



SCHOOL OF PHARMACEUTICAL SCIENCES

BACHELOR OF PHARMACY

2020/2021

www.usm.my

USM Vision

Transforming Higher Education for a Sustainable Tomorrow

USM Mission

USM is a pioneering, transdisciplinary research intensive university that empowers future talents and enables the bottom billions to transform their socio-economic well-being

STUDENT'S PERSONAL INFORMATION

Full Name	
Identity Card (IC)/Passport No.	
Current Address	
Permanent Address	
E-mail Address	
Telephone No. (Residence)	
Mobile Phone No. (if applicable)	
School	
Programme of Study	

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ACADEMIC CALENDAR - ACADEMIC SESSION 2020/2021

FOR ALL SCHOOLS (EXCEPT FOR SCHOOL OF MEDICAL SCIENCES AND SCHOOL OF DENTAL SCIENCES)

Main and Engineering Campus : Registration for New Student (04 - 05 October 2020) / **Orientation Week (06 - 09 October 2020)

Health Campus : Registration for New Student (04 October 2020) / **Orientation Week (05 - 08 October 2020)

SEM	WEEK	ACTIVITY	DATE	REMARKS	
ONE	1	Teaching & Learning (T&L - 7 Weeks)	Monday, 12.10.2020 - Sunday, 18.10.2020		
	2		Monday, 19.10.2020 - Sunday, 25.10.2020		
	3		Monday, 26.10.2020 - Sunday, 01.11.2020	29.10.2020, Thursday - Prophet Muhammad's Birthday	
	4		Monday, 02.11.2020 - Sunday, 08.11.2020		
	5		Monday, 09.11.2020 - Sunday, 15.11.2020	11 & 12.11.2020, Wednesday & Thursday - Sultan of Kelantan's Birthday (Kelantan) 14.11.2020, Saturday - Deepavali**	
	6		Monday, 16.11.2020 - Sunday, 22.11.2020		
	7		Monday, 23.11.2020 - Sunday, 29.11.2020		
	8	Mid Semester Break	Monday, 30.11.2020 - Sunday, 06.12.2020		
	9	Teaching & Learning (T&L - 7 Weeks)	Monday, 07.12.2020 - Sunday, 13.12.2020		
	10		Monday, 14.12.2020 - Sunday, 20.12.2020		
	11		Monday, 21.12.2020 - Sunday, 27.12.2020	25.12.2020, Friday - Christmas	
	12		Monday, 28.12.2020 - Sunday, 03.01.2021	01.01.2021, Friday - New Year of 2021	
	13		Monday, 04.01.2021 - Sunday, 10.01.2021		
	14		Monday, 11.01.2021 - Sunday, 17.01.2021		
	15		Monday, 18.01.2021 - Sunday, 24.01.2021		
	16	Revision Week	Monday, 25.01.2021 - Sunday, 31.01.2021	28.01.2021, Thursday Thai Pusam**	
	17	Examinations (3 Weeks)	Monday, 01.02.2021 - Sunday, 07.02.2021		
	18		Monday, 08.02.2021 - Sunday, 14.02.2021	12 & 13.02.2021, Friday & Saturday - Chinese New Year**	
	19		Monday, 15.02.2021 - Sunday, 21.02.2021		
	20	Mid Semester Break / Industrial Training (4 Weeks)	Monday, 22.02.2021 - Sunday, 28.02.2021	22.02.2021, Monday - 14.03.2021, Sunday - PPIJ	
	21		Monday, 01.03.2021 - Sunday, 07.03.2021	Intensive Course	
	22		Monday, 08.03.2021 - Sunday, 14.03.2021		
	23		Monday, 15.03.2021 - Sunday, 21.03.2021		
TWO	24/1	Teaching & Learning (T&L - 7 Weeks)	Monday, 22.03.2021 - Sunday, 28.03.2021		
	25/2		Monday, 29.03.2021 - Sunday, 04.04.2021		
	26/3		Monday, 05.04.2021 - Sunday, 11.04.2021		
	27/4		Monday, 12.04.2021 - Sunday, 18.04.2021	13.04.2021, Tuesday - Awal Ramadhan (Kelantan)	
	28/5		Monday, 19.04.2021 - Sunday, 25.04.2021		
	29/6		Monday, 26.04.2021 - Sunday, 02.05.2021	29.04.2021, Thursday - Nuzul Al-Quran 01.05.2021, Saturday - Labour Day	
	30/7		Monday, 03.05.2021 - Sunday, 09.05.2021		
	31/8	Mid Semester Break	Monday, 10.05.2021 - Sunday, 16.05.2021	13 & 14.05.2021, Thursday & Friday - Eid-ul fitr**	
	32/9	Teaching & Learning (T&L - 7 Weeks)	Monday, 17.05.2021 - Sunday, 23.05.2021		
	33/10		Monday, 24.05.2021 - Sunday, 30.05.2021	26.05.2021, Wednesday - Wesak Day 30.05.2021, Sunday - Pesta Kaamatan (Sabah)	
	34/11		Monday, 31.05.2021 - Sunday, 06.06.2021	31.05.2021, Monday - Pesta Kaamatan (Sabah) 01 & 02.06.2021, Tuesday & Wednesday - Hari Gawai (Sarawak)	
	35/12		Monday, 07.06.2021 - Sunday, 13.06.2021	08.06.2021, Tuesday - Agong's Birthday	
	36/13		Monday, 14.06.2021 - Sunday, 20.06.2021		
	37/14		Monday, 21.06.2021 - Sunday, 27.06.2021		
	38/15		Monday, 28.06.2021 - Sunday, 04.07.2021		
	39/16	Revision Week	Monday, 05.07.2021 - Sunday, 11.07.2021	07.07.2021, Wednesday - Penang Heritage 10.07.2021, Saturday - Penang Governor's Day	
	40/17	***Examination (2 Weeks)	Monday, 12.07.2021 - Sunday, 18.07.2021		
	41/18		Examination (3 Weeks)	Monday, 19.07.2021 - Sunday, 25.07.2021	20.07.2021, Tuesday - Eid-ul adha**
	42/19			Monday, 26.07.2021 - Sunday, 01.08.2021	21.07.2021, Wednesday - Eid-ul adha** (Kelantan) **2 weeks examination for engineering students undergoing Industrial Training
	*KSCP / LONG VACATION	43/20	Long Vacation/ Industrial Training (10/11 Weeks)	Monday, 02.08.2021 - Sunday, 08.08.2021	
44/21		Monday, 09.08.2021 - Sunday, 15.08.2021		10.08.2021, Tuesday - Awal Muharram	
45/22		Monday, 16.08.2021 - Sunday, 22.08.2021			
46/23		Monday, 23.08.2021 - Sunday, 29.08.2021			
47/24		Monday, 30.08.2021 - Sunday, 05.09.2021			
48/25		Monday, 06.09.2021 - Sunday, 12.09.2021		31.08.2021, Tuesday - National Day	
49/26		Monday, 13.09.2021 - Sunday, 19.09.2021		*Courses During Long Vacation	
50/27		Monday, 20.09.2021 - Sunday, 26.09.2021			
51/28		Monday, 27.09.2021 - Sunday, 03.10.2021			
52/29		Monday, 04.10.2021 - Sunday, 10.10.2021			

**This Academic Calendar is subject to change

SCHOOL PRINCIPAL OFFICERS



DEAN
Prof. Dr. Habibah A Wahab



DEPUTY DEAN
(Academic, Career & International)
Dr. Nur Hidayah Kaz Abdul Aziz



DEPUTY DEAN
(Research, Innovation & Industry-
Community Engagement)
Assoc. Prof. Dr. Nurzalina Abdul Karim
Khan



SENIOR ASSISTANT REGISTRAR
Ms. Zuraini Che Harun



ASSISTANT REGISTRAR
Mr. Ahmad Faiz Badiozaman

PROGRAMME CHAIRMAN



DISCIPLINE OF PHARMACOLOGY
Assoc. Prof. Dr. Vikneswaran Murugaiyah



DISCIPLINE OF PHYSIOLOGY
Dr. Aidiahmad Dewa



**DISCIPLINE OF PHARMACEUTICAL
TECHNOLOGY**
Dr. Suriani Mohamad



**DISCIPLINE OF PHARMACEUTICAL
CHEMISTRY**
Assoc. Prof. Dr. Salizawati Muhamad
Salhimi



**DISCIPLINE OF CLINICAL, SOCIAL &
ADMINISTRATIVE PHARMACY**
Assoc. Prof. Dr. Baharudin Ibrahim



**POSTGRADUATE PROGRAMME
(COURSEWORK & MIXED MODE)**
Dr. Hadzliana Zainal
Coordinator

1.0 INTRODUCTION

1.1 School of Pharmaceutical Sciences

A pharmacist is a professional scientist who possesses the skills in all aspects relating to the design, development, delivery, supply, control and the usage of drugs. The School is currently using an integrated approach in teaching and learning as pharmacists need to acquire a broad range of scientific education. The Bachelor of Pharmacy degree correlates scientific findings with a strong foundation of core science courses. The students will expand their knowledge in physiology, microbiology, medicinal chemistry (drug chemistry), pharmaceutics (drug formulation to produce safe and effective medication), pharmacology (drug action on the body), clinical pharmacy (covering the knowledge on diseases and how drugs or medicines are chosen to treat and/or prevent certain diseases), and social and administrative pharmacy (economy, behaviour and drug policy).

