hardware and system software work together. It covers the essential building blocks of digital logic and state machines, progressing into system resource management, scheduling algorithms, and the transition from sequential to parallel processing. The course incorporates practical, tool-based applications to equip students with the skills to implement error detection and recovery mechanisms, manage shared resources

using synchronization primitives, and trace and debug system faults. Furthermore, it explores modern system considerations, including performance evaluation, virtualization, and fundamental system security.

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Diploma in E-Commerce (DFDC)

Programme Details

The Diploma in E-Commerce at UTeM is designed to equip students with hands-on skills and real-world knowledge of the e-commerce business. Rooted in UTeM's strong TVET foundation and reputation as Malaysia's pioneer technical university, the programme emphasises practical learning in e-commerce business setup, digital content creation, online payment and logistic systems, e-marketing strategies, data analytics, and emerging technologies.

Programme Educational Objectives (PEO)

The Programme Educational Objectives (PEO) describe the expected achievements of graduates three (3) to five (5) years after graduation. The Diploma in E-Commerce aims to produce the following:

1. Graduates who can practice a broad range of technology management and technopreneurship theoretical, technical, technical knowledge and skills in local and international e-Commerce businesses, to carry out varied complex routine and non-routine task with minimum supervision in the job areas for work and/or study.
2. Graduates who can demonstrate teamwork, interpersonal communication skills and be socially, and ethically responsible.
3. Graduates who are capable of continuing their studies for higher degrees and developing careers in the field of technology management and technopreneurship, which support local and international e-Commerce businesses through lifelong learning.

Programme Learning Outcomes (PLO)

Upon completion of the Diploma in E-Commerce programme, students will be able to:

1. Demonstrate an understanding of broad-range of technology management and technopreneurship theoretical perspectives and technical knowledge in e-Commerce to perform varied complex routine and non-routine tasks.
2. Apply critical thinking, problem solving and creative thinking to perform varied complex routine and non-routine tasks of e-Commerce.
3. Demonstrate the ability to organize, plan and use methods, tools, technologies and materials as well as reflect and make adjustments to practices and processes when necessary, to perform varied complex routine and non-routine tasks within e-Commerce.
4. Demonstrate effectively as an individual, a member/ leader with collaborative skills and appropriate etiquette within the national and international e-Commerce working environment.
5. Demonstrate the ability to communicate effectively information and ideas orally/ in-writing using national and at least one other languages proficiently within large working environment.
6. Use limited range of digital technology for data processing and analysis in e-Commerce.
7. Interpret complex numerical and graphical data to perform varied complex routine and non-routine task in e-Commerce.
8. Demonstrate the ability to work with a significant degree of autonomy and leading diverse teams with high responsibility on the quality of processes and/ or products/ services of e-Commerce.
9. Demonstrate ability to identify self-improvement initiatives for career or educational goals in the field of e-Commerce.
10. Demonstrate ability to engage in technopreneurial activities and exhibit technopreneurship skills within e-Commerce.
11. Demonstrate the ability to apply organisational/ personal ethics and sustainable practices in e-Commerce tasks and learning contexts.

Curriculum Structure

Students are required to complete a minimum of 95 credits to graduate with a Diploma in E-Commerce. The programme components are as follows:

Diploma in E-Commerce Minimum graduating credit – 95		
Component	Component's Code	Credits
University Compulsory Course	W	12
Common Core Course	P	42
Discipline Core Course	K	21
Work-Based Learning	P	20
Total Credits		95

Curriculum Structure for Each Semester

Initial Special Semester

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DLLW 1112	Foundation English	W	2	
DLHW 2722	Integrity and Anti-Corruption	W	2	
DLHW 2772	Appreciation of Ethics and Civilizations	W	2	
Total Credits			6	

