



**UNIVERSITI  
KUALA LUMPUR**

**Malaysian Institute of Chemical &  
Bioengineering Technology**

**Programme Handbook  
January 2022 Intake  
(DCF)**

***Disclaimer:***

*The Programme Handbook Diploma January 2022 Intake (DCF)  
is meant for the students for Diploma January 2022 Intake (DCF).*

*Universiti Kuala Lumpur and  
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## Vision & Mission of University

# CORPORATE STRATEGY



## VISION

TO BE THE LEADING ENTREPRENEURIAL TECHNICAL UNIVERSITY







## MISSION

TO PRODUCE ENTERPRISING GLOBAL TECHNOPRENEURS

# Academic Activities Calendar 2022

DESCRIPTION	JANUARY SEMESTER
Semester Registration for Returning Students	<b>Week 0 - 1</b>
Online Semester Registration is <b>CLOSED</b>	<b>Week 2</b>
Late Semester Registration	<b>Week 1</b>
Appeal to Reactivate Student Status	<b>Week 4</b>
Deferment from Study After Week 5 – Pay full Tuition Fees & subjects will recorded as 'W'	<b>Week 1 – 9</b>
Add Subject <b>(ONLINE - ECITIE)</b>	<b>Week 0 – 1</b>
Drop Subject <b>(ONLINE- ECITIE)</b>	<b>Week 1 – 4</b>
Verifying Subject Registration <b>(ONLINE - ECITIE)</b>	<b>Week 3 – 4</b>
Correction of records only on: a) Wrong Subject Code b) Change Subject Group  After Week 4 – Penalized at minimum RM50 for each request.  After Week 9 - Penalized at minimum RM100 for each request.	<b>Week 2 – 4</b>
	<b>Week 5 – 9</b>
	<b>Week 10 onwards</b>
Subject Withdrawal <b>(MANUAL - FORM)</b>	<b>Week 5 – 9</b>
Subject Pre-Registration <b>ONLINE – ECITIE</b>	<b>Week 11 – 12</b>
Draft of Final Examination Timetable released	<b>Week 10</b>
Final Examination Timetable released	<b>Week 12</b>
BAR List released	<b>Week 15</b>
<b>FINAL EXAMINATION</b>	<b>Week 16 - 17</b>

## Academic Top Management Team UniKL MICET

	<p>Associate Professor Ts. Dr Ruzainah binti Ali@Jaafar              Dean of UniKL MICET              Email: <a href="mailto:ruzainah@unikl.edu.my">ruzainah@unikl.edu.my</a>              Phone: 06-551 2146</p>
	<p>Dr Raja Nazrul Hakim bin Raja Nazri              Deputy Dean Academic and Technology              Email: <a href="mailto:rajanazrul@unikl.edu.my">rajanazrul@unikl.edu.my</a>              Phone: 06-551 2077</p>
	<p>Azu Farhana binti Anuar              Deputy Dean Student Development &amp; Campus Lifestyle              Email: <a href="mailto:azufarhana@unikl.edu.my">azufarhana@unikl.edu.my</a>              Phone: 06-551 2136</p>
	<p>Ts Dr Muhamad Yusuf bin Hasan              Deputy Dean IIIP              Email: <a href="mailto:muhamadyusuf@unikl.edu.my">muhamadyusuf@unikl.edu.my</a>              Phone: 06-551 2077</p>

# Academic Staff Member of UniKL MICET

## Academic Staff Member of UniKL MICET

### TECHNICAL FOUNDATION SECTION

SL: STUDY LEAVE  
SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	MS. ZAIDA RAHAYU BINTI YET (Head of Section)	MASTER OF SCIENCE	SENIOR LECTURER
2.	MR. ABDUL HAKIM BIN HJ ABU BAKAR	MASTER ELECTRICAL ENGINEERING	SENIOR LECTURER
3.	MS. ASIMI ANA BINTI AHMAD	MASTER OF ENGINEERING (CHEMICAL)	LECTURER
4.	MS. AZLINA DIN	MASTER OF COMPUTER SCIENCE	LECTURER
5.	HANIZA BINTI KAHAR (Ts.)	MASTER OF SCIENCE (ANALYTICAL CHEMISTRY & INSTRUMENT)	LECTURER
6.	MS. IZUME AYUNA BINTI MOHAMED KHAMIL	MASTER OF INFORMATION TECHNOLOGY	LECTURER
7.	MR. MOHD NASIR MAHMUD	MASTER OF MATHEMATICS	LECTURER
9.	MR. MOHD NIZAM BIN ZAHARI	MASTER OF ENGINEERING TECHNOLOGY (GREEN & ENERGY EFFICIENT BUILDINGS)	LECTURER
10.	NAZATULSHIMA BINTI HASSAN (Dr)	PhD (BIOSTATISTIC)	SENIOR LECTURER
11.	MS. NURUL NABIHAH BINTI RAHMAN	MASTER OF ENGINEERING MATHEMATICS	LECTURER
12.	SITI HARTINI BINTI HAMDAN (Ts. Dr)	PhD (MECHANICAL ENGINEERING) TRIBOLOGY	SENIOR LECTURER
13.	MS. SITI NUR ELMI BINTI ABDUL AZIZ	MASTER OF SCIENCE	LECTURER
14.	MS. TEO SIEW HWAY	MASTER OF INFORMATION TECHNOLOGY	LECTURER
15.	MS. YUSHAZAZIAH BINTI MOHD YUNOS	MASTER OF SCIENCE (MECHANICAL ENGINEERING)	LECTURER
16.	MS. NORHAYATI BINTI MOHD IDRUS	MASTER OF SCIENCE	LECTURER

## PROCESS ENGINEERING TECHNOLOGY SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	MOHD. RAZEALY BIN ANUAR (Dr.) (Head of Section)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
2.	AHMAD AZAHARI BIN HAMZAH (Dr)	PhD (ELECTRICAL ENGINEERING)	SENIOR LECTURER
3.	MS. AIZA SYUHANIZ BINTI SALLEH	MASTER OF ENGINEERING	LECTURER
4.	ALIFF RADZUAN BIN MOHAMAD RADZI (Ts. Dr)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
5.	AMIN SAFWAN BIN ALIKASTURI (Dr)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
6.	MR. AZRIN BIN ABDUL RAHMAN	MASTER OF SCIENCE (PROCESS PLANT MANAGEMENT)	SENIOR LECTURER
7.	MS. FARIDAH BINTI GHAFAR	MASTER OF SCIENCE	SENIOR LECTURER
8.	INDOK NURUL HASYIMAH BINTI MOHD AMIN (Assoc. Prof. Dr.)	PhD (CHEMICAL ENGINEERING & PROCESS)	ASSOCIATE PROFESSOR
9.	KELLY YONG TAU LEN (Assoc. Prof. Dr.)	PhD (MECHANICAL SCIENCE & ENGINEERING)	ASSOCIATE PROFESSOR
10.	LAW JENG YIH (Dr)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
11.	MS. MARMY ROSHAIDAH BINTI MOHD SALLEH	MASTER OF ENGINEERING	LECTURER
12.	MS. NADIA BINTI ISA (SL)	MASTER OF SCIENCE	SENIOR LECTURER
13.	MS. NAZERAH BINTI AHMAD	MASTER OF ENGINEERING	LECTURER
14.	NOR AINI BINTI BUROK (Ts.)	MASTER OF INDUSTRIAL SAFETY MANAGEMENT	SENIOR LECTURER
15.	NOR SHAHIRAH BINTI MOHD NASIR (Dr)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
16.	MS. NORULAKMAL BINTI NOR HADI	MASTER OF SCIENCE	SENIOR LECTURER
17.	MS. RABIATUL ADAWIAH BINTI MAT NOOR (SL)	MASTER OF SCIENCE	LECTURER
18.	MR. SYAHIDI FADZLI BIN ALFAN	MASTER OF SCIENCE (INDUSTRIAL & TECHNOLOGY MANAGEMENT)	LECTURER
19.	MR. SYED AZHAR BIN SYED AB RAHMAN	MASTER OF SCIENCE (CHEMICAL ENGINEERING)	SENIOR LECTURER
20.	WAN NOOR AIDAWATI BINTI WAN NADHARI (Dr.)	PhD (BIORESOURCE, PAPER AND COATINGS TECHNOLOGY)	SENIOR LECTURER
21.	ZAINAL ABIDIN BIN MOHD YUSOF (Ts.)	MASTER OF SCIENCE	SENIOR LECTURER

22.	ZULHAFIZ BIN TAJUDIN (Ts. Dr.)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
23.	MS. ZURAIDAH BINTI RASEP (SL)	MASTER OF ENGINEERING	LECTURER

## BIOENGINEERING TECHNOLOGY SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	MS. FARA WAHIDA BINTI AHMAD HAMIDI (Head of Section)	MASTER OF SCIENCE (BIOPROCESS ENGINEERING)	LECTURER
2.	LEONG CHEAN RING (Dr)	PhD IN MEDICINE	SENIOR LECTURER
3.	MOHAMAD ZULKEFLEE BIN SABRI (Ts. Dr)	MASTER OF ENGINEERING	LECTURER
4.	NIK IDA MARDIANA BINTI NIK PA (Dr.)	MASTER OF SCIENCE	SENIOR LECTURER
5.	MS. NORHANI BINTI JUSOH (SL)	MASTER OF ENGINEERING	SENIOR LECTURER
6.	MS. NURDIYANA BINTI HUSIN	MASTER OF SCIENCE	LECTURER
7.	NURUL FAEZAWATY BINTI JAMALUDIN (Ts.)	MASTER OF SCIENCE	SENIOR LECTURER
8.	ROZYANTI BINTI MOHAMAD (Ts. Dr)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
9.	RUZAINAH BINTI ALI @JAAFAR (Assoc. Prof. Dr.)	PhD (BIOTECHNOLOGY)	ASSOCIATE PROFESSOR
10.	TONG WOEI YENN (Dr.)	PhD IN MICROBIOLOGY	SENIOR LECTURER
11.	ZAINATUL 'ASYIQIN BINTI SAMSU (Ts. Dr)	MASTER OF SCIENCE	LECTURER