Established in 1972, the School of Pharmaceutical Sciences, Universiti Sains Malaysia is the first pharmacy school in Malaysia. The School offers Bachelor of Pharmacy and Masters of Pharmacy in Clinical Pharmacy degrees by coursework, and Masters of Science and Doctoral degrees by research. The degree of Bachelor of Pharmacy with Honours is offered through a four-year programme.

The School of Pharmaceutical Sciences started its first intake of 22 students in 1972, 4 years after Universiti Sains Malaysia was established in Penang. During its brief history, the School has undergone many changes and developments, both physical and academic. It moved to the present premise in 1991, and now has modern and well-equipped laboratories for teaching and research. The current staff strength stands at 46 full-time lecturers, 14 administrative staff and 26 technical staff members. In addition, the School is also using the services of part-time lecturers from other schools or centers of the University, besides a number of honorary consultants from Hospital Pulau Pinang, honorary lecturers from Hospital Pulau Pinang, National Poison Centre, USM, Pulau Pinang, USM Health Campus, Kubang Kerian, Kelantan and Pharmacy preceptors from both hospital and community pharmacies for its clinical programme.

To date, the School of Pharmaceutical Sciences has produced over 3320 undergraduate and more than 500 postgraduate students, many of whom are presently holding important positions in the public and corporate sectors. Even with the establishment of four more faculties of pharmacy in University of Malaya, Universiti Kebangsaan Malaysia, Universiti Teknologi MARA, International Islamic University Malaysia and Universiti Sultan Zainal Abidin, entrance requirement into pharmacy remains very competitive.

In addition to teaching the undergraduate programme, which has been the School's priority since its establishment, research activities are also emphasized and enculturated in the School. Since 20 years ago, research activities have increased by leaps and bounds, some in close collaborations with other local institutions as well as

with foreign institutions. Most of the research projects are supported by government or private research grants that are awarded to the academic staff involved. The School offers postgraduate studies by research leading to Master of Science and Doctoral degrees, and by coursework leading to a Master of Pharmacy degree in clinical pharmacy. Currently, there are both local and international students; most of the international students are from Bangladesh, Iran, Indonesia, Thailand, Pakistan, Libya, Ghana, Yemen, Sudan, India, St. Vincent, Jordan, Nigeria, Saudi Arabia, Palestine, Iraq and Nepal.

The School also undertakes many consultation works for the local pharmaceutical industries as well as for some multinational companies. Some of the activities include *in vivo* bioavailability studies, chemical and drug analyses, pyrogen testing, product development and biological assays. In the short period of its existence, the School can be proud of its achievements and its standing as one of the premier schools of pharmacy in this part of the world.

1.2 Mission and Vision of the School of Pharmaceutical Sciences

Mission of the School of Pharmaceutical Sciences:

The School of Pharmaceutical Sciences is committed to produce professional, innovative and competitive graduates to meet the needs of pharmacy profession and enhance consultancy, trans-disciplinary research and global collaboration for sustainable development and empowerment of society.

Vision of the School of Pharmaceutical Sciences:

To become a global centre of excellence for sustainable and innovative pharmaceutical education, research and practice for the wellness of society.

1.3 Bachelor of Pharmacy Programme

The degree of Bachelor of Pharmacy with Honours is awarded after the student has successfully fulfilled all the requirements of a four-year pharmacy programme.

The Pharmacy course consists of core, elective, option and university courses. The **core courses** are the main courses whereas **elective courses** are courses that provide advanced knowledge on certain pharmaceutical areas. Students may choose any elective course that is offered. **Option courses**, on the other hand, are courses in other fields such as Humanities, Social Sciences and Management. These courses are intended to equip the students with the skills necessary for interacting constructively with the community and to inculcate a caring and responsible attitude towards society.

1.4 General Educational Goals and Objectives

Objectives:

The Bachelor of Pharmacy Degree offered by the School of Pharmaceutical Sciences, USM aims to produce graduates who are:

- competent, skilful, resourceful, ethical and professional;
- self-reliant with leadership values and critical thinking skills;
- caring, compassionate and show respect and fairness to others; and
- adaptable to socioeconomics, health, and environmental changes.

1.5 Programme Outcomes

The outcomes of a pharmacy programme can be grouped into 7 areas. At the end of the programme the students will be able to:

- demonstrate knowledge and understanding in relevant areas of pharmaceutical sciences and pharmacy practice;
- analyze and formulate solutions to pharmaceutical related problems;
- apply practical, digital and numeracy skills in clinical, industrial and community pharmacy settings;
- demonstrate effective interpersonal skills and teamwork through verbal and nonverbal communication in various settings;
- reflect on personal knowledge and skills via engagement in activities that enhance personal and professional development;
- demonstrate entrepreneurship skills pertaining to pharmaceutical related areas;
- display integrity, ethics and professionalism in general conduct.

1.6 Applications of Softskills

The softskills training have been incorporated throughout the programme, including communication, entrepreneurial, interpersonal and leadership skills.

1.7 Programme Profile

Core courses offered at level 100, 200, 300 and 400 can be divided into 6 disciplines, namely:

- i) Physiology
- ii) Pharmacology
- iii) Pharmaceutical Chemistry
- iv) Pharmaceutical Technology
- v) Clinical Pharmacy
- vi) Social and Administrative Pharmacy

These courses are integrated in the curriculum.

Physiology provides knowledge of the function of the human body. It forms the basis for the understanding of the action, uses of drugs and pathophysiology of diseases that are taught in pharmacology and clinical pharmacy.

Pharmacology provides knowledge concerning various types of drugs that are used in the treatment of diseases. Discussion related to absorption, distribution, metabolism, excretion, mechanism of action, uses and adverse effects are the main content of this discipline.

Pharmaceutical Chemistry emphasizes the application of the principles of basic chemistry to the study of drugs, their physico-chemical properties, structures and their relationship to biological activities. Analytical techniques for identification and quality control of drugs and some aspects of natural product chemistry are taught.

Pharmaceutical Technology provides the knowledge in pharmaceutical formulation and preparation in various dosages, new dosage designs, industrial processes, quality control, microbiological control besides biopharmacy and pharmacokinetic aspects.

Clinical Pharmacy introduces the students to disease states and disorders and the rationale of drug choice in the treatment and/or prevention of these illnesses. Clinical Pharmacy emphasizes on the integration of all disciplines in pharmacy.

To enable students to understand and acquire detailed knowledge pertaining to the role of a pharmacist in the clinical situation, students are required to participate in ward rounds at the Hospital Pulau Pinang, Hospital Seberang Jaya and community pharmacy in the Penang area.

Social and Administrative Pharmacy is designed to prepare individuals for responsible, leadership position in pharmacy education, research and/or management in academia, industry or public service. This includes possible careers in governmental agency, pharmaceutical firms, community pharmacies, universities, professional and international bodies and health insurance companies in the future. Along with the increasing importance of medicines and drugs in society, there are

increasing complex interactions among government and non-governmental agencies, providers, consumers and policy-makers thus resulting in a critical need for persons with advanced training in social and administrative pharmacy.

1.8 Programme Requirements

Upon completion of a recognized B.Pharm. degree, a pharmacy graduate is required to undergo a period of housemanship or pupillage for 12 months at any general or private hospital, pharmaceutical industry or at any retail pharmacy recognized by the Pharmacy Board of Malaysia. The objective of the pupillage is for graduates to undergo a planned training programme on aspects of pharmacy practice under the supervision of a registered pharmacist. After passing the Forensic Pharmacy examination and completing one year of pupillage, graduates are eligible to register with the Pharmacy Board of Malaysia and may practice as a registered Pharmacist in Malaysia.

1.9 Type of Courses

1.9.1 Core Courses

Level 100

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
1.	FAR 113/3	Organic Chemistry
2.	FAR 123/3	Microbiology for Pharmacy
3.	FAR 132/3	Basic Physiology and Pharmacology
4.	FAR 153/2	Communication Skill in Pharmacy Practice
5.	FAR 191/4	Research Methodology and Statistics in Pharmacy
2nd SEMESTER		
6.	FAR 114/3	Pharmaceutical Chemistry
7.	FAR 115/2	Principles of Medicinal Chemistry
8.	FAR 116/3	Biochemistry
9.	FAR 122/4	Dosage Form I
10.	FAR 162/2	Principles of Immunology and Oncology
11.	FAR 193/3	Social and Public Health Pharmacy

Level 200

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
12.	FAR 215/3	Pharmaceutical Analysis
13.	FAR 221/3	Physical Pharmacy I
14.	FAR 222/3	Dosage Form I

15.	FAR 240/4	Peripheral Nervous System and Therapy
16.	FAR 281/2	Introduction to Industrial Pharmacy and Pharmacy Practice
17.	FAR 292/2	Pharmaceutical Management
2nd SEMESTER		
18.	FAR 223/3	Physical Pharmacy II
19.	FAR 224/2	Drug Delivery and Targeting
20.	FAR 241/4	Antimicrobial Therapy
21.	FAR 242/4	Endocrine System and Metabolism
16.	FAR 281/2	Introduction to Industrial Pharmacy and Pharmacy Practice