Year One : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 1*1	Co-Curriculum I ¹	W	1	
DLLW 2122	English for Effective Communication	W	2	
DFDU 1603	Business Mathematics	P	3	
DFDC 1013	Principles of Economics	P	3	
DFDC 1023	Principles of Management	P	3	
DFDC 1033	Principles of Marketing	P	3	
DFDC 1043	Principles of Accounting	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DKK* 2**1	Co-Curriculum II ¹	W	1	
DLLW 3132	English for Marketability	W	2	
DFDC 1613	Human Resource Management	P	3	
DFDC 1623	Management of Technology	P	3	
DFDC 1633	Information System Management	P	3	
DFDC 1643	Supply Chain Principles	P	3	
DFDC 1653	Principles of Finance	P	3	
Total Credits			18	

¹ This course can be taken in any semester. Please refer to Co-Curriculum Unit before registering.

Year One : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDC 1663	Quality Management	P	3	
DFDC 1673	Project Management	P	3	
Total Credits			6	

Year Two : Semester 1

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDC 2603	Business Law and Cyber Law	P	3	
DFDC 2613	Operations Management	P	3	
DFDC 2623	Digital Entrepreneurship	P	3	
DFDC 2633	Business Analytics	P	3	
DFDC 2013	E-Commerce Business Model and Concept	K	3	
DFDC 2023	E-Commerce Marketing Concept and Communication	K	3	
Total Credits			18	

Year Two : Semester 2

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDC 2663	Digital Media in Marketing	K	3	
DFDC 2673	Online Content and Digital Media Development	K	3	
DFDC 2683	Online Retailing and Services	K	3	
DFDC 2033	E-Commerce Web Design	K	3	
DFDC 2043	E-Commerce Infrastructure Development	K	3	
Total Credits			15	

Year Two : Semester 3

Course Code	Course Name	Comp Code	Credit	Pre-requisite
DFDC 2602	Ethical, Legal and Social Issues in E-Commerce	P	2	
DFDU 2634	Diploma Project	P	4	
Total Credits			6	

Year Three : Semester 1

Course Code	Course Name	Comp Code	Duration (weeks)	Credit	Pre-requisite
DFDU 3648	Industrial Training	P	16	8	
Total Credits				8	

Course Synopsis

UNIVERSITY COMPULSORY (W)

DLLW1112 Foundation English

This course is designed to help students to improve their proficiency in the English language and to communicate effectively in both spoken and written forms. Three main aspects: speaking, reading, and writing are taught in an integrated approach to build confidence among the learners to become efficient speakers of English in their tertiary education.

DLHW 2722 Integrity and Anti-Corruption

The Integrity and Anti-Corruption (KIAR) course aims to introduce students to the practices of integrity and the importance of combating corruption in society and organisations. The focus of the course is on the values of integrity and corruption prevention, as well as the issues, challenges, and problems related to the management of corruption in both society and organisations. Learning activities include group discussions, reporting, and fieldwork within various sectors of society (public sector, private sector, NGOs, politics, and students).

DLHW 2772 Appreciation of Ethics and Civilizations

This course prepares students to appreciate the ethics and civilisation within Malaysia's multi-ethnic society, strengthening their critical and analytical thinking to address increasingly challenging life situations. The course content focuses on the understanding of ethics and civilisation in the Malaysian context. Students will be exposed to the dynamics of ethical and civilisational concepts that have been pivotal in the formation of Malaysia, tracing its historical evolution from the pre-colonial era to the post-colonial period. The development of ethics and civilisation in a diverse society will be discussed to enhance the appreciation of these values towards strengthening national unity and the Malaysian identity. The Malaysian model of civilisation needs to be explored and debated within academic activities, guided by the Federal Constitution as the foundation of integration and a framework for ethics and civilisation. Building national unity is significantly influenced by globalisation and the complex developments in information and communication technology. Therefore, the

appreciation of ethics and civilisation is demonstrated by social responsibility behaviors and is driven at the individual, family, community, society, and national levels. As a result, the societal changes and direct economic development have introduced new challenges in reinforcing the sustainability of ethics and civilisation in Malaysia. High Impact Educational Practices (HIEPS) are applied in the teaching and learning process to deepen the understanding of this course.