## ENVIRONMENT AND POLYMER ENGINEERING TECHNOLOGY SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	FAHMI ASYADI BIN MD YUSOF (Dr) (Head of Section)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
2.	AMELIA BINTI MD SOM (Dr)	PhD (GEOENVIRONMENT ENGINEERING)	SENIOR LECTURER
3.	AHMAD NAIM BIN AHMAD YAHAYA (Assoc. Prof. Ts. Dr.)	PhD (ENVIRONMENT ENGINEERING TECHNOLOGY)	ASSOCIATE PROFESSOR
4.	MS. KHAIRUL NADIAH BINTI IBRAHIM	MASTER OF TECHNOLOGY	SENIOR LECTURER
6.	MR. MOHD SYAZWAN BIN MOHD GHAZALI (SL)	MASTER OF SCIENCE	LECTURER
7.	NOR ZALINA BINTI KASIM (Dr.)	PhD (CIVIL ENGINEERING)	SENIOR LECTURER
8.			
9.	ROBERT THOMAS BACHMANN (Prof. Dr.)	PhD (ENVIRONMENTAL ENGINEERING TECHNOLOGY)	PROFESSOR
10.	SITI NOORAIN BINTI ROSLAN (Dr)	DOCTOR OF ENGINEERING (CIVIL & ENVIRONMENTAL ENGINEERING)	SENIOR LECTURER
11.	Ts. Dr NORILHAMIAH BINTI YAHYA	PhD (FUEL CELL ENGINEERING)	SENIOR LECTURER
12.	MS. MAZLINA BINTI GHAZALI (Ts.)	BACHELOR OF ENGINEERING (HONS) IN POLYMER ENGINEERING	ASST. LECTURER
13.	MR. MOHD EDYAZUAN BIN AZNI (SL)	MASTER OF ENG. TECH. (GREEN & ENERGY EFFICIENT BUILDINGS)	LECTURER
14.	MR. MUAZZIN BIN MUPIT	MASTER OF SCIENCE	SENIOR LECTURER
15.	MUZAFAR BIN ZULKIFLI (Ts. Dr.)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
16.	NOOR FAIZAH BINTI CHE HARUN (Dr)	DOCTOR OF ENGINEERING (ENVIRONMENTAL CHEMISTRY & ENGINEERING)	SENIOR LECTURER
17.	NOR NADIAH BINTI MOHAMAD YUSOF (Dr)	PhD (ENERGY & ENVIRONMENT SCIENCE)	SENIOR LECTURER
18.	ONG SIEW KOOI (Assoc. Prof. Ts. Dr.)	PhD (POLYMER TECHNOLOGY)	ASSOCIATE PROFESSOR
19.	RAJA NAZRUL HAKIM BIN RAJA NAZRI (Dr)	PhD (MATERIAL & METALLURGICAL ENGINEERING)	SENIOR LECTURER
20.	NADIA BINTI RAZALI (Dr.)	PhD (CONSTRUCTION)	SENIOR LECTURER
21.	MS. SUHAINI BINTI MAMAT	MASTER OF ENGINEERING	LECTURER
22.	YUSRIAH BINTI LAZIM (Dr.)	PhD IN MATERIAL SCIENCE AND ENG.	SENIOR LECTURER
23.	ZAIHAR BIN YAACOB (Dr.)	MASTER OF ENGINEERING	SENIOR LECTURER

## FOOD ENGINEERING TECHNOLOGY SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	SITI FATIMAH BINTI IBRAHIM (Dr.) (Head of Section)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
2.	ABDUL MANAN BIN DOS MOHAMED (Assoc. Prof. Dr.)	PhD (BIOSCIENCE & BIOTECHNOLOGY)	ASSOCIATE PROFESSOR
3.	MS. FARAH SALINA BINTI HUSSIN	PhD (FOOD BIOTECHNOLOGY)	SENIOR LECTURER
4.	HARUN BIN SARIP (Assoc. Prof. Ts. Dr.)	PhD (FOOD TECHNOLOGY)	ASSOCIATE PROFESSOR
5.	KHAIRUL FAIZAL BIN PA'EE (Dr.)	PhD (FOOD & NUTRITIONAL SCIENCE)	SENIOR LECTURER
6.	MS. LILY SUHAILA BINTI YACOB	MASTER OF ENVIRONMENT (ENVIRONMENTAL SCIENCE)	LECTURER
7.	MS. MASNIZA BINTI MOHAMED @ MAHMOOD	PhD (KEJURUTERAAN KIMIA DAN PROSES)	SENIOR LECTURER
8.	NOR ZANARIAH BINTI SAFIEI (Dr.)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
9.	NORIZA BINTI AHMAD (Ts. Dr)	PhD (FOOD SCIENCE & TECHNOLOGY)	SENIOR LECTURER
10.	MS. RINANI SHIMA BINTI ABD. RASHID (SL)	MASTER OF SCIENCE (FOOD TECHNOLOGY)	SENIOR LECTURER
11.	SHARIFAH SOPLAH BINTI SYED ABDULLAH (Ts Dr)	PhD (ENVIRONMENTAL ENGINEERING)	SENIOR LECTURER
12.	MUHAMAD YUSUF BIN HASAN (Ts. Dr.)	MASTER OF SCIENCE (PROCESS PLANT MANAGEMENT)	SENIOR LECTURER
13.	MOHD ZULKHAIRI BIN ABDUL RAHIM (Dr)	PhD (CHEMISTRY)	SENIOR LECTURER
14.	MR. MUHAMMAD SHARIR BIN ABDUL RAHMAN	MASTER OF CHEMICAL ENGINEERING	LECTURER
15.	SHARIFAH MARIAM BINTI SAYED HITAM (Ts. Dr.)	PhD (BIOPROCESS ENGINEERING)	SENIOR LECTURER

## CHEMICAL ENGINEERING SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	NOOR AINA BINTI MOHD NAZRI (Dr.) (Head of Section)	PhD IN ENGINEERING (GAS)	SENIOR LECTURER
2.	WONG CHEE SIEN (Dr.)	PhD (BIOPROCESS ENGINEERING)	SENIOR LECTURER
3.	CHIN LIP HAN (Dr.)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
4.	CHONG YUAN FOONG (IR.)	BACHELOR OF ENGINEERING (CHEMICAL)	SPECIALIST
5.	FARRA WAHIDA BINTI SHAARANI (Dr.)	PhD (CHEMICAL PROCESS ENGINEERING)	SENIOR LECTURER
6.	MS. NOR NABIHA BINTI MD ZAN	MASTER (ENGINEERING SCIENCE)	LECTURER
7.	RAPIDAH BINTI OTHMAN (Dr)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
8.	SITI NURUL ATIKAH BINTI ABD HALIM (Dr.)	PhD (CHEMICAL ENGINEERING)	SENIOR LECTURER
9.	YUHANEES BINTI MOHAMED YUSOF (Dr.)	PhD (APPLIED SCIENCE)	SENIOR LECTURER
10.	SUZANA BINTI WAHIDIN (Assoc. Prof. Dr)	PhD (BIOPROCESSING ENGINEERING)	ASSOCIATE PROFESSOR

## STUDENT DEVELOPMENT SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	MS. INTAN NORJAHAN BINTI AZMAN (Head of Section)	MASTER OF ARTS IN ENGLISH LANGUAGE	LECTURER
2.	ANISAH BAHYAH AHMAD (Dr.)	PhD (ISLAMIC CIVILIZATION)	SENIOR LECTURER
3.	AZMAN BIN YUSOF (Assoc. Prof. Dr.)	PhD (PHILOSOPHY AND CIVILIZATION STUDIES)	ASSOCIATE PROFESSOR
4.	AZU FARHANA BINTI ANUAR	MASTER OF ARTS (ENGLISH COURSE)	LECTURER
5.	MS. MARIATI BINTI MOHD SALLEH	MASTER OF EDUCATION	LECTURER
6.	MS. NOORHAYATI BINTI SAHARUDDIN	MASTER OF ARTS IN ENGLISH LANGUAGE	SENIOR LECTURER
7.	MS. ROSIAH BINTI OTHMAN	MASTER OF CORPORATE COMMUNICATION	LECTURER
8.	MS. SA'ADIAH BINTI HUSSIN	MASTER OF SCIENCE (CORPORATE COMMUNICATION)	SENIOR LECTURER

## IIIP SECTION

SL: STUDY LEAVE

NO.	NAME	HIGHEST QUALIFICATION	DESIGNATION
1.	MR. ABD RAZAK BIN HAJI MOHD YUSOFF	MASTER OF BUSINESS ADMINISTRATION	LECTURER
2.	MR. NORAZMI BIN OMAR	MASTER OF BUSINESS ADMINISTRATION	LECTURER

# PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

- 1) knowledgeable, competent and innovative which will contribute towards the requirement of the human capital in chemical and/or process/food/polymer/bioprocess/environment engineering technology related industry.
- 2) Effective leaders with teamwork, skills as well as verbal and non-verbal interpersonal communications skill;
- 3) Committed towards the importance of lifelong learning and continuous improvements;
- 4) Professional, ethical, and socially responsible; and
- 5) Capable of embarking on business and technopreneurial activities.

# PROGRAMME LEARNING OUTCOMES (PLO)

PLO 1	Apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices in chemical and process/food/polymer/bioprocess/environment engineering technology.
PLO 2	<b>Problem analysis:</b> Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4).
PLO 3	<b>Design/development of solutions:</b> 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, cultural, societal, and environmental considerations (DK5).
PLO 4	<b>Investigation:</b> Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.
PLO 5	<b>Modern Tool Usage:</b> Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)
PLO 6	<b>The Engineer and Society:</b> Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7).
PLO 7	<b>Environment and Sustainability:</b> Understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts.
PLO 8	<b>Ethics:</b> Understand and commit to professional ethics and responsibilities and norms of technician practice.
PLO 9	<b>Individual and Team Work:</b> Function effectively as an individual, and as a member in diverse technical teams.
PLO 10	<b>Communications:</b> Communicate effectively 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.
PLO 11	<b>Project Management and Finance:</b> Demonstrate knowledge and understanding of engineering management principles, business practices, and technopreneurial competencies, as well as identify business opportunities, and apply these to one's own work, as a member and leader in a technical team and to manage projects in multidisciplinary environments.
PLO 12	<b>Life Long Learning:</b> Recognize the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge.

# **TYPES OF COURSES**

- 1. NATIONAL REQUIREMENT**
- 2. UNIVERSITY REQUIREMENT**
- 3. COMMON CORE**
- 4. DISCIPLINE CORE**

## **NATIONAL REQUIREMENT**

**MPU2313 AMALAN ISLAM DI MALAYSIA**  
**MPU2323 RELIGIOUS PRACTICES IN MALAYSIA**  
**MPU2213 BAHASA KEBANGSAAN (A)**  
**MPU2232 INTERPERSONAL SKILLS**  
**MPU 2133 BAHASA MELAYUKOMUNIKASI 1**  
**MPU 2163 PENGAJIAN MALAYSIA 2**  
**MPU2412 CAREER GUIDANCE 1**  
**MPU2422 COMMUNITY SERVICE1**  
**MPU2432 CULTURE 1**  
**MPU2442 RAKAN MASJID 1**  
**MPU2452 SISWA-SISWI BOMBA DAN PENYELAMAT 1**  
**MPU2462 SISWA-SISWI PERTAHANAN AWAM 1**  
**MPU2472 SPORTS MANAGEMENT 1**  
**MPU2482 PERSONAL FINANCIAL MANAGEMENT 1**  
**MPU24102 INTEGRITI & ANTI-RASUAH**

## **MPU2313 AMALAN ISLAM DI MALAYSIA**

Kursus ini membincangkan aspek-aspek amalan Islam yang diaplikasikan di Malaysia. Perbincangan ini meliputi konsep manusia dan agama, asas-asas Islam dan sejarah kedatangan agama Islam di Malaysia serta menerangkan keistimewaan Islam melalui institusi pendidikan, kekeluargaan, ekonomi dan pentadbiran di Malaysia. Di samping itu, perbincangan juga dilengkapi dengan isu-isu semasa dalam masyarakat berlandaskan ajaran Islam.