Level 300

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
22.	FAR 324/4	Pharmaceutical Processing
23.	FAR 325/2	Biopharmaceutics and Pharmacokinetics
24.	FAR 341/4	Respiratory, Renal, Blood Systems and Therapy
25.	FAR 342/3	Cardiovascular System and Therapy
26.	FAR 352/4	Clinical Pharmacy Practice
2nd SEMESTER		
27.	FAR 314/3	Pharmacognosy and Phytochemistry
28.	FAR 343/2	Gastrointestinal System and Therapy
29.	FAR 344/4	Central Nervous System and Therapy
30.	FAR 354/2	Pharmacoinformatics: Theory and Application
31.	FAR 355/2	Clinical Pharmacokinetics & Pharmacotherapeutic Monitoring
32.	FAR 382/2	Forensic Pharmacy

Level 400

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
33.	FAR 420/3	Pharmaceutical Biotechnology
34.	FAR 462/2	Community Pharmacy Practice
35.	FAR 491/3	Pharmacoepidemiology & Pharmacoeconomics in Developing Countries
2nd SEMESTER		
-	-	-

1.9.2 Specialization Elective

Industrial Pharmacy Stream

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
36.	FAR 411/2	Advanced Pharmaceutical Analysis
37.	FAR 426/2	Industrial Pharmacy
2nd SEMESTER		
38.	FAR 427/8	Industrial Training (Industrial Pharmacy)

Clinical Pharmacy Stream

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
39.	FAR 460/2	Traditional and Complementary Medicine
40.	FAR 467/2	Applied Therapeutic I
2nd SEMESTER		
41.	FAR 465/2	Pharmacy Aseptic Services
42.	FAR 466/2	Pharmacotherapy in Special Population
43.	FAR 468/4	Applied Therapeutic II

Community Pharmacy Stream

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
39.	FAR 460/2	Traditional and Complementary Medicine
40.	FAR 467/2	Applied Therapeutic I
2nd SEMESTER		
44.	FAR 492/8	Industrial Training (Community Pharmacy)

1.9.3 Elective Courses

Level 100

NO.	CODE/ UNIT	COURSE TITLE
1st and 2nd SEMESTER		
-	-	-

Level 200

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
45.	FEL 273/2	Veterinary Pharmacy
46.	FEL 274/2	Health Promotion in Pharmacy
2nd SEMESTER		
47.	FEL 275/2	Toxicology
48.	FEL 276/2	Introduction to Pharmaceutical Marketing

Level 300

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
-	-	-
2nd SEMESTER		
49.	FEL 373/2	Drug Modelling
50.	FEL 374/2	Drug and Society

Level 400

NO.	CODE/ UNIT	COURSE TITLE
1st SEMESTER		
51.	FEL 470/3	Research Exercise
52.	FEL 476/2	Current Topics in Human Physiology
53.	FEL 477/2	Personal Care
54.	FEL 479/2	Precision Medicine
2nd SEMESTER		
51.	FEL 470/3	Research Exercise
55.	FEL 478/2	Patient Bed Side Physiology

1.10 Graduation Requirements

Students must fulfill the following requirements to graduate:

- [a] Fulfill the minimum residential requirements during the course of studies.
- [b] Fulfill all credit requirements; i.e. the requirements for each component [Core, Elective, Option and University courses].
- [c] Obtained a CGPA of 2.67 and above for the Core components, by achieving a grade of B- and above for each Core course.

- [d] Obtained a CGPA of 2.00 and above for the program.
- [e] Achieved a minimum grade C or a grade point of 2.00 for University courses.

1.10.1 Graduating Unit Structure

NO.	TYPE OF COURSES	UNIT
1.	Core	102
2.	Electives*/ Options**	28
3.	University Courses***	15
TOTAL		145

* Offered by the School of Pharmaceutical Sciences only; including Streaming Electives (12 units)

** Offered by other schools

*** Refer to Guideline for Course/Unit Registration (Page 10) and University Course Requirements (page 36)

1.10.2 Guideline for Course/Unit Registration (Local Students)

LEVEL YEAR	100		200		300		400						TOTAL UNIT
	1	2	1	2	1	2	I		II		I		
SEMESTER	I	II	I	II	I	II	Clinical Pharmacy		Industrial Pharmacy		Community Pharmacy		
CORE	15	17	16	14	17	15	8		8		8	2 ⁺	102
SPECIALIZATION ELECTIVES							4	8	4	8	4	8	12
ELECTIVE/ OPTION			2-4	2-4	4	2-4	2-9	2-5	3-9	3			12 - 16
HFE224/2; HFF225/2; WUS101/2		*WUS 101/2	HFF 225/2	HFE 224/2									
ENGLISH LANGUAGE	2*		2*		2*	2*	2*		2*		2*		15
BAHASA MALAYSIA				2**		2**	2**	2**	2**		2**		
CO-CURRICULUM	1	1	1	1	1	1	1	1	1		1		
OPTIONS	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2		1-2		
TOTAL	18-21	16-21	18-21	14-21	18-21	16-21	12-21	9-21	12-21	11-21	12-21	11-21	145

*English Language (Dependent on the English Language level)

**LKM 400/2 Bahasa Malaysia IV - Compulsory to register and pass

+ FAR281/2 Introduction to Industrial Pharmacy and Pharmacy Practice – To register during this semester for Industrial Stream students only

1.10.3 Guideline for Course/Unit Registration (International Students)

LEVEL YEAR	100		200		300		400						TOTAL UNIT
	1	2	1	2	1	2	4		4		4		
SEMESTER	I	II	I	II	I	II	I	II	I	II	I	II	
							Clinical Pharmacy		Industrial Pharmacy		Community Pharmacy		
CORE	15	17	16	14	17	15	8		8		8	2	102
SPECIALIZATION ELECTIVES							4	8	4	8	4	8	12
ELECTIVE/ OPTION	-	-	2-4	2-4	4	2-4	2-9	2-5	3-9	3			12 - 16
HFF225/2; SEA205E/4		+SEA 205E/ 4	HFF 225/2										15
ENGLISH LANGUAGE	2*		2		2*	2*	2*		2		2		
BAHASA MALAYSIA				2		2							
CO-CURRICULUM	1	1	1	1	1	1	1	1	1		1		
OPTION/SKILL	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2	1-2		1-2		
TOTAL	18-21	16-21	18-21	14-21	18-21	16-21	12-21	9-21	12-21	11-21	12-21	10-21	145

*English Language (Dependent on the English Language level)

**LKM 100/2 Bahasa Malaysia IV - Compulsory to register and pass

+ FAR281/2 Introduction to Industrial Pharmacy and Pharmacy Practice – To register during this semester for Industrial Stream students only

2.0 ACADEMIC SYSTEM AND GENERAL INFORMATION

2.1 Course Registration Activity

Registration of courses is an important activity during the period of study at the university. It is the first step for the students to sit for the examination at the end of each semester. Signing up for the right courses each semester will help to facilitate the graduation process based on the stipulated duration of study.

2.1.1 Course Registration Secretariat for the Bachelor's Degree and Diploma Programmes

Student Data and Records Unit
Academic Management Division
Registry
Level 1, Chancellory Building

Tel. No. : 04-653 2925/2924/2923
Fax No. : 04-657 4641
E-Mail : sdrp@usm.my
Website :
<http://bpa.usm.my/index.php/ms/>

2.1.2 Course Registration Platform

1. E-Registration

E-Registration is a platform for online course registration. The registration is done directly through the Campus Online portal. Course registration exercise for both semesters begins after the release of Official examination results of every semester 2.

The online registration for Long Vacation Semester (KSCP) begins officially after the release of the 2nd semester examination result.

The date of the E-Registration will be announced to the students via email during the revision week of every semester and details of the activity will be displayed in the USM's official website.

All courses are allowed to be registered through E-Registration, except for co-curriculum courses. The registration of co-curriculum courses is managed by the Director of the Centre for Co-Curriculum Programme at the

Main Campus or the Coordinator of the Co-Curriculum Programme at the Engineering Campus and the Coordinator of the Co-Curriculum Programme at the Health Campus.

Students are required to preregister their co-curriculum courses before the actual E-Registration activity. They are allowed to follow the respective course once the preregistration is approved. The list of the co-curriculum courses taken will be included in their course registration data.

Access to *E-Daftar* System

- a. *E-Daftar* System can be accessed through the Campus Online portal (<https://campusonline.usm.my>).
- b. Students need to use their USM E-mail ID and password to access their profile page, which includes the *E-Daftar* menu.
- c. Students need to print the course registration confirmation slip upon completion of the registration process or after updating the course registration list (add/ drop) within the *E-Daftar* period.

2. Course Registration Activity at the School

Registration activities conducted at the Schools/Centres are applicable to students who are academically active and under Probation (P1/P2) status. Students who encounter difficulties in registering their courses during the E-Registration period are allowed to register the courses at their respective school/centre during the official period of course registration.

The official period for registration begins on the first day of the new semester until 3rd week. Registration during 4th - 6th week of the official academic calendar is considered as late registration. Hence, a penalty of RM50.00 per registration will be imposed unless justifications for the late registration are provided by the students. The Examination and Graduation Unit, Academic Management Section (Registrar Department) will manage students late registration.

2.1.3 Course Registration General Information

1. Several information/document can be referred by the students pertaining to the registration activity:

- a. The website of the respective School, for the updated information of the courses offered or course registration procedure.
- b. List the courses to be registered and number of units (unit value) for each course (refer to Students Handbook for Study Programme).