DLLW2122 English for Effective Communication

This course is designed to provide students with the necessary communication skills to communicate effectively. The elements of grammar are taught to complement the topics covered in this subject. Students demonstrate interpersonal skills through speeches and role-play. The elements of problem-based learning (PBL) are especially exercised during the oral presentation of the product as well as role-play.

DLLW3132 English for Marketability

This subject aims to introduce and expose students to the basic tenets of communication specifically the oral and written communication required at the

workplace. Students will be provided with the opportunity to produce a resume, a job-application letter, and a letter of inquiry. They will also be able to participate in an interview and a group discussion. Students will be exposed to situations where they learn to function as individuals and team members by communicating in spoken and written forms using appropriate language in a variety of workplace contexts.

COMMON CORE COURSE (P)

DFDU 1603 Business Mathematics

This course discuss the fundamentals of mathematics for business. Topics covered include linear equations & functions, system of linear equations, matrices, linear programming, exponential & logarithmic functions, differentiation and integration. Through simulations and case studies, students will be able to apply appropriate mathematical models to solve routine business problems.

DFDC 1013 Principles of Economics

The core components of this subject is the application of economic concepts in managing business transaction through optimising scarce resources. The subject discusses issues within the microeconomics and macroeconomics perspective. It

provides understanding of how economists model various economic situations pertaining to end users and firms, market coordination, and marketing functions effectively and efficiently. The focus is on the concepts of supply and demand, market concentration, quantitative demand and supply analysis, industrial environment, process and production flows and production function game theory in oligopolistic economy. The subject enriches students knowledge on the impact of economy on businesses and increase understanding of government economic policies, national annual budget through the creation of productive human capital.

DFDC 1023 Principles of Management

In this course, students will explore the fundamental principles of management, covering the core functions of 4M; man, money, material and method in planning, organizing, leading and controlling . The curriculum delves into the essential concepts of management and its symbiotic relationship with organizations. The course provides an in-depth examination of each of the four foundational management functions, elucidating the details of the managerial process. At the end of the course, students will have acquired a solid understanding of management concepts

that will serve as a guiding framework for their studies in related subjects.

DFDC 1033 Principles of Marketing

This subject will introduce the student to the marketing concepts and various strategic issues of marketing also their implication on business and organisational performance. Students will be taught the necessary skills and knowledge in preparing an effective marketing report on products and services to be marketed. Among the topics covered are marketing strategies, marketing analysis, marketing negotiations and marketing mix. This course provides training as competent marketers.

DFDC 1043 Principles of Accounting

The course covers on techniques and methods to understand and apply the concepts, rules, and standards of Accounting, the accounting cycle, the financial reporting and interpreting, and the use of financial information for planning, organising, and monitoring business organisations. Among the topics covered are Accounting Principles and Concepts; Accounting Cycle; Accounting for Assets, Liabilities and Equities; Financial Statements Reporting and Analysis; Cost Volume Profit Analysis; Budgeting; and Accounting Information System. Students will gain

knowledge and skills in managing financial resources and apply techniques and methods in financial decision ethically that will contribute to the organisation's strategy.

DFDC 1613 Human Resource Management

Human Resource Management (HRM) is increasingly integrating technology into its practices, leading to the rise of "e-HR", where HR services are delivered through web platforms rather than in-person interactions. This shift requires HR professionals to adapt by not only mastering traditional HR skills but also applying these skills through technology. In this course students will identify key concepts of "e-HR" and understand how technology is transforming HR roles. They will apply this understanding by exploring how "e-HR" impacts areas like e-learning, e-selection, e-performance, and e-compensation. The course will also cover trends in HR service delivery and how technology is expected to shape the future of the HR field.