### **Learning Outcomes:**

Setelah tamat kursus ini, pelajar akan dapat:

1. Menghuraikan konsep manusia dan agama, asas-asas Islam dan sejarah kedatangan agama Islam di Malaysia.
2. Menguasai ibadat solat dengan betul, menghafal doa-doa selepas solat dan menghafal ayat-ayat al-Quran yang ditetapkan
3. Menerangkan keistimewaan Islam melalui institusi pendidikan, kekeluargaan, ekonomi dan pentadbiran di Malaysia
4. Menjelaskan isu-isu semasa dalam masyarakat berlandaskan ajaran Islam

### **References:**

1. Azis Jakfar Soraji. (2012). ***Pengajian Islam***. Shah Alam, Oxford Fajar.
2. Nasrudin Yunus et.al (2007). ***Pengajian Islam***. Shah Alam, Oxford Fajar.
3. Paizah Ismail, (2008) *Hudud: Hukum dan Pelaksanaan*. Shah Alam: Karya Bestari.

## **MPU2323 RELIGIOUS PRACTICES IN MALAYSIA**

This course enables students to understand their roles in developing the nation by exposing them to the influence of religions on the lives of Malaysians, Students should also be able to understand their roles as members of the society according to the constitutions of Malaysia.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the concept of man and religion
2. Describe the practices of religion as stated in Malaysian constitution
3. Explain current issues related to various religions practiced in Malaysia.

### **References:**

1. Saw Swee-Hock (2015). *The Population of Malaysia (Second Edition)*, ISEAS Publishing, Singapore.
2. Mohd. Azizuddin Mohd Sani (2014), *Politics of Religious Expression in Malaysia*. ISEAS Publishing, Singapore.
3. Gerhard Hoffstaedter (2011), *Modern Muslim Identities: Negotiating Religion and Ethnicity in Malaysia*. NIAS Press.

## **MPU2213 BAHASA KEBANGSAAN (A)**

Mata pelajaran Bahasa Kebangsaan (A) ini disediakan untuk mempertingkatkan kecekapan berbahasa, sesuai dengan intelek pelajar untuk berkomunikasi dengan berkesan secara lisan dan tulisan dalam konteks rasmi, kreatif dan bukan kreatif.

### **Learning Outcomes:**

Setelah tamat kursus ini, pelajar akan dapat:

1. Mengetahui asal usul dan perkembangan Bahasa Melayu
2. Berkomunikasi secara lisan dengan berkesan dari segi sebutan dan intonasi,serta menggunakan struktur tatabahasa yang betul
3. Menghasilkan pelbagai jenis teks dengan bahasa yang betul dan berkesan serta mampu berkomunikasi secara lisan dan bertulis dalam pelbagai situasi.

### **References:**

1. Siti Hajar Abdul Aziz. (2011) *Bahasa Melayu 1*. Kuala Lumpur: Oxford Fajar
2. Adenan Ayob (2009). Bahasa Kebangsaan. Shah Alam. Oxford Fajar.
3. Nik Safiah Karim et al. (2006) *Tatabahasa Dewan*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
4. Dewan Bahasa dan Pustaka (2007). Kamus Dewan. Edisi Keempat. Kuala Lumpur: Dewan Bahasa dan Pustaka, Kementerian Pendidikan Malaysia

## **MPU2232 INTERPERSONAL SKILLS**

This course is aimed directly at fostering one's aspect of Interpersonal skills namely communication skills; leadership; teamwork; problem-solving and decision-making skills. Students' abilities to participate and interact with others effectively are addressed through individual tests and group projects.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply the principles of intrapersonal and interpersonal skills.
2. Communicate effectively using various communication media.
3. Demonstrate leadership and teamwork skills.

### **References:**

1. Wood, J.T. (2016) *Interpersonal Communication: Everyday Encounters*. 8<sup>th</sup> Edition. Chapel Hill: University of North Carolina.

## **MPU 2133 BAHASA MELAYU KOMUNIKASI 1**

Kursus ini melatih pelajar antarabangsa untuk berkomunikasi dalam bahasa Melayu asas yang meliputi situasi kehidupan harian. Pelajar akan diperkenalkan dengan pertuturan dan penulisan bahasa Melayu mudah. Pengajaran dan pembelajaran akan dilaksanakan dalam bentuk kuliah, tutorial, tugas dan pengalaman pembelajaran pelajar di dalam dan di luar kelas. Pada akhir kursus ini, pelajar diharapkan dapat berkomunikasi dan menggunakan ayat mudah dengan berkesan.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Menerangkan kandungan teks penuh yang menggunakan ayat mudah dan ayat berlapis..
2. Bertutur dalam pelbagai situasi dengan menggunakan ayat mudah dan ayat berlapis;
3. Menyusun idea secara kreatif dan sistematik dalam penulisan karangan pendek.

### **References:**

1. Kamarul Afendey Hamimi. 2015. Bahasa Melayu Komunikasi Oxford Fajar Sdn.Bhd Zarina Othman, Roosfa Hashim & Rusdi Abdullah.2012. Modul Komunikasi Bahasa Melayu Antarabangsa ,KPT: Penerbit UKM Press.
2. Yong Chyn Chye, Rohaidah Mashudi, Maarof Abd Rahman, 2012. Bahasa Kebangsaan untuk pelajar luar negara: Malay language for international students. Petaling Jaya : Pearson Malaysia.
3. Adenan Ayob. 2009. Bahasa Kebangsaan. Shah Alam: Oxford Fajar.
4. Siti Hajar Abdul Aziz. 2008. Siri Pendidikan Guru Bahasa Melayu I. Shah Alam: Oxford Fajar Sdn. Bhd.

## **MPU 2163 PENGAJIAN MALAYSIA 2**

Kursus ini membincangkan Sejarah dan Politik, Perlembagaan Malaysia, Sistem dan Struktur Pentadbiran Negara dan Agama Kepercayaan. Kursus ini adalah bertujuan untuk melahirkan graduan yang mempunyai identiti kebangsaan dan semangat patriotisme yang unggul. Pengajaran dan pembelajaran akan dilaksanakan dalam bentuk kuliah, tugas, peperiksaan dan pengalaman pembelajaran.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Menghurai dan membahaskan kepelbagaian dalam masyarakat.
2. Mengulas kepentingan identiti kebangsaan ke arah mengukuhkan semangat patriotisme.
3. Membina dan memupuk hubungan dan interaksi sosial dalam kalangan pelajar.

### **References:**

1. Mardiana Nordin & Hasnah Hussiin. 2014. Pengajian Malaysia (Edisi Kelima), Shah Alam : Oxford Fajar .
2. Abdul Halim Ramli, 2015, Perlembagaan Malaysia: Isu dan Persoalan Perhubungan Kaum, Dewan Bahasa dan Pustaka : Kuala Lumpur.

## **MPU2412 CAREER GUIDANCE 1**

This course is one of the co-curriculum modules offered to develop well-rounded individuals through involvement in social and community activities. Specifically, it enables student to understand the important of career planning. It also promotes soft skills that can be applied in their future careers. Apart from that, it creates a better understanding about potential employers' expectations in job hunt.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply appropriate interpersonal skills in building up their own towering personalities
2. Differentiate their self-concept and self-image which reflect their personalities
3. Demonstrate ability to plan their future career and targets.

### **References:**

1. Devito, J. A. (2013). The interpersonal communication book (13thed.). U.S.A. Pearson
2. Zulkifli Musa (2008). Malaysia Job Seeker's Dilemma: A Practical Guide on How to Land a Dream Job. Kuala Lumpur: true Wealth Publishing.
3. James A. Athanasou & Raoul Van Esbroeck (2008). International handbook of career guidance. Springer.

## **MPU2422 COMMUNITY SERVICE 1**

This course is one of the co-curriculum modules offered to develop well-rounded individuals through involvement in social and community activities. Specifically, it aims to develop interest among the students to participate in community programs. It also enables student to understand the important of performing of community services and the ways to implement the programmes and activities. Besides that, it provides better understanding to the student on the values, ethics and benefits of carrying out community service programmes.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Organize and participate in the community service programmes and activities.
2. Apply knowledge gain in carrying out community service programmes and activities
3. Apply basic entrepreneurship skills in community service programmes and activities
4. Explain the values ethics and benefits of carrying out community service programmes.

### **References:**

1. Christine M. Cress, Peter J. Collier & Vicki L. Reitenauer. 2013. *Learning Through Serving: A Student Guidebook for Service-Learning and Civic Engagement Across Academic Disciplines and Cultural Communities*. US: Stylus.
2. Pusat Transformasi Komuniti Universiti. 2013. *Berilmu Berbakti 2012: Penglibatan Komuniti Untuk Penajaan dan Perkongsian Ilmu*. Serdang: Penerbit Universiti Putra Malaysia.
3. Saran Kaur Gill, Prabha Deri & Kamelia Shamsuddin. 2012. *The Power of Community Engagement: A Selection of Inspiring Initiatives*. Bangi: Penerbit Universiti Kebangsaan Malaysia.

## **MPU2432 CULTURE 1**

This course is one of the co-curriculum modules offered to develop well-rounded individuals through involvement in social and community activities. Specifically, it aims to develop students' personalities and social interaction skills, as well as foster closer relationship among the student in the university through the organization of and participation in cultural activities.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply knowledge gained in planning and organizing a cultural event.
2. Apply appropriate skills in participating in a cultural event.
3. Explain the benefits of participating in a cultural activity.

### **References:**

1. Hatta. 2013. Teater Film dan Pengurusan Seni. Kuala Lumpur; Dewan Bahasa dan Pustaka.
2. Ab Samad Kechot & Sabzali Musa Kahn. 2011. Pengurusan Artistik: Kajian Mengenai Peranan Set Selaku Tenaga Kreatif Dalam Seni Persembahan Pentas di Malaysia. Bangi: Universiti Kebangsaan Malaysia.
3. Norliza Rofli & Eddin Khoo. 2009. Malaysian Culture: An Introduction. Kuala Lumpur: Jabatan Kebudayaan dan Kesenian Negara.

## **MPU2442 RAKAN MASJID 1**

This course is one of the co-curriculum modules offered to develop well-rounded individuals through involvement in social and community activities. Specifically, it aims to develop students' who understand their roles as Muslims and are responsible to develop the ummah. This course also aims to expose students to the function of mosque as the main institution in developing the Muslim society.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the beauty of Islam in every aspect in their life.
2. Demonstrate several activities in relation to the Muslim practice.
3. Discuss the significance of the organized activities in the course.