Academic Status	PNG	Minimum Units	Maximum Units
P1	1.99 & Below	9	12
P2		9	10

2. Type of course codes during registration:

T = Core courses
E = Elective courses
M = Minor courses
U = University courses

} Grade and number of units obtained from these courses are considered for graduation

Two (2) other course codes are:

Y = audit courses
Z = prerequisite courses

} Grade and number of units obtained are not considered for graduation

3. Academic Advisor's advice and approval are necessary.
4. Students are not allowed to register or resit any course with grade 'C' and above.
5. Medical, Dentistry and Pharmacy students are not allowed to register or resit any course with grade 'B-' and above.

2.1.4 Information/Document Given to All Students through Campus Online Portal (<https://campusonline.usm.my>)

1. The information of Academic Advisor.
2. Academic information such as academic status, GPA value, CGPA value and year of study.
3. Cangred and Course Registration Form.
4. List of courses offered by all Schools/Centres.
5. Teaching and Learning Timetable for all Schools/Centres/Units from the three campuses.

6. List of pre-registered courses which have been added into the students' course registration record (if any).
7. Reminders about the University course registration policies/general requisites.

2.1.5 Registration of Language and Co-Curricular Courses

1. Registration of Language courses through E-Daftar is allowed.
 - a. However, if any problem arises, registration for language courses can still be carried out/updated during the official period of OCR at the office of the School of Languages, Literacies and Translation.
 - b. All approval/registration/dropping/adding of language courses is under the responsibility and administration of the School of Languages, Literacies and Translation.
 - c. Any problems related to the registration of language courses can be referred to the School of Languages, Literacies and Translation. The contact details are as follows:

General Office	: 04-653 4542/ 5243/ 5248	}	for Main Campus students
Malay Language Programme Chairperson	: 04-653 3974		
English Language Programme Chairperson	: 04-653 3406		
Foreign Language Programme Chairperson	: 04-653 3396		
Engineering Campus Programme Chairperson : 04-599 5407			
	: 04-599 6385		
Health Campus Programme Chairperson : 09-767 1252			

2. Registration of co-curricular courses through E-Daftar is not allowed.
 - a. Registration for co-curricular courses is either done through pre-registration before the semester begins or during the first/second week of the semester. Co-curricular courses will be included in the students' course registration account prior to the *E-Daftar* activity, if their pre-registration application is successful.

- b. All approval/registration/dropping/adding of co-curricular courses is under the responsibility and administration of:

Director of the Centre for Co-Curricular Programme,
Main Campus (04-653 5242/5243/5248)

Coordinator of the Centre for Co-Curricular Programme,
Engineering Campus (04-599 5097/6385)

Coordinator of the Centre for Co-Curricular Programme,
Health Campus (09-767 7547)

3. **Dropping of Language and Co-Curricular courses, if necessary, must be made within the first week.** After the first week, a fine of RM50.00 will be imposed for each course.

2.1.6 Registration of ‘Audit’ Courses (Y code)

Registration for the ‘Audit’ course (Y code) is not allowed on the E-Daftar. It can be done during the official period of OCR at the School or Centre involved.

Students who are interested must complete the course registration form which can be printed from the Campus Online Portal or obtained directly from the School. Approval from the lecturers of the courses and the Dean/ Deputy Dean (Academic) of the respective school is required.

Registration of ‘Audit’ courses (Y code) is not included in the calculation of the total registered workload units. Grades obtained from ‘Audit’ course are not considered in the calculation of CGPA and total units for graduation.

2.1.7 Registration of Prerequisite Courses (Z code)

Registration of Prerequisite courses (Z code) is included in the total registered workload (units). Grades obtained from the Prerequisite courses are not considered in the calculation of CGPA and units for graduation.

2.1.8 Late Course Registration and Late Course Addition

Late course registration and addition are only allowed during the first and up to the third week with the approval from the Dean. Application to add a course after the third week will not be considered, except for special cases approved by the University.

RM50.00 fine will be imposed on students if reasons given for late registration are not accepted by the University or School.

2.1.9 Dropping of Courses

Dropping of courses is allowed until the end of the sixth week.

For this purpose, students must meet the requirements set by the University as follows:

1. Students who intend to drop any course are required to fill in the dropping of course form. The form needs to be signed by the lecturer of the course involved and the Dean/Deputy Dean (Academic, Career International Affairs) of the School. The form has to be submitted to the general office of the School/Centre which offers that particular course.
2. Students who wish to drop language course must obtain the signature and stamp of the Dean/Deputy Dean (Academic, Career and International Affairs) of the School of Languages, Literacies and Translation.
3. Students who wish to drop the Co-Curricular courses must obtain the approval of the Director/Co-ordinator of the Co-Curricular Programme.
4. The option for dropping courses cannot be misused. Lecturers have the right not to approve the course that the student wishes to drop if the student is not serious, such as poor attendance record at lectures, tutorials and practical, as well as poor performance in coursework. The student will be barred from sitting for the examination and will be given grade 'X' and is not allowed to repeat the course during the Courses during the Long Vacation (KSCP) period.

2.1.10 Course Registration Confirmation Slip

The course registration confirmation slip that has been printed/obtained after registering the course should be checked carefully to ensure there are no errors, especially the code type of the registered courses.

Any data errors for course registration must be corrected immediately whether during the period of *E-Daftar* (for students with active status only) or during the registration period at the Schools.

2.1.11 Revising and Updating Data/Information/ of Students' Personal and Academic Records

Students may check their personal and academic information through the Campus Online portal.

Students are advised to regularly check the information displayed on this website.

1. Student may update their correspondence address, telephone number and personal email through Campus Online portal.
2. The office of the Student Data and Records Unit must be notified of any application for updating the personal data such as the spelling of names, identification card number, passport number and address (permanent address and correspondence address).
3. The office of the Student Data and Records Unit must be notified of any application for correction of academic data such as information on major, minor, MUET result and the course code (besides data on the examination results).

2.1.12 Academic Advisor

Each School will appoint an Academic Advisor for each student. Academic Advisors will advise their students under their responsibility on academic matters.

2.2 Interpretation of Unit/Credit/Course

2.2.1 Unit

Each course is given a value, which is called a **UNIT**. The unit is determined by the scope of its syllabus and the workload for the students. In general, a unit is defined as follows:

Type of Course	Definition of Unit
Theory	1 unit is equivalent to 1 contact hour per week for 13 – 14 weeks in one semester
Practical/Laboratory/ Language Proficiency	1 unit is equivalent to 1.5 contact hours per week for 13 – 14 hours in one semester
Industrial Training/ Teaching Practice	1 unit is equivalent to 2 weeks of training

Based on the requirements of Malaysian Qualifications Framework (MQF):

One unit is equivalent to 40 hours of student learning time

[1 unit = 40 hours of Student Learning Time (SLT)]

2.2.2 Accumulated Credit Unit

Units registered and passed are known as credits. To graduate, students must accumulate the total number of credits stipulated for the programme concerned.

2.3 Examination System

Examinations are held at the end of every semester. Students have to sit for the examination of the courses they have registered for except for courses with 100% coursework. Students are required to settle all due fees and fulfil the standing requirements for lectures/tutorials/practical and other requirements before being allowed to sit for the examination of the courses they have registered for. Course evaluation will be based on the two components of coursework and final examinations. Coursework evaluation includes tests, essays, projects, assignments and participation in tutorials.

2.3.1 Duration of Examination

Evaluated Courses	Examination Duration
2 units	1 hour for coursework of more than 40%
2 units	2 hours for coursework of 40% and below
3 units or more	2 hours for coursework of more than 40%
3 units or more	3 hours for coursework of 40% and below

2.3.2 Barring from Examination

Students will be barred from sitting for the final examination if they do not fulfil at least 70% of the course requirements, such as absence from lectures and tutorials, and have not completed/fulfilled the required components of coursework. A grade 'X' would be awarded for a course for which a student is barred. Students will not be allowed to repeat the course during the *Courses During the Long Vacation (KSCP)* period.

2.3.3 Grade Point Average System

Students' academic achievement for registered courses will be graded as follows:

Alphabetic Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Grade Points	4.00	3.67	3.33	3.00	2.67	2.33	2.00	1.67	1.33	1.00	0.67	0

Students who obtained a grade 'C-' and below for a particular course would be given a chance to improve their grades by repeating the course during the KSCP (see below) or normal semester. Students who obtained a grade 'C' and above for a particular course are not allowed to repeat the course whether during KSCP or normal semester.

The achievement of students in any semester is based on Grade Point Average (GPA) achieved from all the registered courses in a particular semester. GPA is the indicator to determine the academic performance of students in any semester.

CGPA is the Cumulative Grade Point Average accumulated by a student from one semester to another during the years of study.

The formula to compute GPA and CGPA is as follows:

$$\text{Grade Point Average} = \frac{\sum_{i=1}^n U_i M_i}{\sum_{i=1}^n U_i}$$

where:

- n = Number of courses taken
- U_i = Course units for course i
- M_i = Grade point for course i

Example of calculation for GPA and CGPA:

	Course	Unit	Grade Point (GP)	Grade (G)	Total GP
Semester I	ABC XX1	4	3.00	B	12.00

	ABC XX2	4	2.33	C+	9.32
	BCD XX3	3	1.67	C-	5.01
	CDE XX4	4	2.00	C	8.00
	EFG XX5	3	1.33	D+	3.99
	EFG XX6	2	2.67	B-	5.34
		20			43.66

$$\text{GPA} = \frac{43.66}{20} = 2.18$$

	Course	Unit	Grade Point (GP)	Grade (G)	Total GP
Semester II	ABC XX7	3	1.00	D	3.00
	ABB XX8	4	2.33	C+	9.32
	BBC XX9	4	2.00	C	8.00
	BCB X10	4	2.67	B-	10.68
	XYZ XX1	3	3.33	B+	9.99
		18			40.99

$$\text{GPA} = \frac{40.99}{18} = 2.28$$

$$\text{CGPA} = \frac{\text{Total Accumulated GP}}{\text{Total Accumulated Unit}} = \frac{43.66 + 40.99}{20 + 18} = \frac{84.65}{38} = 2.23$$

From the above examples, the CGPA is calculated as the total grade point accumulated for all the registered courses and divided by the total number of the registered units.