DFDC 1623 Management of Technology

This course discusses the fundamentals of management of technology in organization and its role in enhancing organizational performance. Topics include the role of

technology management, its importance, development and evaluation of technology management encompassing wealth creation, competitive advantage, technology advancement, technology application, technology life-cycle, R&D in technology, resource management and technology planning. Students will acquire necessary competencies in managing various technologies in organizations in response to change hence contributing to both organizational and national economic development.

DFDC 1633 Information System Management

Information System (IS) literacy is an important asset in organizations in which constantly change. This subject is not just about the tools and computer software but also covers IS relating to organizational operations, decision-making and strategies. It teaches students to understand, apply IS as a management tool and an effective tool in decision making.

DFDC 1643 Supply Chain Principles

This subject provides students with the exposure on the knowledge of the strategic business operations process, focusing specifically on the formation of the supply chain and logistics management process. It

is to consider supply chain management as an integrated logistics management process across the full scope of business activities, from the sourcing of raw materials from suppliers to the delivery of goods and services to the final customers and consumers. Throughout the course, students will be exposed to the ability to comprehend and analyse the real life problems solving case studies assessments. Students are expected to have strong foundation and synthesis of the many critical sides of supply chain and logistics management. By end of this course, students should able to define, discuss, understand and apply the business strategies and tactics learnt in the industry.

DFDC 1653 Principles of Finance

The course discussed on techniques and methods to identify, explain and use of financial information in order to identify the strength and weakness of each organization. Among the topics covered are evaluation of financial performance, financial planning and forecasting, budgeting, risk and return and cost of capital. Besides the course also covers on evaluation of company's performance by using a common financial tools. Students will gain knowledge and skills in selecting and managing financial resources and apply techniques and methods in financial

decision ethically that will contribute to the organization's strategy. reduce the investor's overall risk. reduce the investor's overall risk.

DFDC 2603 Business Law and Cyber Law

This subject provides students with knowledge of various business laws and cyber laws governing e-commerce in Malaysia. It also provides exposure on legal responsibilities of business owners. Knowledge on legal aspects and specific situations will be applied such as professional accountability and consumer protection.

DFDC 2613 Operations Management

This course involves the study of concepts relating to the operations functions in both manufacturing and service organizations. The operations process is responsible for planning, organizing, and controlling resources in order to efficiently and effectively produce goods and services so as to meet the goals of an organization.

DFDC 2623 Digital Entrepreneurship

Digital entrepreneurs operate independently through digital platforms, leveraging information technology (IT) and digital media technologies to identify potential customers. These tools have enabled

internet entrepreneurs to promote their businesses beyond their local communities. Hence, this course aims to examine digital entrepreneurship in depth, providing a comprehensive understanding of the digital economy and digital technology's transformative impact. The rapid advancement of technology has generated new opportunities for entrepreneurs in learning, communication, innovation, and entertainment, as well as the creation of innovative business models and the promotion of disruptive innovation. This course is an invaluable resource for aspiring digital entrepreneurs, providing them with a solid foundation in digital technology and a variety of practical skills, such as content creation, that will enable them to responsibly and successfully leverage the potential of digital technology. The course examines the evolution of digital entrepreneurship, essential principles, various digital business models, and the critical resources required to build successful businesses. This course is crucial to students' entrepreneurial success because it provides them with the confidence and practical knowledge they need to handle challenges in the digital economy.

DFDC 2633 Business Analytics

Business Analytics equips students with the knowledge and skills to apply data analytics techniques to derive insights and create predictive models from diverse business data. This course provides students with the essential principles and resources necessary to understand the developing significance of business analytics in organisations. This course utilises fundamental business analytics technologies inside a spreadsheet. Students will receive an introduction to computer analytics software and will be instructed to utilise computer software packages for data analysis.

DISCIPLINE CORE COURSE (K)

DFDC 2013 E-Commerce Business Model and Concept

This course provides a comprehensive understanding of E-commerce business models and concepts, enabling students to analyze and implement effective strategies for online business. Topics include the fundamentals of E-commerce, various business models, revenue streams, and emerging trends.