### **References:**

1. Mohd Ismail Mustari & Kamarul Hasmi Mustari (2008). Pengimarahen Masjid dalam agenda ummah. Universiti Teknologi Malaysia Press: Skudai
2. Mohd Ismail Mustari & Kamarul Hasmi Mustari (2008). Fungsi dan peranan masjid dalam masyarakat. Universiti Teknologi Malaysia Press: Skudai.
3. Mohd Ismail Mustari & Kamarul Hasmi Mustari (2008). Pengurusan berkualiti memacu kecemerlangan pengurusan masjid. Universiti Teknologi Malaysia Press: Skudai.

## **MPU2452 SISWA-SISWI BOMBADAN PENYELAMAT 1**

This course is one of the co-curriculum modules offered to develop well-rounded individuals through involvement in social and community activities. Specifically, it gives exposure on the introduction to Malaysian Fire Rescue Department, foot marching techniques, fire rescue, ascending and descending technique and basic emergency aid.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Participate actively in Project (theory and practically about BOMBA activities).
2. Communicate and demonstrate leadership and team skills through BOMBA activities (rescue, fire rescue and first aid).
3. Apply appropriate fundamental of rescue, fire rescue and first aid.

### **References:**

1. Akademi Bomba & Penyelamat Malaysia. 2012. *Mencari dan Menyelamat*. Jabatan Bomba dan Penyelamat Malaysia: Kuala Lumpur.
2. Akademi Bomba dan Penyelamat Malaysia. 2012. *Pengenalan Tali, Simpulan dan Ikatan*. Jabatan Bomba dan Penyelamat Malaysia: Kuala Lumpur.
3. Akademi Bomba & Penyelamat Malaysia. 2012. *Kawad Operasi Kebombaan*. Jabatan Bomba dan Penyelamat Malaysia: Kuala Lumpur.

## **MPU2462 SISWA-SISWI PERTAHANAN AWAM 1**

Kursus ini memfokuskan perbincangan tentang peranan dan fungsi Angkatan Pertahanan Awam dan mengaplikasikan ilmu pengetahuan dalam pertolongan cemas, dan kawad kaki. Melalui aktiviti seperti ini, pelajar dapat membuat perancangan, perlaksanaan tugas, pertolongan kecemasan dan aktiviti kebakaran.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Memberi peluang kepada pelajar mendapat pengetahuan dan kemahiran untuk membantu diri sendiri dan orang lain
2. Memupuk nilai/sikap hormat-menghormati, menurut perintah, berdisiplin, bekerjasama, bertanggungjawab, berhemah, kejujuran, keyakinan diri dan kepimpinan
3. Menanam semangat kesedaran sivik, ketaatan dan cintakan negara serta penjagaan alam sekitar
4. Mempertingkatkan ketahanan fizikal, mental dan daya kerohanian yang seimbang.

### **References:**

1. Ahmad Zullaili Zamri & Shariff Harfun (2018). *Asas Pertahanan Awam*. Oxford Fajar, Shah Alam
2. Malaysian Civil Defence Force (2010). *Buku panduan pengurusan kor SISPAA*. Shah Alam: Pusat Penerbitan Universiti (UPENA), UiTM.

## **MPU2472 SPORTS MANAGEMENT 1**

This course is one of the co-curriculum modules offered to develop well-rounded individuals through involvement in social and community activities. Specifically, it aims to provide students with adequate information and understanding on the implementation and rules in sports management. This course also explores various aspects of sports management namely scope, basic principles, technique and current issues pertaining to sport management.

### **Learning Outcomes:**

Upon completion of this course students should be able to

1. Prepare document in order to organize competition.
2. Apply knowledge gained by managing competition.
3. Participate and evaluate the benefits of participating in lecture or practical class related to sport, recreation and leisure.

### **References:**

1. Russell Hoyer, Matthew Nicholson, Aaron Smith, Bob Stewart & Hana Westerbeek (2012). *Sport Management and Application 3rd edition*. Routledge Taylor & Francis.
2. Milena Parent & Sharon Smith-Swan (2012). *Managing Major Sport Events Theory & Practise*. Routledge Taylor & Francis Group.

## **MPU2482 PERSONAL FINANCIAL MANAGEMENT 1**

This course is to educate students on personal financial education. It is to open their minds to things that they should be prepared for financially when they enter the competitive job market. The course explains what they should start doing early in their life to achieve their financial dreams.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply the concept of financial planning, building financial wealth and avoiding financial troubles.
2. Plan and execute financial planning events at campus level.
3. Describe the program implementation.

### **References:**

1. AKPK (2011). *Power!* Kuala Lumpur : Agensi Kaunseling dan Pengurusan Kredit
2. AKPK (2010). *Money Sense: Getting Smart with Your Money*. Kuala Lumpur: Agensi Kaunseling dan Pengurusan Kredit.

## **MPU24102 INTEGRITI & ANTI-RASUAH**

Kursus ini merangkumi konsep asas tentang nilai integriti, bentuk pelakuan rasuah, salah guna kuasa dalam kehidupan seharian dan organisasi serta kaedah pencegahan rasuah, isu dan kes rasuah sebenar dibincangkan dalam sesi pembelajaran.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Menghuraikan nilai integriti dalam kehidupan seharian.

2. Menilai bentuk perlakuan rasuah dan salah guna kuasa dalam kehidupan dan organisasi
3. Mempamerkan nilai integriti dan pencegahan rasuah melalui aktiviti masyarakat

References:

1. Mohd Tarmize (2014). Nota Pencegahan Rasuah, Penerbit Bahagian Pendidikan Masyarakat, Suruhanjaya Pencegahan Rasuah Malaysia.
2. Zulkarnain Abdul Rahman, Ahmad Kamal Ariffin Mohd Rus (2017). Sejarah Perjuangan SPRM Satu Perjalanan, Universiti Malaya, Kuala Lumpur.
3. Rahimah Abdul Rahim (2016). Siri Penyelidikan Pengajian Rasuah: Rausuah, Governans & Integriti. Penerbitan Akademi Pencegahan Rasuah Malaysia.

## **UNIVERSITY REQUIREMENT**

**WED 10402 COMPETENCY ENGLISH**

**WED 20202 COMMUNICATION ENGLISH 1**

**WED 20302 COMMUNICATION ENGLISH 2**

**WMD10101 MANDARIN 1**

**WMD10201 MANDARIN 2**

**WAD10101 ARABIC 1**

**WAD10201 ARABIC 2**

**WBD10102 INTRODUCTION TO ENTREPRENEURSHIP**

**WID41009 INDUSTRIAL TRAINING**

## WED 10402 COMPETENCY ENGLISH

This course focuses on both receptive (reading) and productive (speaking & writing) skills as well as grammar skills. It serves to enhance and strengthen students' proficiency in English. Assessments will be task-based where stimulating exercises and group activities will be employed to motivate students to use the language confidently in various situations..

### Learning Outcomes:

Upon completion of this course students should be able to:

1. Apply correct grammatical components in written form.
2. Express themselves effectively using appropriate language skills through discussion and presentation.
3. Analyze linear and non-linear comprehension texts using appropriate reading skills.
4. Produce written work using correct writing techniques.

### References:

1. Azar, B.S. & Hagen, S.A. (2016). Understanding and using English Grammar (5th ed.) USA: Pearson.
2. West, C. (2010). Reading Techniques with Removable Key. Cambridge: Cambridge University Press
3. .Yat, C.W. (2015). Ace Ahead MUET. Kuala Lumpur: Oxford University Press.

## WED 20202 COMMUNICATION ENGLISH 1

This module is to enhance students' acquisition of English through language enrichment activities. The module enables students to enhance their English language proficiency through written work and oral communication. Students also engage in exploring and responding to ideas through group discussion and conducting a project. Students are then exposed to the fundamentals of presentation skills..

### Learning Outcomes:

Upon completion of this course students should be able to:

1. Apply correct grammatical skills in written form.
2. Produce professional business correspondence documents
3. Organise an event through conducting a group discussion, writing a proposal, presenting and executing the event.

### References:

1. Canavos, N. (2016). Business writing today: A practical guide (2nd edition). CA: SAGE.
2. Sudharshana, N. P. & Savitri, C. (2016). English for Technical Communication. New Delhi: Cambridge University Press.
3. Guffey, M. E. & Loewy, D. (2013). *Essentials of business communication*. Mason, Ohio: South-Western Cengage Learning.

## WED 20302 COMMUNICATION ENGLISH 2

Students are exposed to fundamental writing skills that focus on academic writing. They are also exposed to language structures. In the second part of the course, students are guided to undertake academic writing assignment with consultation and previous writing assignment. In the last part of the course, students need to present based on the academic writing assignment using the learnt presentation skills.

### Learning Outcomes:

Upon completion of this course students should be able to:

1. Use appropriate mechanics in writing effectively.
2. Produce essay using mechanics of writing techniques.
3. Prepare academic report by incorporating relevant academic resources.
4. Present Information using effective presentation techniques

### References:

1. Rentz, K. & Lentz, P. (2014). *Lesikar's business communication: Connecting in a digital world*. McGraw-Hill Companies.
2. Howard, R. M. (2014). *Writing matters: A handbook for writing and research*. New York: McGraw-Hill.
3. Nor Ainun Zakaria, Aishah Muslim, Mazlin Mohamad Mokhtar, Prapagaran B. K. (2013). *Polytechnic series: Communicative English 3*. Shah Alam, Selangor: Oxford Fajar

## WMD10101 MANDARIN 1

This course introduces the basic grammatical structures of Chinese sentences to acquire the basic oral and written communication skills. The contents of this course are Chinese writing system (including Pinyin), numbers, useful Chinese expressions to greet others, to introduce oneself and family members, date, time, food and beverages.

### Learning Outcomes:

Upon completion of this course students should be able to:

1. Use words & phrases in Pinyin system and/or Chinese characters.
2. Practice basic Chinese language for daily communication within the limits of vocabularies and sentence structures acquired in the course,.
3. Perform learned Chinese vocabularies, phrases or short sentences in limited contexts.

### References:

1. Loi Hing Kee, Tan Hua An (2017). *Learn Mandarin 1*. Petaling Jaya: Cengage Learning Asia Pte Ltd.
2. Lai Siew Yoon, Tan Hua An, Tay Yang Lian. (2013). *Speak Chinese, An Introductory Course to the Chinese Language*. Petaling Jaya: Cengage Learning Asia Pte Ltd.
3. Lai Siew Yoon, Lim Yoke Len. (2010). *Shenghuo Huayu, An Introductory Course to the Chinese Language*. Singapore: Cengage Learning Asia Pte Ltd.