2.3.4 Courses During the Long Vacation (*Kursus Semasa Cuti Panjang*) (KSCP)

KSCP is offered to students who have taken a course earlier and obtained a grade of 'C-', 'D+', 'D', 'D-', 'F' and 'DK' only. Students who obtained a grade 'X' or 'F*' are not allowed to take the course during KSCP.

The purpose of KSCP is to:

1. Give an opportunity to students who are facing time constraints for graduation.
2. Assist students who need to accumulate a few more credits for graduation.
3. Assist probationary students to enhance their academic status.

4. Assist students who need to repeat a prerequisite course, which is not offered in the following semester.

However, this opportunity is only given to students who are taking courses that they have attempted before and achieved a grade as stipulated above, provided that the course is being offered. Priority is given to final year students. Usually, formal lectures are not held, and teaching is via tutorials.

The duration of KSCP is 3 weeks, i.e. 2 weeks of tutorial and 1 week of examination, all held during the long vacation. The KSCP schedule is available on the University's Academic Calendar.

The Implementation of KSCP

1. Students are allowed to register for a maximum of 3 courses and the total number of units registered must not exceed 10.
2. Marks/grades for coursework are taken from the highest marks/the best grades obtained in a particular course in the normal semester before KSCP. The final overall grade is determined as follows:

**Final Grade = The best coursework marks or grade +
Marks or grade for KSCP examination**

3. GPA calculation involves the **LATEST** grades (obtained in KSCP) and also involves courses taken in the second semester and those repeated in KSCP. If the GPA during KSCP as calculated above is 2.00 or better, the academic status will be active, even though the academic status for the second semester was probation status. However, if the GPA for KSCP (as calculated above) is 1.99 or below, the academic status will remain as probation status for the second semester.
4. Graduating students (those who have fulfilled the graduation requirements) in the second semester are not allowed to register for KSCP.

2.3.5 Academic Status

Active Status: Any student who achieves a GPA of 2.00 and above for any examination in a semester will be recognised as ACTIVE and be allowed to pursue his/her studies for the following semester.

Probation Status: A probation status is given to any student who achieves a GPA of 1.99 and below. A student who is under probation status for three consecutive semesters (P1, P2, FO) will not be allowed to pursue his/her studies at the university. On the other hand, if the CGPA is 2.00 and above, the student concerned will be allowed to pursue his/her studies and will remain at P2 status.

2.3.6 Penalty for not attending the examination

Students who do not attend the examination for any of the courses they have registered for must provide their reasons in writing to the Principal Assistant Registrar, Examination and Graduation Unit, Academic Management Division within 48 hours (for full time students) and 48 hours (for Distance Learning Education programme students) after the examination being held. The reasons provided will be considered by the Examination Board of the School/Centre and endorsed by the University Examination Board as below:

1. For reasons accepted by the University Examination Board, student will be granted DK grade (with permission). DK grade will be granted to the students if they submit Medical Certificates (from hospital/government clinic or panel clinic/USM clinic) or submit any reason that can be accepted by the University Examination Board. DK grade will be exempted from the GPA/CGPA calculations of the student.
2. Candidate who fail to sit for the examination without any reason will be granted F* grade.

2.3.7 Termination of Candidature

Without any prejudice to the above regulations, **the University Examination Council has the absolute right to terminate any student's studies if he/she does not fulfil the accumulated minimum credits.**

The University Examination Council has the right to terminate any student's studies due to certain reasons (a student who has not registered for the courses, has not attended the examination without valid reasons), as well as medical reasons can be disqualified from pursuing his/her studies.

2.3.8 Examination Results

Full results (with grade) will be announced by the University through the Campus Online portal (campusonline.usm.my) after the School Examination Council meeting which is approximately one month after the final examination.

Students can print their official semester results document namely 'SEMGRED' through the Campus Online portal (campusonline.usm.my) on the same day/date of the results announcement.

2.3.9 Re-checking of Examination Result

Students can apply for the rechecking of their examination result for the course/s taken during the semester. The application form can be obtained from USM official website or at the Academic Management Division, Registry Department of each campus. The appeal form must be submitted along with a copy of the official receipt / e-payment statement amounting to RM25.00 for each examination paper. The appeal period is two (2) weeks after the official result is announced.

Rechecking process is only to ensure that all answers in the scripts have been marked and consistently graded and the calculation of marks awarded are correct. The answer script of the course will not be reevaluated.

The school will confirm any changes in the students' examination results. If there is any changes in the grades or marks, students can request for a refund of RM25.00. The Examination and Graduation Unit will make amendments to the results of the course and students can check their updated status in the respective Campusonline portals.

2.4 Unit Exemption

2.4.1 Unit Exemption

Unit exemption is defined as the total number of units given to students who are pursuing their studies in USM that are exempted from the graduation requirements. Students only need to accumulate the remaining units for graduation purposes. Only passes or course grades accumulated or acquired in USM will be included in the calculation of the Cumulative Grade Point Average (CGPA) for graduation purposes.

2.4.2 Regulations and Implementation of Unit Exemption

1. Diploma holders from recognised Public and Private Institutions of Higher Learning:
 - a. Unit exemption can only be given to courses taken at diploma level. However, unit exemption are not permitted for *Mata Pelajaran Umum* (MPU) courses such as Language, Ethnic Relations and TITAS courses taken at the diploma level.
 - b. Courses for unit exemption may be combined (in two or more combinations) in order to obtain exemption of one course at degree level. However if the School would like to approve only one course at the diploma level for unit exemption of one course at degree level, the course at diploma level must be equivalent to the degree course and have the same number of or more units.
 - c. Courses taken during employment (in service) for diploma holders cannot be considered for unit exemption.
 - d. The minimum achievement at diploma level that can be considered for unit exemption is a minimum grade 'C' or 2.0 or equivalent.
 - e. The total number of semesters exempted should not exceed two semesters.
 - f. **In order to obtain unit exemption for industrial training**, a student must have continuous work experience for at least two years in the area. If a student has undergone industrial training during the period of diploma level study, the student must have work experience for at least one year. The students are also required to produce a report on the level and type of work performed. Industrial training unit exemption cannot be considered for semester exemption as the industrial training is carried out during the long vacation in USM.
2. IPTS (Private Institution of Higher Learning) USM Supervised/ External Diploma Graduates:
 - a. Students who are IPTS USM supervised/external diploma graduates are given unit exemption as

stipulated by the specific programme of study. **Normally, unit exemption in this category is given as a block according to the agreement** between USM (through the School that offers the programme) with the IPTS.

b. **Students from recognised local or foreign IPTA** (Public Institutions of Higher Learning)/IPTS who are studying at the Bachelor’s Degree level may apply to study in this university and if successful, may be considered for unit exemption, subject to the following conditions:

- [1] Courses taken in the previous IPT are equivalent (at least 80% of the course must be the same) to the courses offered in USM.
- [2] Students taking courses at Advanced Diploma level in IPT that are recognised to be equivalent to the Bachelor’s Degree course in USM may be considered for unit exemption as in Section 2.5.
- [3] The total maximum unit exemption allowed should not exceed 30% of the total unit requirement for graduation.

2.4.3 Total Number of Exempted Semesters

Semester exemption is based on the total units exempted as below:

Total Units Exempted	Total Semesters Exempted
8 and below	None
9 – 32	1
33 to 1/3 of the total units for graduation	2

2.4.4 Application Procedure for Unit Exemption

Any student who would like to apply for unit exemption is required to complete the Unit Exemption Application Form which can be obtained from the Examination and Graduation Section or the respective Schools.

The form must be approved by the Dean of the School prior to submission to the Examination and Graduation Section for consideration and approval.

2.5 Credit Transfer

Credit transfer is defined as the recognition of the total number of credits obtained by USM students taking courses in other IPTAs (Public Institution of Higher Learning) within the period of study at USM, and is combined with credits obtained at USM to fulfil the unit requirements for his/her programme of study. The transferred examination results or grades obtained in courses taken at other IPTAs will be taken into consideration in the Cumulative Grade Point Average (CGPA) calculation.

1. Category of Students Who Can Be Considered for Credit Transfer

USM full-time Bachelor Degree level students who would like to attend specific Bachelor Degree level courses at other IPTAs.

USM full-time diploma level students who would like to attend specific diploma level courses at other IPTAs.

2. Specific Conditions

a. Basic and Core Courses

Credit transfer can only be considered for credits obtained from other courses in other IPTAs that are equivalent (at least 80% of the content is the same) with the courses offered by the programme.

Courses that can be transferred are only courses that have the same number of units or more. For equivalent courses but with less number of units, credit transfers can be approved by combining a few courses. Credits transferred are the same as the course units offered in USM. Average grade of the combined courses will be taken into account in the CGPA calculation.

b. Elective or Option Courses

Students may take any appropriate courses in other IPTAs subject to permission from the School as well as the approval of the IPTAs.