DFDC 2023 E-Commerce Marketing Concept and Communication

This course offers an in-depth exploration of the principles and strategies of e-commerce marketing, equipping students with the knowledge and skills to navigate the digital marketplace effectively. Throughout the 14-week course, students will delve into various aspects of e-commerce, from foundational concepts to advanced marketing strategies and communication tools tailored to online platforms.

DFDC 2663 Digital Media in Marketing

This course provides a comprehensive exploration of digital media's role in contemporary marketing strategies. Students will learn to develop, implement, and evaluate digital media campaigns using various tools and platforms. Through hands-on projects and practical applications, this course aims to equip students with the essential skills and knowledge required to succeed in the rapidly evolving digital marketing landscape.

DFDC 2673 Online Content and Digital Media Development

This course equips students with the skills and knowledge to develop and manage online content and digital media effectively.

It covers the entire content development process, including content creation, optimization, and analysis. Students will explore various content types such as blog posts, videos, podcasts, and infographics and learn to tailor content strategies to different platforms and audiences. The course emphasizes practical applications, allowing students to produce and evaluate digital content while using data to refine their strategies.

DFDC 2683 Online Retailing and Services

This course delves into the essential elements of online retailing and services, covering the strategic and operational aspects necessary for success in the e-commerce industry. It explores the design, management, and optimization of online retail platforms, emphasizing productivity, quality management, and strategic decision-making. Students will gain insights into effective practices and technologies used in the field, culminating in a practical application through a final project.

DFDC 2033 E-Commerce Web Design

This subject discusses contemporary views on e-commerce web design. General explanation on internet and World Wide Web

and followed by the introduction to the recent web technology and web services.

DFDC 2043 E-Commerce Infrastructure Development

This course provides an in-depth exploration of e-commerce infrastructure, focusing on the design, development, and management of infrastructure to support scalable and secure online business ventures. Students will gain practical insights into the components, technologies, and strategies essential for effective e-commerce infrastructure planning.

WORK-BASED LEARNING (WBL)

DFDC 1663 Quality Management

This course covers basic and total quality approach in quality management and provides students with the skills for them to define, design, measure, analyze, improve and control the quality management in their respective organizations. Once the students learned from this course, they will obtain generic and transferable skills applicable via WBL approach for industries and realizing the nations mission in creating technical workforces.

DFDC 1673 Project Management

This course provides foundation and knowledge of project management. Students will be exposed to various body of knowledge and institutions related to project scope management, project life cycle, project organization. Through out semester, students be give the well-round knowledge of theories, project management process and the skills required to manage a project effectively. Besides that, the course will provide students the opportunity to learn, acquire in-demand workforce applicable skill. Last but not least, students also will have opportunity to explore various methods and approaches of project management and project management software.

DFDC 2602 Ethical, Legal and Social Issues in E-Commerce

This course aims to provide students with a comprehensive understanding of the ethical, legal, and social considerations associated with e-commerce. As e-commerce technology continues to reshape the business landscape, it is crucial for e-commerce professionals to navigate and address issues related to marketing, e-commerce business practices, moral development, good governance, integrity and IT security. Through this course, students

will develop the knowledge and skills necessary to make ethical decisions, comply with relevant legal and contribute positively to the sustainable social aspects of e-commerce.

DFDU 2634 Diploma Project

Diploma project is a carry out technical report formatting projects conducted by students based on industrial issues. Students need to provide solution proposal under the supervision of the lecturer and Industrial Practitioner.

DFDU 3648 Industrial Training

Students must do the internship no less than 16 weeks in an organisation which placed by the university or they have chosen. Throughout the internship, students are guided and monitored by the industrial supervisor. Students are required to report their internship's activities in their log book. The faculty supervisor will visit the student twice; throughout the 16 weeks period.

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