## **WMD10201 MANDARIN 2**

This course introduces the basic grammatical structures of Chinese sentences in order to acquire the basic oral and written communication skills. The contents of this course are useful expressions in Mandarin to activities in university, hobby and interest, shopping and purchases, locations, direction, seeing a doctor and holiday activities.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Use Chinese words, phrases, short sentences about learned topics.
2. Practice Chinese language for daily communication within the limits of vocabularies and sentence structures acquired in the course.
3. Perform learned Chinese vocabularies, phrases or short sentences in various contexts.

### References:

1. Lai Siew Yoon, Tan Hua An, Tay Yang Lian (2013). *Speak Chinese, An Introductory Course to the Chinese Language*. Petaling Jaya: Cengage Learning.
2. Loi Hing Kee, Tan Hua An (2018). *Learn Mandarin 2*. Petaling Jaya: Cengage Learning Asia Pte Ltd.
3. Yamin Ma, Xinying Li. (2007). *Easy Steps to Chinese*. Beijing: Beijing Language & Culture University Press. Available from: <http://www.yes-chinese.com/zh-cn/course/view.html?id=3681>

## **WAD10101 ARABIC 1**

### **Rationale for inclusion of the course in the program:**

This course is intended to expose the student with conversation skill of beginner-level Arabic language. Students will be familiarized with elemental Arabic grammar and be able to construct a Arabic report and essay. This course seeks to develop passion of students to the course, alphabetical, vocabulary, industrial terms, nouns, verbs, basic grammar and explain the benefit of learning Arabic to the students. Student are also expected to be able to write an Arabic sentences.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain basic Arabic grammar within the scope of the course.
2. write basic Arabic sentences and questions based on what they have learnt in the course.
3. Communicate orally in Arabic at a beginner's level.

### References:

1. Amazing Bahasa Arab, Nur Aina Sabariah Md Isa, Akram Hijri Abdullah Akhill, Mohd Aminuddin Ab Rahaman. Oxford Fajar (2017)
2. Mustafa Umar, Perbualan Bahasa Arab, (2012), Darul Nu'man, Kuala Lumpur
3. Othman bin Arifeen, Dr. Mohd Phuzi Usop (2014). *learn Arabic by yourself (Book 6)*, Al-Hidayah Publication, Batu Caves Selangor

## **WAD10201 ARABIC 2**

### **Rationale for inclusion of the course in the program:**

This course is intended to familiarize students with conversational skills in Arabic at a beginner level. It exposes students with basic Arabic grammar in order to enhance their ability to construct a report and essay in the language. This course seeks to develop passionate and self-motivated students of Arabic by enhancing their basic grammatical knowledge in the language as well as their knowledge of daily and industry focused terms and phrases in an Arabic-speaking setting.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Produce written work using Arabic knowledge and skills learnt in the course.
2. Communicate in basic Arabic language in written and verbal form.
3. Prepare project using content and skills learnt in the course.

#### **References:**

1. Amazing Bahasa Arab, Nur Aina Sabariah Md Isa, Akram Hijri Abdullah Akhill, Mohd Aminuddin Ab Rahaman. Oxford Fajar (2017)
2. Mustafa Umar, Perbualan Bahasa Arab, (2012), Darul Nu'man, Kuala Lumpur
3. Othman bin Arifeen, Dr. Mohd Phuzy Usop (2014). learn Arabic by yourself (Book 6), Al-Hidayah Publication, Batu Caves Selangor

## **WBD10102 INTRODUCTION TO ENTREPRENEURSHIP**

This course aims to prepare students with the main characteristics of an entrepreneur and provide basic knowledge and skills in establishing a small venture.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Describe entrepreneurship value and culture
2. Demonstrate the ability to assess business environment
3. Identify entrepreneurship opportunity and explain the process in starting up a business
4. Develop a business idea and participate in entrepreneurship activities

#### **References:**

1. Azahari Jamaludin, Abd Razak Mohd Yusoff, Mohd Hazli Mohd Rusli, Salwah Che Mat & Zawiah Abdul Majid (2011). Introduction to entrepreneurship. Oxford Fajar
2. Donald F. Kuratko (2009). *Entrepreneurship: Theory, process, practice 8th Edition*. South Western Cengage Learning.
3. Azahari Jamaludin, Abd Razak Mohd Yusoff, Mohd Hazli Mohd Rusli, Hamidon Katan, Jimisiah Jaafar, Mohd Fauzi Zainol Abidin, Mohd Radzi Zainuddin, Rosnizza Ramlan, Salwah Che Mat & Zawiah Abdul Majid (2012). *Technopreneurship*. Kuala Lumpur: Oxford Fajar

## **WID41009 INDUSTRIAL TRAINING**

This course exposes students to real industrial environment and gives them the opportunity to practice the knowledge and skills they have acquired during their academic years.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Demonstrate the right work manner and attitude with deliberation on safety and health in a working environment.
2. Perform tasks with minimum supervision and meet the company's expectations.
3. Apply technical knowledge, analytical and problem-solving skills to accomplish task assigned by the company.
4. Report effectively on work experience during attachment, including knowledge and skills acquired, in oral and written form.

## **COMMON CORE**

**WQD10103 TECHNICAL MATHEMATICS 1**

**WQD10203 TECHNICAL MATHEMATICS 2**

**CLD21102 STATISTICS**

**CLD10003 GENERAL CHEMISTRY**

**CLD10803 ORGANIC ANALYTICAL CHEMISTRY**

**CLD20002 OCCUPATIONAL SAFETY AND HEALTH**

**CLD20402 TRANSPORT PROCESS**

## **WQD10103 TECHNICAL MATHEMATICS 1**

This course enhances students' fundamental knowledge of solving indices, logarithms and algebra, and to enrich students' knowledge of trigonometry and complex numbers. These concepts are essential for their study in higher level of mathematics.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Solve operations and problems related to algebra (C2, PLO1).
2. Apply trigonometric functions in solving triangular problems (C3, PLO1).
3. Solve complex number operations in several forms (C2, PLO1).

### **References:**

1. Mathematics Central Committee Universiti Kuala Lumpur. 2012. Technical Mathematics 1 Workbook (Modules Prepared by MCC UniKL). Pearson Custom Publishing: Singapore.
2. Stroud, K. & Booth, D. 2013. Engineering Mathematics (7th Edn). Palgrave Macmillan: UK.
3. Bird, J. 2014. Engineering Mathematics (7th Edn). Routledge: Oxford.
4. Peterson, J. 2012. Technical Mathematics (4th Edn). Delmar Cengage Learning: New York.

## **WQD10203 TECHNICAL MATHEMATICS 2**

This course provides fundamental concepts of calculus where students will be exposed to the theories and applications of trigonometry, functions, limits, differentiation and integration. These are essential mathematical components which students will encounter in science and engineering technology courses during their academic programme.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Solve trigonometry equations (C2, PLO1).
2. Solve operations and problems related to functions (C2, PLO1).
3. Apply differentiation and integration techniques to solve practical problems (C3, PLO1).

### **References:**

1. Mathematics Central Committee Universiti Kuala Lumpur. 2012. Technical Mathematics 2 Workbook (Modules Prepared by MCC UniKL). Pearson Custom Publishing: Singapore.
2. Stroud, K. & Booth, D. 2013. Engineering Mathematics (7th Edn). Palgrave Macmillan: UK.
3. Bird, J. 2014. Engineering Mathematics (7th Edn). Routledge: Oxford.
4. Peterson, J. 2012. Technical Mathematics (4th Edn). Delmar Cengage Learning: New York.

## **CLD 21102 STATISTICS**

This course is aimed at introducing students to basic language of statistics and to apply statistical concepts in engineering. Students will be exposed to selecting, computing and interpreting basic statistical tools.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Illustrate and explain a descriptive and inferential statistics for interpreting results (C3, PLO1).
2. Apply appropriate statistical models or methods to solve statistical problems (C3, PLO2).
3. Interpret the outcome from statistical software output with the statistical concept (C4, PLO3).

### **References:**

1. Roxy Peck, Tom Short, Chris Olsen (2018). Introduction to statistics and data analysis, 6th edition Boston, MA : Cengage Learning.
2. Bluman, Allan G (2018). Elementary statistics : a step by step approach, 10th Edition, New York, NY : McGraw-Hill Education.
3. Arak, M. Mathai and Hans J. Haubold (2017). Probability and Statistics: A Course for Physicists and Engineers, De Gruyter.

## **CLD10003 GENERAL CHEMISTRY**

General Chemistry provides fundamental knowledge in chemistry. This course will equip students with essential knowledge that will enable them to be used and applied in chemical engineering technology and any related application. Students will also be exposed to basic laboratory skills including tools, chemicals, techniques and safety awareness.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply knowledge on solving problems related to basic principles of chemistry. (C3, PLO1)
2. Handle chemicals and apparatus correctly and properly in the application of basic principles of chemistry during laboratory sessions. (P3, PLO4)
3. Perform effectively as a team member in applying good laboratory techniques (A3, PLO9)

### **References:**

1. Chang, R & Golsby, K. (2018) Chemistry, 12th ed. McGraw Hill. ISBN13: 978-0078021510.
2. Chang, R (2013), Chemistry, 11<sup>th</sup> ed. McGraw Hill.
3. Zumdahl, S.S., & Zumdahl, S, A. (2013), Chemistry, 9th Ed, Cengage Learning.
4. McMurry, J., Fay, R.C. (2011), Chemistry, 6th Ed, Prentice Hall.
5. Ebbing, D., (2012), General Chemistry, 10th ed., Houghton 4. Barrows.
6. Wentworth, R, Munk. H. B. (2012), Experiments in General Chemistry, Lab Manual, 10<sup>th</sup> ed.

## **CLD10803 ORGANIC ANALYTICAL CHEMISTRY**

This course provides students with the basic concepts in organic chemistry as well as the analytical techniques used in the field of chemistry.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply the phenomena, basic concepts, laws and principles in organic and analytical chemistry (C3, PLO1).
2. Perform laboratory works related to reaction of organic compound (P4, PLO4)
3. Assist affectively as a team member in performing good laboratory technique (A3, PLO9)

### **References:**

1. Chan, K. S. and Tan, J. (2016), Understanding Advanced Organic and Analytical Chemistry: The Learner's Approach (Revised Edition), WS Education.
2. Carey, F.A., Organic Chemistry, 7th Edition, McGraw-Hill (2008) Solomon, T.W. G., Organic Chemistry, 8th Edition, Wiley. (2008)
3. Solomon, T.W.G., (2017), Organic Chemistry, 12th Edition, Wiley
4. Skoog, D.A., Holler, F.J. and Crouch, S.R. (2017), Principles of Instrumental Analysis, 7th Edition, Cengage Learning

## **CLD20002 OCCUPATIONAL SAFETY AND HEALTH**

This course will impart knowledge and create an awareness to occupational safety and health. Students will be exposed to the design, techniques, legal, society and cultural issues in making the work place as safe as possible.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Illustrate the ability to recognize the types of Hazards, the appropriate Control Measures and risks associated with it, in accordance to Occupational Safety & Health Act (1994) or ACT 154 towards Safety and Health Issues at Workplace (C3, PLO6).
2. Collaborate with Team Members in carrying out activities related to Occupational Safety and Health (P2, PLO9)
3. Demonstrate business practices and opportunities as well as technopreneurial competencies to all work activities related to Occupational Safety And Health (P2, PLO11).