The transferred credits are credits obtained from courses at other IPTAs. No course equivalence condition is required.

c. Minor Courses

For credit transfer of minor courses, the School should adhere to either conditions (i) or (ii), and take into account the programme requirement.

3. General Conditions

- a. The total maximum units transferred should not exceed one third of the total number of units for the programme.
- b. Credit transfer from other IPTAs can be considered only once for each IPTA.
- c. The examination results obtained by a student who has taken courses at other IPTAs will be taken into account for graduation purposes. Grades obtained for each course will be combined with the grades obtained at USM for CGPA calculation.
- d. Students who have applied and are approved for credit transfer are not allowed to cancel the approval after the examination result is obtained.
- e. Students are required to register for courses at other IPTAs with not less than the total minimum units as well as not exceeding the maximum units as stipulated in their programme of study. However, for specific cases (e.g. students on an extended semester and only require a few units for graduation), the Dean may allow such students to register less than the minimum units and the semester will not be considered for the residential requirement. In this case, the CGPA calculation will be similar to that requirement of the KSCP.
- f. USM students attending courses at other IPTAs who have failed in any courses will be allowed to re-sit the examinations of the courses if there is such a provision in that IPTA.
- g. If the method of calculation of examination marks in the other IPTAs is not the same as in USM, grade conversions will be carried out according to the existing scales.
- h. USM students who have registered for courses at other IPTAs but have decided to return to study in USM must adhere to the existing course registration conditions of USM.

2.5.1 Application Procedure for Attending Courses/Credit Transfer

USM students who would like to apply to attend courses/credit transfer at other IPTAs should apply using the Credit Transfer Application Form.

The application form should be submitted for the Dean's approval for the programme of study at least three months before the application is submitted to other IPTAs for consideration.

2.6 Academic Integrity

“Integrity without knowledge is weak and useless. Knowledge without integrity is dangerous and dreadful.” - Samuel Johnson

Academic honesty in academic is important because it is the main pillar in ensuring that manners and ethics with regards to higher education integrity are preserved.

Universiti Sains Malaysia encourages its students to respect and ensure that any matter relating to academic integrity are well-preserved. Universiti Sains Malaysia always encourages its students to ensure that manners, ethics and integrity would be essential in academics while focusing on their studies in Universiti Sains Malaysia.

The following are practices or acts that are considered as conducts of lack of integrity in academics:

1. Cheating

Cheating in the context of academic include copying during examination, usage of information or without authorization or in dishonest manner. There are numerous ways and methods of cheating which include among others:

- a. Copying answers from others during test or exam.
- b. Any suspicious action that can be described as cheating or an attempt to cheat in an exam.
- c. Using unauthorized materials or devices without authorization such as hand-written notes, mobile phones, smart phones or any smart electronic device during test or exam.

- d. Asking or allowing another student to take test or exam on behalf and vice-versa.
 - e. Sharing answers in assignments or projects.
 - f. Purposely tampering the marks/grade given in any course work, and then re-submit it for remarking/regrading.
 - g. Give command, to force, persuade, deceive or threaten others to conduct research, writing, programming or any task for such student personal gain.
 - h. Submitting any identical or similar work in more than one course without consulting or prior permission from the lecturers concerned.
2. Plagiarism

The reputation of an academic institution depends on the ability to achieve and sustain academic excellence through the exercise of academic integrity. Academic integrity is based on honesty, trust, fairness, respect, and responsibility, which form the basis of academic work.

One aspect of the loss of academic integrity is due to plagiarism, which is the act of presenting published and unpublished ideas, writings, works or inventions of others in written or other medium, as one's own original intellectual endeavours without any clear acknowledgement of or reference to the author of the source.

POLICY ON PLAGIARISM OF UNIVERSITI SAINS MALAYSIA

University Sains Malaysia Policy on Plagiarism describes the University's strong commitment to uphold academic integrity in relation to plagiarism. It will come into effect when there is an infringement of academic conduct relating to plagiarism.

This policy acts as a guideline to educate and prevent plagiarism and can be used as the guideline if the University's staff and students violate any rules and regulations of the University.

The policy applies to all students, former students, staff and former staff which include fellows, post-doctorates, visiting scholars, as well as academic, non-academic, research, contract and temporary staff who study, serve or having served, or have graduated from the University.

Plagiarism is defined as the act of presenting, quoting, copying, paraphrasing or passing off of ideas, images, processes, works, data, own words or those of other people or sources without proper acknowledgement, reference or quotation of the original source(s). The acts of plagiarism include, but are not limited to, the following:

- a. Quoting verbatim (word-for-word replication of) works of other people.
- b. Paraphrasing another person's work by changing some of the words, or the order of the words, without due acknowledgement of the source(s).
- c. Submitting another person's work in whole or part as one's own.
- d. Auto-plagiarising or self-plagiarising (one's own work or previous work) that has already been submitted for assessment or for any other academic award and pass it as a new creation without citing the original content.
- e. Insufficient or misleading referencing of the source(s) that would enable the reader to check whether any particular work has indeed been cited accurately and/or fairly and thus to identify the original writer's particular contribution in the work submitted.

The University will take action of every report and offences relating to plagiarism and if the student is found guilty, the student can be charged by the university according to the Students Disciplinary Rules.

3. Fabrication

Fabrication refers to a process of invention, adaptation or copying with the intention of cheating. This is an act of deceiving other people. Fabrication is somewhat related to matters which have been 'created' or altered.

Invention or task outcome or academic work without acknowledgement, alteration, falsification or misleading use of data, information or citation in any academic work constitutes fabrication. Fabricated information neither represent the student's own effort nor the truth concerning a particular investigation or study, and thus violating the principle of truth in knowledge. Some examples are:

- a. Creating or exchanging data or results, or using someone else's results, in an experiment, assignment or research.

- b. Citing sources that are not actually used or referred to.
- c. Listing with intent, incorrect or fictitious references.
- d. Forging signatures of authorization in any academic record or other university documents.
- e. Developing a set of false data.

4. Collusion

Collusion refers to the cooperation in committing or to commit or to do work with negative intentions. Some examples of collusion include:

- a. Paying, bribing or allowing someone else to do an assignment, test/exam, project or research for you.
- b. Doing or assisting others in an assignment, test/exam, project or research for something in return.
- c. Permitting your work to be submitted as the work of others.
- d. Providing material, information or sources to others knowing that such aids could be used in any dishonest act.

5. Other violations relating to academic integrity

- a. Late to lecture, tutorial, class or other forms of teaching modes relating to their courses.
- b. Sending or submitting late any assignment relating to their courses.
- c. Hire someone else to do the assignment or thesis.
- d. Carrying out business by providing service to write assignment or thesis of the students.
- e. Any other violations that USM deemed as violating academic integrity.

2.6.1 Consequences of Violating Academic Integrity

Students are responsible in protecting and upholding academic integrity in USM.

If in any specific event a student or students would encounter any incident that denotes academic dishonesty, the student(s) need to submit a report to the relevant lecturer. The lecturer is then responsible to investigate and substantiate the violation and report the matter to the Dean of the School.

1. If any violation of academic integrity is considered as not of a serious nature, the Dean of the School may take administrative action on the students.
2. However, if the violation is deemed serious by the School, this matter shall be brought to the attention of the Secretariat of University Student Disciplinary Committee (Academic Cases) at Legal Office, Level 2, Building E42, Chancellory II, Universiti Sains Malaysia for further disciplinary action as specified in the disciplinary procedures
3. If a student is caught in copying or cheating during examination, the Investigation Committee of **Copying/Cheating in Examination** will pursue the matter according to the University's procedures. If the investigation found that there is a case, the student(s) will be brought to the Student's Disciplinary Committee of the University. In this matter, the rule on conduct during examination shall be applied.
4. Rule 48 of Universiti Sains Malaysia (Discipline of Students) provides that a student who commits a disciplinary offence and is found guilty of the offence shall be liable to any one or any appropriate combination of two or more of the following punishments as follows:
 - a. a warning;
 - b. a fine not exceeding Ringgit Malaysia Two Hundred (RM200.00);
 - c. exclusion from any specific part or parts of the University for a specified period;
 - d. suspension from being a student of the University for a specified period;
 - e. expulsion from the University.

2.7 USM Mentor Programme

The Mentor Programme acts as a support-aid that involves staff undergoing special training as consultants and guides to the USM community who would like to share their feelings and any psychosocial issues that could affect their social activities. This programme helps individuals to manage psychosocial issues in a more effective manner, which will eventually improve their well-being in order to achieve a better quality of life.

Objectives

1. To serve as a co-operation and mutual assistance mechanism for dealing with stress, psychosocial problems and many more in order to ensure the well-being of the USM community.
2. To inculcate the spirit of unity and the concept of helping one another by appointing a well-trained mentor as a social agent who promotes a caring society for USM.
3. To produce more volunteers to assist those who need help.
4. To prevent damage in any psychosocial aspect before they reach a critical stage.

2.8 Student Exchange Programme

2.8.1 Study Abroad Scheme

The student exchange programme is an opportunity for USM students to study for one or two semesters abroad at any USM partner institutions. Ideally, students are encouraged to participate in the exchange programme within their third to fifth semester (3 year degree programme) and within the third to seventh semester (4 year degree programme).

USM students who wish to follow the SBLN programme must discuss their academic plans with the Dean or Deputy Dean of their respective Schools and also with the International Mobility & Collaboration Centre (IMCC) (to ensure that credits obtained from the external higher education institution can be transferred as part of the credit accumulation for graduation).