### **References**

1. Crowl, D. A., and Louvar, J. F, *Chemical Process Safety Fundamentals with Applications*, Prentice Hall [TP 150.S24 C76 2002]
2. Goetsch, D. L., (2002), *Occupational Safety and Health For Technologies, Engineers and Managers*, Prentice Hall.
3. Roy E. S., (1999), *Chemical Process Safety: Learning From Case Histories*, Butterworth-Heinemann
4. Di Pilla. S., (2003), *Slip & Fall Prevention, a Practical Handbook*, Lewis Publishers

5. Martin, H.(2007), *Handbook Of Explosion, Prevention And Protection*, 2nd Ed.Wiley-VCH.
6. Sam. M.,(2012), *Lees's Loss Prevention In The Process Industries*, 4th Ed.Elsevier Publishers.

### **CLD20402 TRANSPORT PROCESS**

This course will provide students with the knowledge of heat and mass transfer which will be useful for their study in later years.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain knowledge of three modes of heat transfer which are conduction, convection and radiation (C2, PLO1)
2. Apply basic calculation in solving problems related to heat transfer (C3, PLO2)
3. Perform laboratory works safely according to the related operating manual (P3, PLO4)

#### **References:**

1. Yunus A. Çengel, (2004), *Heat Transfer: A Practical Approach*, 2<sup>nd</sup> Edition. McGraw-Hill, USA
2. Geankoplis, (2003), *Transport Processes and Separation Proces Principles*, 4<sup>th</sup> Edition. Prentice Hall
3. Holman, J.P. (2002), *Heat Transfer*, 9<sup>th</sup> Edition. McGraw Hill
4. McCabe and Warren L, (2001), *Unit Operations of Chemical Engineering*, 6thEdition. McGraw-Hill, USA.
5. Frank P. Incropera and David P. DeWitt, (2007), *Introduction To Heat Transfer*,5th Edition. John Wiley.

## **DISCIPLINE CORE**

**CLD10703 ENGINEERING DRAWING AND  
COMPUTING  
CLD10502 PRINCIPLES OF CHEMICAL PROCESS  
CLD10603 FLUID MECHANICS  
CLD20102 ELECTRICAL TECHNOLOGY  
CLD20202 PROCESS INSTRUMENTATION  
CLD20302 THERMODYNAMICS  
CLD20502 BASIC ENGINEERING WORKSHOP  
CKD20002 REACTOR TECHNOLOGY  
CKD20102 SEPARATION TECHNOLOGY  
WPD39806 FINAL YEAR PROJECT**

## **CLD10703 ENGINEERING DRAWING AND COMPUTING**

This introductory course aimed at providing students with the basic concepts of computer applications used in the current practice and its application in chemical engineering technology. This course will equip students with concepts and knowledge that are essential to encounter any related problems that need to be solved using a computer application including using computer for engineering design.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply theoretical knowledge of computing application in current practice and its application in chemical engineering technology. (C3, PLO3)
2. Reproduce 2D models using basic symbols used in computing and engineering drawing. (P3, PLO4)
3. Construct a piping and instrumentation diagram by using CAD software. (P3, PLO5)

### **References:**

1. Peter, W., (2018). Office 2019 All-in-One For Dummies. New Jersey,USA: JohnWiley & Sons
2. Mariano Martín Martín. (2015). Introduction to Software for Chemical Engineers.1st ed.
3. Iván Darío Gil Chaves, Javier Ricardo Guevara López, José Luis García Zapata,Alexander Leguizamón Robayo, Gerardo Rodríguez Niño. (2016). Process Analysis and Simulation in Chemical Engineering. 1st ed.
4. Frederick E. Giesecke, Alva E. Mitchell, Henry C. Spencer, John Thomas Dygdon, Ivan L. Hill, James E. Novak, R. O. Loving, Shawna E. Lockhart, CindyJohnson. Technical Drawing with Engineering Graphics (2016) Pearson Education
5. Bruce A. Finlayson. (2014). Introduction to Chemical Engineering Computing.2nd ed.

## **CLD10502 PRINCIPLES OF CHEMICAL PROCESS**

This is an introductory course aimed at providing students with the fundamental concepts of chemical process which form the foundation for their study in later years. These concepts are essential in preparing students to formulate and solve material and energy balances on chemical process systems.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Identify the dimension of an equation and unit conversion (C2, PLO1).
2. Apply the concept of material balances and energy balances in chemical process plants (C3, PLO3).
3. Solve material balances and energy balances to account for the flows to and from the process and its units. (C3, PLO2).

References:

1. Felder & Rousseau (2015), *Elementary of Chemical Process*, 4th Edition, John Wiley
2. Himmeblau. D.M. (2012), *Basic Principle and Calculation In Chemical Engineering*, 8<sup>th</sup> Edition, Prentice Hall
3. Regina (2007), *Introduction to Chemical Processes: Principles, Analysis, Synthesis*, Mc Graw Hill International Edition

**CLD10603 FLUID MECHANICS**

This course is an introduction to fluid mechanics and emphasizes fundamental concepts and problem-solving techniques. Topics to be covered include fluid properties, pressure, fluid static's, control volume analysis and internal flow (flow in pipes and conduits). Students will be familiarized with the equipment involved in fluid flow. The student will also be able to evaluate basic concepts in selecting and analyzing components of fluid systems

**Learning Outcomes:**

Upon completion of this course students should be able to:

1. Assess the basic theory of fluid in solving problems related fluid static and dynamic (C3, PLO1)
2. Discuss the concepts of static and dynamic fluid and its application in fluid system (C2, PLO2)
3. Conduct laboratory experiments related to fluid static and dynamic by following standard operating procedure and safety awareness (P3,PLO4).

References:

- 1.Cengel, Y.A. and Chimabala, J.A. (2014). *Fluid Mechanics: Fundamental andApplications* (3rd Ed) New York: Mc Graw Hill
- 2.Munson B.R., Young D.F., Okiishi T.H., Huebsch W.W., (2009). *Fundamentals ofFluid.* (6th Ed). New Jersey.: J. Wiley & Sons.
- 3.Noel de Nevers (2004). *Fluid Mechanics for Chemical Engineers* (3rd Ed.).McGrawHill

**CLD20102 ELECTRICAL TECHNOLOGY**

This is an introductory course aimed at providing students with the fundamentals concept and knowledge of electrical technology. This course will provide students with skills and understanding to operate electrical tools and machines safely and effectively.

**Learning Outcomes:**

Upon completion of this course students should be able to:

1. Describe basic principles and practices from electrical fundamental disciplines to solve electrical problems. (C2, PLO1)
2. Perform experiments and project according to the standard operating procedure given. (P4, PLO4)
3. Apply basic principles of electricity, circuit theorems, electrical system, magnetism, and electrical machinery. (C3, PLO2).

### References

1. Edward Hughes (2016) "Electrical Technology", 12th. Edition, Prentice Hall
2. Charles K. Alexander and Matthew N.O. Sadiku (2017), "Fundamental of Electric Circuit", 6th Edition, McGraw-Hill.
3. Boylestad (2016), "Introductory Circuit Analysis", 13th Edition, Pearson.
4. Floyd and Buchla (2014), "Electronics Fundamentals: A Systems Approach ", Pearson.
5. Stephen Umans (2014), "Electric Machinery", 7th Edition, McGraw-Hill.
6. Lecture Notes: Safe Work Practices and Procedures.
7. Lecture Notes: Electric Circuits – Network Theorems.

### **CLD20202 PROCESS INSTRUMENTATION**

This course will impart knowledge and application of process instrumentation. Students will be exposed to the principle and application including the maintenance, troubleshooting and safety aspects of process instrumentation.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the working principle, maintenance and troubleshooting procedures of the measurement devices (C2, PLO1).
2. Relate the application of instruments in the real plant/factory (C3, PLO2)
3. Display the ability to conduct the experiment by following standard operating procedure and safety awareness (P2, PLO4).

### References:

1. Doebelin, E.O., (1990), *Measurement System; Application and Design*, Fourth Edition, McGraw Hill International Editions
2. Perry, R.H & Green, D., (1994), *Perry's Chemical Engineer's Handbook*, Six Edition, McGraw Hill International Editions

### **CLD20302 THERMODYNAMICS**

This is an introductory course aimed at providing students with the fundamental concepts in thermodynamics. These concepts are essential since the students will apply this knowledge in other engineering courses.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Identify the thermodynamics properties of pure substances using properties table (C2, PLO1)
2. Describe the applications of thermodynamics (C2, PLO3)
3. Relate the closed and open system in the First Law and Second Law of thermodynamics. (C3, PLO2)

### References:

- 1.Cengel, Yunus A., Boles, Michael A. (2015) *Thermodynamics: An Engineering Approach*, 8th edition, McGraw-Hill.
- 2.Moran, M.J. and Shapiro, H.N. (2014). *Fundamentals of Engineering Thermodynamics*. (8th Edition). John Wiley & Sons, Inc.
- 3.Smith, J.M., Van Ness, H.C. and Abbott, M.M. (2005). *Introduction to Chemical Engineering Thermodynamics*. (7th Edition). McGraw-Hill.
- 4.Sonntag, Richard E., Borgnakke, Claus. (2001) *Introduction to Engineering Thermodynamics*, John Wiley & Sons
- 5.Wark, K. and Richards, D.E. (1999). *Thermodynamics*. (6th Edition). McGraw-Hill.

## **CLD20502 BASIC ENGINEERING WORKSHOP**

This is an introductory course aimed at providing students with the basic mechanical engineering workshop practice. Students will be familiarized with basic principles and practical of hand tools in basic engineering workshop. The student also will be able to perform basic machining operation and basic welding operation

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Differentiate various tools, equipment and safety awareness in metal fabrication, machining and welding activities. (C4, PLO1).
2. Perform metal fabrication, machining, and welding process by using suitable tools and equipment. (P3, PLO4).
3. Work effectively in a team either as a leader or team member (A2, PLO9).

### References:

1. Rao, P. N. (2018) *Manufacturing Technology, Foundry, Forming and Welding*, 5<sup>TH</sup> Edition, Tata McGraw-Hill.
2. Jeffus, L.F. (2016), *Welding: Principles and Application*, 8th ed, Delmar Pub
3. Kalpakjian, S & Schmid S.R (2013). *Manufacturing Engineering and Technology*, 7th ed. Pearson
4. J.R Walker, (2018), *Modern Metalworking*, 10th ed., Goodheart Wilcox Company
5. Erik Oberg, Franklin D. Jones, Holbrook L. Horton, Henry H. Ryffel, (2016) *Machinery Handbook*, 30th ed., Industrial Press

## **CKD20003 REACTOR TECHNOLOGY**

This course will impart knowledge of chemical reaction. Students will be exposed to chemical kinetics, different reactor operations, catalysis and catalytic reaction.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Describe the concept of chemical kinetics and the importance of catalyst in chemical reaction (C2,PLO1)
- 2.Solve problems related to chemical reaction and reactor design based on the concept of chemical kinetics (C3, PLO2)
- 3.Conduct experiments on chemical reactors safely based on procedures (P3, PLO4)

#### References:

1. Fogler H.S., (2020), *Elements of Chemical Reaction Engineering*, 5th Edition. Prentice-Hall International Series
2. Holland C.D., (1989), *Fundamental of Chemical Reaction Engineering*, Prentice Hall Englewood Cliffs
3. Smith, J. M. (1986), *Chemical Engineering Kinetics*, Third Edition, Singapore, McGraw-Hill International
4. Hill, C. G. (2014), *Introduction to Chemical Engineering Kinetics & Reactor Design*, 2<sup>nd</sup> Edition by New York, John Wiley & Sons

### **CKD20103 SEPARATION TECHNOLOGY**

This course will provide students with the basic principle and operations of separation in chemical engineering technology and expose students to separation technology equipment.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

- 1.Explain the basic principles and operations in chemical and mechanical separation (C2, PLO1)
- 2.Apply the fundamental knowledge in separation technology process (C3, PLO2)
- 3.Perform laboratory experiments safely (P3, PLO4)

#### References:

1. Geankoplis, C.J. (2018). *Transport Processes And Separation Process Principles*, 5th Edition, Prentice Hall
2. McCabe and Smith (2005), *Unit Operations of Chemical Engineering*, 6th Edition.McGraw-Hill.
3. Coulson & Richardson (1983). *Chemical Engineering, Vol.2*, Pergamon Press, Oxford
- 4.

### **CPD39806 FINAL YEAR PROJECT**

This course introduces students with ability and skills in conducting a technical project based on their specialization area. It provides students with technical writing and presentation skills.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Plan the project activities to fulfil the proposed research problem.
2. Manage and execute the project plan to accomplish project objectives.
3. Analyse project results using appropriate technique or tools.
4. Produce a project report in accordance with the specified standard format.
5. Present and defend the project outcomes effectively.

# **DIPLOMA IN CHEMICAL ENGINEERING TECHNOLOGY (FOOD)**

*R/524/4/0038 / MQA A10857*

## **PROGRAMME OVERVIEW**

This programme focuses on the application of principles of chemical engineering technology and food chemistry to the large-scale processing of food. Foods must be nutritious, i.e., provide the essential nutrients for growth and health; they must be safe, free from dangerous micro-organisms and chemical contaminants; and, if they are to be consumed at all, they must be attractive in taste and appearance. In this programme, students learn how to adapt the unit operations of traditional chemical engineering to the specific requirements of food processing. The main objective of this programme is to make it possible for well-trained chemical engineers and technologist to work in the food industry, possibly one of the largest manufacturing industries in Malaysia.

The programme includes exposure to areas of food chemistry, food microbiology, food engineering, food safety, food processing and the nutritive value of food. It is also designed to provide depth and breadth in the relevant physical and biological sciences in which food science and technology is based.

## **CAREER PATH**

Our graduates have unlimited opportunities in getting jobs either in public or private sectors. In public sectors, they may work at food related government bodies like Department of Health, Educational Institutions, MARDI, SIRIM, MPOB, and others. They may join various industries like cereal manufacturing, bakery products, sugar refinery, manufacturing of flour-based sweetening agent, chocolate and confectionery products, fish processing, milk and dairy products, fruits and vegetable products, canning industry, edible oils and its products and beverages.

The scope of career may vary from production supervisors, quality assurance supervisors, technicians, assistant chemist, R&D assistants, operators, and others.

## **COURSES**

### **Diploma in Chemical Engineering Technology (Food)**

**CFD20103 FOOD PROCESSING TECHNOLOGY**

**CFD20203 FOOD MICROBIOLOGY**

**CFD20302 FOOD CHEMISTRY**

**CFD20403 FOOD QUALITY AND SANITATION**

**CFD30003 FOOD ANALYSIS**

**CFD30103 FOOD PACKAGING**

**CFD30303 SENSORY EVALUATION OF FOOD**

## **CFD20103 FOOD PROCESSING TECHNOLOGY**

To impart knowledge and technical skills in processing and preservation technology of various food products.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the principle of food processing techniques applied at low, ambient or high temperature and the effect of processing techniques towards food products/ingredient. (C3, PLO1)
2. Demonstrate the working principle of food processing equipment/machinery and the ability of handling and troubleshooting of the equipment/machinery. (P3, PLO5).
3. Work with team members in planning, performing and reporting a scientific inquiry, practical or assignment related to new innovative food product and food processing technology. (A3, PLO9)

### References

1. Scott S. J. and Hui, Y.H. (2004). Food Processing: Principles and Application Wiley-Blackwell.
- Brennan J.G. (2006). Food Processing Handbook. John Wiley.
2. Zeuthen P. and Bogh-Sorensen, L. (2003). Food Preservation Techniques. CRC Press.
- Karel, M. (2003). Physical Principles of Food Preservation. Marcel-Dekker Inc.

## **CFD20203 FOOD MICROBIOLOGY**

This course aimed to provide the students with understanding of the basic function, activity, classification of microorganisms, microbiological quality of food products and food safety. The student will also obtain a good understanding of laboratory practices in food microbiology.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply theories and concepts of microorganisms and their factors that influence microbial growth in food applications, food spoilage, food intoxication and food infection (C3, PLO1).
2. Organize important technique and analysis in food microbiology (P3, PLO5).
3. Perform a scientific inquiry on food microbiology with team members. (A2, PLO9)

### References:

1. Ray. B. and Bhunia A. (2013). *Fundamental Food Microbiology*, 5<sup>th</sup> edition, CRC Press.
2. Thomas J. Montville, Karl R. Matthew (2012), *Food Microbiology: An Introduction*, ASM Press.
3. Garg N. and Garg K.L. (2010). *Laboratory Manual of Food Microbiology*, I K International Publishing House Pvt. Ltd
4. Adams M.R and Moss M.O. (2008). *Food Microbiology*, 3<sup>rd</sup> edition, Royal Society of Chemistry
5. Jeffrey L. Kornacki (2010). *Principles of Microbiological Troubleshooting In the Industrial Food Processing Environment*, Springer

## **CFD20302 FOOD CHEMISTRY**

This course aimed to provide the students with understanding of the fundamental concept of chemical properties and reactions in food.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the structure, properties and functions of food constituents and other food additives (C2, PLO1).
2. Compute scientific inquiry/assignment related to food chemistry (C3, PLO2).
3. Collaborate with team members in planning and performing scientific investigation (A3, PLO9).

### **References:**

1. Brady, John W. Introductory food chemistry. Comstock Pub. Associates, 2013.
2. Simpson, Benjamin K., et al. Food biochemistry and food processing. John Wiley & Sons, 2012.
3. Whitney, Eleanor, and Sharon Rady Rolfes. Understanding nutrition. Cengage Learning, 2012.
4. Damodaran, Srinivasan, Kirk Parkin, and Owen R. Fennema (eds.). (2008). Fennema's Food Chemistry, 4th edition. Boca Raton: CRC Press/Taylor & Francis.
5. Newton, David E. (2007). Food Chemistry. New York: Facts on File.
6. Belitz, H.-D., W. Grosch, and Peter Schieberle. (2004). Food Chemistry, 3rd edition. Berlin: Springer

## **CFD20403 FOOD QUALITY AND SANITATION**

To provide students with knowledge of the importance of quality assurance and quality control in food industries, basic quality problems of food products, and knowledge of various quality management system that commonly applied in food industries and to provide students with knowledge on the principles and application of food hygiene in food manufacturing.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Describe the principles, practices and basic quality problems of food products in food industry (C2, PLO1).
2. Determine the suitable monitoring and control system to ensure it operates at its full potential to produce conforming product based from statistical methods (C4, PLO2).
3. Collaborate with team members in planning and performing scientific investigation (A2, PLO9)

### **References:**

1. Medina, D. A. and Laine, A.M. Food Quality: Control, Analysis and Consumer Concerns. Nova Science Publishers. 2011
2. Mark, C. Food Industry Quality Control Systems. CRC Press, 2009
3. Mortimore, S. &Wallace, C. *HACCP: A Practical Approach*, Kluwer Springer Science and Business Media, 2013
4. Hubbard, M. Statistical Quality Control for Food Industry. Springer. 2013
5. Andres, J.V. *Quality Assurance for the Food Industries - A Practical Approach*, CRC Press, 2004.

### **CFD30003 FOOD ANALYSIS**

This course will provide the principles of chemical and instrumental analysis of food and provide laboratory experience for students.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the principles and procedures of chemical, physical and instrumental analysis in food analysis (C2, PLO1).
2. Perform food sampling and food analysis using a related food instrument (P4, PLO5).
3. Collaborate with team members in planning, performing and reporting a scientific inquiry/assignment related to food analysis (A2, PLO7).

#### **References:**

1. Nollet. L.M.L, (2015) Handbook of Food Analysis, 3rd edition. CRC Press., New York, NY
2. Nielsen. S.S, (2011) Food Analysis, 4th edition. Springer Publishers., New York, NY
3. American Association of Cereal (AACC). (1995). Approved Methods of Analysis, 9th ed. St Paul, MN
4. James, C. S. (1999). Analytical Chemistry of Food. Chapman & Hall
5. Skoog, D.A and West,D.M. (1998). Fundamental of Analytical Chemistry, 4th ed. Holt, Saunders, New York
6. Willard, H.H., Merit, L.L., Dean, J.A., Settle, F.A. (1998). Instrumental Methods of Analysis, 7th ed. Wadsworth Publishing, Belmon, CA
7. Pomeranz and Meloan, (1994). Food Analysis: Theory and Practice. 3rd. ed

### **CFD30103 FOOD PACKAGING**

To provide students with the principles of food packaging and application of packaging materials in food industry as well as packaging regulation and labelling requirement to be in line with Malaysian Food Act 1983 and Food Regulation 1985.

#### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Explain the principles of food packaging and application of packaging materials in food industries (C2,PLO1).
2. Demonstrate the typical packaging materials testing and some major packaging equipment (P3, PLO5).
3. Collaborate with team members in reporting the experimental results/assignment given (A3, PLO9).

#### **References:**

1. Robertson, G.L Food Packaging Principle and Practice Third Edition, CRC Press Taylor and Francis Group (2013)
2. Coles, R. McDowell, D. and Kirwan, M.J. Food Packaging Technology, Blackwell Publisher. (2009)
3. Laws of Malaysia: Food Act and Regulations, MDC Publishers Sdn. Bhd. (2015).