Any student who follows the SBLN programme and violates any disciplinary act in the external higher education institution, can

be penalised in accordance with the University (Discipline of Students) Rules if the matter is referred to USM.

For further information, please visit www.imcc.usm.my or contact the International Mobility and Collaboration Centre (IMCC) at +604 – 653 2777/2774.

2.8.2 Student Exchange Programme in Local Higher Education Institutions (RPPIPT)

This is a programme that allows students of Higher Learning Institutions to do an exchange programme for a semester among the higher institutions themselves. Students can choose any relevant courses and apply for credit transfers.

USM students who want to participate in RPPIPT have to discuss their academic plans with the Dean or Deputy Dean of their respective Schools and the Division of Academic and International (to ensure that credits obtained from the higher education institution in Malaysia can be transferred as part of the credit accumulation for graduation).

Any student who participates in RPPIPT and violates any of the institution's disciplinary rules can be penalised according to the University (Discipline of Students) Rules if the matter is referred to USM.

For further information, please contact the Academic & International Division at +604 – 653 2430.

2.9 Ownership of Students' Dissertation/Research Project/Thesis and University's Intellectual Property

The copyright of a dissertation/research project/thesis belongs to the student. However, as a condition for the conferment of a degree, the student gives this right unconditionally, directly but not exclusively, and free of royalties to the university to use the contents of the work/thesis for teaching, research and promotion purposes. In addition, the student gives non-exclusive rights to the University to keep, use, reproduce, display and distribute copies of the original thesis with the rights to publish for future research and the archives.

3.0 UNIVERSITY COURSE REQUIREMENTS

3.1 Summary of University Course Requirements

Students are required to take 15-22 credits for the following University courses/options for University needs:

UNIVERSITY COURSE REQUIREMENTS		CREDIT TOTAL	
		Local Students	International Students
General Studies (MPU)			
U1	<p><u>Local Students</u></p> <ul style="list-style-type: none"> ▪ HFF225 (Philosophy and Current Issues) (2 credits) ▪ HFE224 (Appreciation of Ethics and Civilisations) (2 credits) ▪ LKM400 (Bahasa Malaysia IV) (2 credits) <p><u>International Students of Science and Technology</u></p> <ul style="list-style-type: none"> ▪ HFF225 (Philosophy and Current Issues) (2 credits) ▪ LKM100 (Bahasa Malaysia I) (2 credits) 	6	
	<p><u>International Students of Arts</u> <i>(program with Malay Language as the medium of instruction)</i></p> <ul style="list-style-type: none"> ▪ HFF225 (Philosophy and Current Issues) (2 credits) ▪ LKM100 (Bahasa Malaysia I) (Z) ▪ LKM200 (Bahasa Malaysia 2) (U) (2 credits) 		4
U2 Or U3	<p><u>Local Students</u></p> <ul style="list-style-type: none"> ▪ WUS101 (Core Entrepreneurship) (2 credits) ▪ English Language Courses (4 credits) <p><u>International Students</u></p> <ul style="list-style-type: none"> ▪ SEA205E (Malaysian Studies) (4 credits) ▪ English Language Courses (4 credits) 	6	8
U4	Co-curricular courses*	2	2
Options	Skill courses/Foreign Language Courses/ Other courses offered by other schools. Students have to choose any of the following: <ul style="list-style-type: none"> ▪ Co-curricular courses ▪ Skill courses/Foreign Language Courses/ Other courses offered by other schools 	1-8	1-8
CREDIT TOTAL		15-22	15-22

* Students from the School of Educational Studies are required to choose a uniform body co-curricular package.

* Students from the School of Dental Sciences are required to take co-curricular courses that consists of three (3) credits. Further information can be obtained from the Academic Office, School of Dental Sciences.

3.2 General Studies Components (MPU) (14 credits)

General studies is one of the strategies and initiatives planned for the purpose of Shift 1, which is Holistic, Entrepreneurial and Balanced Graduates. Malaysia Education Blueprint 2015-2025 (Higher Education) or PPPM (PT) outlines 10 shifts to achieve the aspirations of the nation's higher education system and student aspirations.

General studies are divided into four groups as follows:

1. U1: appreciation of philosophy, values and history;
2. U2: the mastery of soft skills;
3. U3: expansion of the knowledge of Malaysia and its history; and
4. U4: practical community management skills such as community service and co-curriculum.

A. U1 Group

Local Students

All Malaysian students are required to take and pass the following courses. In order to graduate, the minimum passing grade required is Grade C.

(i) **HFF225 (Philosophy and Current Issues) (2 credits)**

The course synopsis is as follows:

This course covers the relation between philosophy and the National Education Philosophy and Rukun Negara. Philosophy is used as a tool to refine the culture of thought in life through the art and methods of thinking as well as through our understanding of the concept of the human person. Key topics in philosophy, namely epistemology, metaphysics, and ethics, are discussed in the context of current issues. Emphasis is given to philosophy as the basis for inter-cultural dialogue and fostering common values. At the end of this course, students will be able to see the disciplines of knowledge as a comprehensive and integrated body of knowledge.

(ii) **HFE224 (Appreciation of Ethics and Civilisations) (2 credits)**

The course synopsis is as follows:

This course discusses ethical concepts from different civilizational perspectives. It aims to identify the systems,

stages of development, and rational cultures. Contemporary economic, political, social, cultural and environmental issues will be discussed from the ethical and civilizational perspectives. At the end of this course, students will be able to appreciate the values of ethics and civilisation.

(iii) LKM400/2 (Bahasa Malaysia IV)

In order to graduate, the minimum passing grade required is Grade C. Entry requirements for Bahasa Malaysia are as follows:

No	Qualification	Grade	Entry Level	Type	Credit	Status
1	(a) SPM/MCE/SC (or equivalent qualification) (b) STPM/HSC (or equivalent qualification)	1 - 6 P/S	LKM400	U	2	Graduation Requirement

Note:

To obtain credits for Bahasa Malaysia courses, a minimum of grade C is required. Students may seek advice from the School of Languages, Literacies and Translation if they have a different Bahasa Malaysia qualification from the above.

International Students

All international students are required to take and pass the following courses. In order to graduate, the minimum passing grade required is Grade C. The following is the synopsis of the course:

(i) HFF225 (Philosophy and Current Issues) (2 credits)

The course synopsis is as follows:

The course discusses the fundamentals of philosophy. The main topics in this course are epistemology, metaphysics, ethics, methods of thinking, and the concept of the human person, and these are discussed in the context of current issues. Emphasis is given to philosophy as a basis for inter-cultural dialogue, to foster common values, and its relation to the National Education Philosophy and Rukun Negara. At the end of this course, students will be able to understand the importance of philosophy in culture and life.

(ii) Malay Language Course (2 credits)

All international students are required to take and pass the Malay Language course. In order to graduate, the minimum passing grade required is Grade C. Malay Language course requirements by academic program are as follows:

- (i) International students pursuing Bachelor's Degree in Arts (*program with Malay Language as the medium of instruction*) are required to take the following courses:

Code	Type	Credit
LKM100	Z	2
LKM200	U	2

- (ii) International students pursuing Bachelor's Degree in Arts (*program with English Language as the medium of instruction*) are required to take the following course:

Code	Type	Credit
LKM100	U	2

- (iii) International students pursuing Bachelor's Degrees in Science and Technology are required to take the following course:

Code	Type	Credit
LKM100	U	2

B. U2 or U3 Group

Local Students

WUS101 (Core Entrepreneurship) (2 credits)

All students are required to take and pass the WUS101/2 (Core Entrepreneurship) course. In order to graduate, the minimum passing grade required is Grade C. The following is the synopsis of the course:

This course provides basic exposure to students on entrepreneurship and business fields, with emphasis on the implementation of the learning aspects while experiencing the process of executing business projects in campus. The main learning outcome is the assimilation of culture and entrepreneurship work ethics in their everyday life. This initiative is made to open the minds and arouse the spirit of

entrepreneurship among target groups that possess the potential to become successful entrepreneurs.

For more information, please refer to the Centre for Co-Curricular Programme website.

International Students

SEA205E (Malaysian Studies) (4 credits)

All international students are required to take and pass the SEA205E/4 (Malaysian Studies) course. In order to graduate, the minimum passing grade required is Grade C. The following is the synopsis of the course:

This course discusses Malaysia from the perspectives of history, politics, social, cultural and economics. It looks at the relations between the country's history and its politics, the formation of a plural society that has since become its important characteristics, as well as issues related to development in Malaysia. Students will also be exposed to contemporary issues in Malaysia such as the marginalized groups, popular culture, issues related to health and wellbeing, as well as looking at Malaysia from the global context.

Local and International Students

All Bachelor's degree students must take four (4) units from the English Language courses to fulfil the University requirement for graduation.

(a) Entry Requirements for English Language Courses (for students with MUET)

The following table shows the entry requirements for the English language courses offered by the School of Languages, Literacies and Translation.