## **CFD30303 SENSORY EVALUATION OF FOOD**

To provide students with the basic principles and requirements and sensory evaluation.

### **Learning Outcomes:**

Upon completion of this course students should be able to:

1. Apply the appropriate techniques and methods of sensory evaluation for product development (C3, PLO1).
2. Conduct appropriate statistical methods for product development and quality assurance of food (P3, PLO5).
3. Describe the principle steps in market research (A3, PLO11)

### **References:**

1. Meilgaard, M.C., Carr, B.T. & Civille, G.V. (2015). *Sensory Evaluation Techniques*, Fifth Edition, CRC Press. ISBN-10: 1482216906 ISBN-13: 978-1482216905
2. Stone, H., Bleibaum, R. and Thomas, H.A. (2012). *Sensory Evaluation Practices*, Fourth Edition (Food Science and Technology), Academic Press. ISBN-10: 0123820863 ISBN-13: 978-0123820860
3. Delarue, J., Lawlor, B. and Rogeaux, M. (2015). *Rapid Sensory Profiling Techniques: Applications in New Product Development and Consumer Research*. Woodhead Publishing Series in Food Science, Technology and Nutrition. ISBN-10: 178242248X ISBN-13: 978-1782422488

## PROGRAMME STRUCTURE: (subject to amendments)

### Year 1, Semester 1

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	CLD 10703	ENGINEERING DRAWING & COMPUTING	3	34	0	34	5	47
2	WED 10402	COMPETENCY ENGLISH	2	14	20	0	4	42
3	MPU 2313 MPU2323	AMALAN ISLAM DI MALAYSIA (LOCAL MUSLIM) RELIGIOUS PRACTICES IN MALAYSIA (LOCAL NON MUSLIM & INT)	3	17	34	0	10	59
4	WQD10103	TECHNICAL MATHEMATICS 1	3	34	17	0	5.5	63.5
5	CLD 10003	GENERAL CHEMISTRY	3	17	15	34	6	48
6	W*D10101	FOREIGN LANGUAGE 1	1	0	0	0	0	0
7	MPU 24*2	CO-CURRICULUM	2	0	0	0	0	0
TOTAL			17	116	86	68	30.5	259.5

### Year 1 : Semester 2

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	CLD10803	ORGANIC & ANALYTICAL CHEMISTRY	3	34	0	32	6	48
2	CLD10502	PRINCIPLES OF CHEMICAL PROCESS	2	14	13	17	4	32
3	WED20202	COMMUNICATION ENGLISH 1	2	14	18	0	8	40
4	CLD20102	ELECTRICAL TECHNOLOGY	2	14	0	22	5	39
5	CLD10603	FLUID MECHANICS	3	15	20	36	4	45
6	MPU2232 MPU2213	INTERPERSONAL SKILLS BAHASA KEBANGSAAN (A)	2	17	20	0	6	37
7	WQD10203	TECHNICAL MATHEMATICS 2	3	34	17	0	5.5	63.5
TOTAL			17	142	88	107	38.5	304.5

### Year 2, Semester 1 (3)

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	CLD20002	OCCUPATIONAL SAFETY AND HEALTH	2	14	12	0	6	48
2	W*D10201	FOREIGN LANGUAGE 2	1	0	0	0	0	0
3	CLD20202	PROCESS INSTRUMENTATION	2	14	0	25	4	37
4	MPU2163 MPU2133	PENGAJIAN MALAYSIA 2 (LOCAL) BAHASA MELAYU KOMUNIKASI 1 (INT)	3	17	34	0	8	61
5	CLD20302	THERMODYNAMICS	2	14	22	7	6	31
6	CLD20402	TRANSPORT PROCESS	2	15	0	33	4	28
7	CLD20502	BASIC ENGINEERING WORKSHOP	2	17	0	33	3	27
8	WBD10102	INTRODUCTION TO ENTREPRENEURSHIP	2	18	32	0	6	24
9	WED20302	COMMUNICATION ENGLISH 2	2	13	22	0	5	40
TOTAL			18	122	122	98	42	296

### Year 2, Semester 2 (4)

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	CKD20003	REACTOR TECHNOLOGY	3	16	14	24	6	60
2	CKD20102	SEPARATION TECHNOLOGY	2	12	0	16	5	47
3	CLD21102	STATISTICS	2	17	34	0	7	22
4	CFD 20302	FOOD CHEMISTRY	2	30	0	12	6	32
5	CFD 20203	FOOD MICROBIOLOGY	3	28	0	36	6	50
6	CFD 30303	SENSORY EVALUATION OF FOOD	3	30	0	45	6	39
7	CFD 30003	FOOD ANALYSIS	3	28	0	42	7	43
TOTAL			18	161	48	175	43	293

**Year 3, Semester 1 (5)**

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	CFD 20403	FOOD QUALITY AND SANITATION	3	38	0	6	8	68
2	CFD 20103	FOOD PROCESSING TECHNOLOGY	3	28	0	42	7	43
3	CFD 30103	FOOD PACKAGING	3	34	0	49	4	33
4	WPD39806	FINAL YEAR PROJECT	6	5	0	195	1	39
TOTAL			15	105	0	292	20	183

**Year 3, Semester 2 (6)**

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	WID41009	INDUSTRIAL TRAINING	9	0	0	600	57	63
TOTAL			9	0	0	600	57	63

Total Credit to Graduate (TCG): 94

**\* Applicable for Malaysian Students**

Students must register and pass subject MPU3213 Bahasa Kebangsaan A before graduation if attain grade D and E in Bahasa Melayu at SPM level and never passed Bahasa Kebangsaan A in their previous programme. Other conditions: refer to your Academic Advisor. Students under this category will graduate with additional of 3 credits on top of TCG.

\* Passing mark for all MPU Compulsory subjects is 50 marks (C).

**MPU COURSES**

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	MPU 2412	CAREER GUIDANCE 1	2	17	0	0	18	45
2	MPU 2422	COMMUNITY SERVICE 1	2	17	0	0	9	54
3	MPU 2432	CULTURE 1	2	17	0	23	0	40
4	MPU 2442	RAKAN MASJID 1	2	17	0	10	1	52
5	MPU 2452	SISWA-SISWI BOMBA DAN PENYELAMAT 1	2	17	0	25	0	38
6	MPU 2462	KOR SISWA-SISWI PERTAHANAN AWAM 1	2	17	0	17	7	39
7	MPU 2472	SPORTS MANAGEMENT 1	2	17	0	9	8	46
8	MPU 2482	PERSONAL FINANCIAL MANAGEMENT 1	2	17	0	18	3	42
9	MPU 24102	INTEGRITI & ANTI-RASUAH	2	18	0	0	26	36

**CENTRALISED FOREIGN LANGUAGE COURSES**

NO	CODE	COURSE	CREDIT	F2F				NON-F2F
				L	T	P	O	
1	WMD 10101	MANDARIN 1	1	25	0	0	5	10
2	WMD 10201	MANDARIN 2	1	25	0	0	5	10
3	WAD 10101	ARABIC 1	1	20	0	0	5	15
4	WAD 10201	ARABIC 2	1	19	0	0	6	15

# Academic Calendar 2022

Academic Calendar 2022 Undergraduate

UniKL Main Academic Calendar 2022 (14Wks-7Wks-14Wks)

Day	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
Sun				Worker's Day 1									1
Mon				Eid Fitri* 2			Wk 2 1					Wk13 2	
Tues	CNY* 1	1		Eid Fitri* 3			2			Wk5 1		3	
Wed	CNY* 2	2		Eid Fitri* 4	0		3			2		4	1
Thurs		3		Wk10 5	2		4		1		3	1	FE 2
Friday	4	4	1		6	3	1	5	2		4	2	6
Sat	5	5	2	7	4	2	6	3	1	5	3	7	4
Sun	6	6	3	8	5	3	7	4	2	6	4	8	5
Mon		7	Wk3 7	Awal Ramadhan 4	Wk11 9	YDPA Bday 6	4	Wk3 8	Wk7 5	Wk1 3	Wk6 7	Wk9 5	Wk14 9
Tues		8		Wk7 5	10	7	5	9	6	4	8	6	10
Wed		9		6	11	Rev	8	IEB	6	5	9	7	11
Thurs		10		7	12		9	7	11	8	10	8	12
Friday		11		8	13		10	8	12	9	11	9	13
Sat		12		9	14		11	Eid Adha 9	13	10	8	12	14
Sun	Reg 13	13		10	15		12		14	11	9	13	15
Mon		14	Wk4 14		16		13		15	12	10	14	16
Tues		15		11	Wesak 17		14		16	13	11	15	17
Wed	WOW 16	16		12	Wk12 18		15		17	14	12	16	18
Thurs		17		13	19		16		18	15	13	17	19
Friday		18		14	20		17		19	16	14	18	20
Sat		19		15	21		18		20	17	15	19	21
Sun		20		16	22		19		21	18	16	20	22
Mon	Wk1 21	Wk5 21	Wk 8 21	Wk13 23	FE 20		20		22	19	17	CNY* 23	25
Tues		22		19	24		21		23	20	18	21	26
Wed		23		20	25		22		24	21	19	22	27
Thurs		24		21	26		23		25	22	20	23	28
Friday		25		22	27		24		26	23	21	24	29
Sat		26		23	28		25		27	24	22	25	30
Sun		27		24	29		26		28	25	23	26	31
Mon	Wk2 28	Wk6 28	Wk9 25	Wk14 30		Wk 1 27	Wk6 29		30	26	24	27	
Tues		29		31			30		31	27	25	28	
Wed		30					31			28	26	29	
Thu		31								29	27	30	
Fri						Senate* 29		Senate* 30					
Sat						Awal Muharam* 30							
Sun							31						

Reg
WOW
MSB

New Intake Registration  
Welcome & Orientation Week  
Mid Sem Break

Rev
FE

Revision Session  
Final Exam Session

*
Senate*

Public Holiday  
Public Holiday but subject to change  
Subject to Change/Via Circulation

Public Holiday for Melaka

Semester	Jan Sem 2022	July Sem 2022	September Sem 2022
Activity	Date	Date	Date
New Intake Registration	13-Feb-22	17-Jul-22	25-Sep-22
Welcome & Orientation Week	14-18 Feb	18-22 July	26 - 30 Sept
Lessons	21 Feb- 8 April	25 July-9 Sept	3 Oct-18 Nov
Mid Sem Break	11-15 Apr		21- 25 Nov
Lessons	18 Apr- 3 June		28 Nov 2022 - 13 Jan 2023
Revision	7 - 10 June		14- 18 Jan 2023
Final Exam	13 - 26 June	10 - 17 Sept	19 Jan-4 Feb 2023
End of Sem Break	27 June - 22 July	19-30 Sept	7 -18 Feb 2023