Number	MUET qualification/ Pre-requisite course	Grade	English Language Course	Course Type
1	MUET or;	Bands 2/3	LMT100 (2 credits)	Pre-requisite/ Type Z
	Discretion of the Dean of PPBLT			
2	MUET or;	Band 4	LSP300 (2 credits)	Compulsory/ Type U
	LMT100 or;	A - C		
	Discretion of the Dean of PPBLT			
3	MUET or;	Band 5	LSP	Compulsory/

	LSP300 or; Discretion of the Dean of PPBLT	A - C	401/402/403/404 (2 credits)	Type U
4	MUET or;	Band 6	LHP 451/452/453/454/455/ 456/457/458/459 * all LHP courses are 2 credits except for LHP457 which is 4 credits	Compulsory/Option / Type U
	LSP401/402/403/404 or; Discretion of the Dean of PPBLT	A - C		

(b) Entry Requirements for English Language Courses (for students with TOEFL or IELTS)

The following table shows the entry requirements for the English language courses offered by the School of Languages, Literacies and Translation.

TOEFL (Paper Based Test)	TOEFL (Computer Based Test)	TOEFL (Internet Based Test)	IELTS	English Language Course	Course Type
310 - 413	0 - 103	0 - 34	1 – 4.5	LMT 100 (2 credits)	Pre-requisite / Type Z
417 - 497	107 - 170	35 - 60	5.0 – 5.5	LSP 300 (2 credits)	Compulsory/ Type U
500 - 650	173 - 277	61 - 114	6.0 – 8.0	LSP 401/402/403/404 (2 credits)	Compulsory/ Type U
653 - 677	280 - 300	115 - 120	8.5 – 9.0	LHP Series * all LHP courses are 2 credits except for LHP457 which is 4 credits	Compulsory/ Option/ Type U

Note:

- Students are required to refer to the list of English language courses required by their respective schools.
- Students may seek advice from the School of Languages, Literacies and Translation if they have a different English language qualification from the above.
- In order to obtain units in English Language courses, students have to pass with a minimum grade 'C'.
- Students with a Score of 260 – 300 (Band 6) in MUET must accumulate the 4 credits of English from the courses in the advanced level (LHP451/452/453/454/455/456/457/458/459). They can also take foreign language courses to replace their English language credits but they must first obtain written consent

from the Dean of the School of Languages, Literacies and Translation. (Please use the form that can be obtained from the School of Languages, Literacies and Translation).

- Students with a score less than 180 (Band 4) in MUET CAN re-sit MUET to improve their score to Band 4 OR take LMT100 course and pass with a minimum grade C before they can register for the LSP300 course.

(c) English Language Course

English courses offered as university courses are as follows:

No	Code/Unit	Course Title	School (If Applicable)
1	LMT100/2	Preparatory English	Students from all schools
2	LSP300/2	Academic English	Students from all schools
3	LSP401/2	General English	School of Language, Literacies and Translation School of Educational Studies (Literature) School of the Arts School of Humanities School of Social Sciences
4	LSP402/2	Scientific and Medical English	School of Biological Sciences School of Physics School of Chemical Science School of Mathematical Sciences School of Industrial Technology School of Educational Studies (Science) School of Medical Sciences School of Health Science and Dentistry School of Pharmaceutical Sciences
5	LSP403/2	Business and Communication English	School of Management School of Communication
6	LSP404/2	Technical and Engineering English	School of Computer Sciences School of Housing, Building and Planning School of Engineering

C. U4 Group

All students are required to register for a co-curricular course in order to complete the minimum requirement of two (2) credit hours in the MPU structure. Students who choose to take packaged co-curricular courses are required to complete all levels of the package. Students can choose the courses offered by the Core group as follows:

(i) **Core of Volunteerism (6 - 10 credits)**

All courses offered under this core are the uniformed courses offered in the following packages:

PALAPES Army	PALAPES Navy	PALAPES Air Force	SUKSIS (Students' Police Volunteers)
WTD103/3	WTL103/3	WTU103/3	WPD101/2
WTD203/3	WTL203/3	WTU203/3	WPD201/2
WTD304/4	WTL304/4	WTU304/4	WPD301/2

SISPA (Siswa Siswi Pertahanan Awam Malaysia)	Kelanasiswa (Rovers)	St John Ambulance	Red Crescent Emergency Aid Team
WPA103/2	WLK102/2	WJA102/2	WBM102/2
WPA203/2	WLK202/2	WJA202/2	WBM202/2
WPA303/2	WLK302/2	WJA302/2	WBM302/2

For more information, please refer to the Centre for Co-Curricular Programme website.

(ii) **Core of Sports (1 - 3 credits)**

The courses offered are as follows:

Packaged Courses (3 Credits, 3 Semesters) (Students are required to complete all levels)	
Karate	Taekwondo
WSC108/1	WSC115/1
WSC208/1	WSC215/1
WSC308/1	WSC315/1
Non Packaged Courses (1 Credit)	
WSC105/1 –Volley Ball	WSC 125/1- Futsal
WSC106/1 - Golf	WSC 126/1 - Netball
WSC110/1 - Archery	WSC127/1 - Event Management 1
WSC111/1 - Table Tennis	WSC227/1 - Event Management 2
WSC112/1 - Swimming	WSC128/1 - Petanque
WSC113/1 - Aerobics	WSC130/1 - Orienteering

WSC114/1 - Squash	WSC131/1 - Woodball
WSC116/1 - Tennis	WSC124/1 - Sepak Takraw
WSC119/1 - Badminton	

For more information, please refer to the Centre for Co-Curricular Programme website.

(iii) Core of Culture (1 – 6 credits)

The courses offered are as follows:

Packaged Courses (6 Credits, 3 Academic Sessions) (Students are required to complete all levels)	
Jazz Band	Seni Silat Cekak Malaysia
WCC108/2	WCC123/2
WCC208/2	WCC223/2
WCC308/2	WCC323/2
Non Packaged Courses (1 Credit)	
WCC105/1 - Gamelan	WCC117/1 - Modern Theatre
WCC107/1 - Guitar	WCC118/1 - Malay Shadow Play
WCC109/1 - Choir	WCC119/1 - Qigong Exercises
WCC115/1 - Modern Dance	WCC124/1 - Musical Kompang
WCC116/1 - Traditional Dance	WCC129/1 - Latin Dance

For more information, please refer to the Centre for Co-Curricular Programme website.

(iv) Core of Innovation and Initiative (1 - 2 credits)

The courses offered are as follows:

Non Packaged Courses (1 Credit)	
WCC103/1 - Painting	WCC128/1 - Embroidery and Beads Sequin Art
WCC110/1 - Handcrafting	WCC130/1 - Digital SLR Photography Art
WCC120/1 - Canting Batik	WCC 131/1 - Editing Digital Photography Art
WCC121/1 - Calligraphic Art	WCC132/1 - The Art of Ceramic
WCC122/1 - Cullinary Arts	WCC133/1 - Decoupage Arts
WCC125/1 - Traditional of Kite Art	
Non Packaged Courses (2 Credits)	

For more information, please refer to the Centre for Co-Curricular Programme website.

(v) Core of Community Service (4 credits)

The courses offered are as follows:

Packaged Courses (4 Credits) (Students are required to complete all levels)	
WKM102/2 - Community Service 1	WKM202/2 - Community Service 2
Non Packaged Courses (2 Credits)	
WSK102/2 - Volunteerism Science	

For more information, please refer to the Centre for Co-Curricular Programme website.

(vi) Core of Public Speaking (2 credits)

The courses offered are as follows:

Non Packaged Courses (2 Credits)	
WEC102/2 - Public Speaking in Malay Language	
WEC103E/2 - Public Speaking in English Language	

For more information, please refer to the Centre for Co-Curricular Programme website.

(vii) Core of Sustainability (2 credits)

The courses offered are as follows:

Non Packaged Courses (2 Credits)	
WSU101/2 - Sustainability of Issues, Challenges and Prospects	

For more information, please refer to the Centre for Co-Curricular Programme website.

3.3 Options (1 – 8 credits)

A. Co-curricular course

Students who have enrolled in co-curricular courses in excess of two (2) credits under the U4 General Subjects requirement are not required to attend the co-curriculum course under the Option courses. Students only need to register for skill courses or Foreign Language courses subject to the graduation requirements of their respective program of study.

The details of the list of co-curricular courses offered are in the U4 General Subjects section as stated above.

B. Skill / Foreign Language Courses / Courses offered by other schools

Students can choose the following courses as an option:

(i) **WSU 101 (Sustainability: Issues, Challenges & Prospects) (2 credits)**

The following is the synopsis of the course:

This course introduces and exposes the concept of sustainable development to students. The course aims to ensure future generation capabilities to meet their needs in the future are not affected, especially in the era of challenging globalization and the rapid development of information technology at present. Sustainable development models and case studies are also discussed.

For more information, please refer to the Centre for Co-Curricular Programme website.

(ii) **HTV201 (Thinking Techniques) (2 credits)**

The following is the synopsis of the course:

This course introduces students to various creative thinking such as styles and thinking tools that can broaden understanding of creativity and improve problem solving skills. Students are trained to select and apply the best techniques to solve specific problems. So this course helps students to learn to think effectively in order to make the most effective decisions in both their studies and daily life.

(iii) SHE101 (Ethnic Relations) (2 credits)

The following is the synopsis of the course:

This course is an introduction to ethnic relations in Malaysia. This course is designed with 3 main objectives: (1) to introduce students to the basic concepts and the practices of social accord in Malaysia, (2) to reinforce basic understanding of challenges and problems in a multi-ethnic society, and (3) to provide an understanding and awareness in managing the complexity of ethnic relations in Malaysia. At the end of this course, it is hoped that students will be able to identify and apply the skills to issues associated with ethnic relations in Malaysia.

(iv) Other options / skill courses as recommended or required by the respective schools (if any)

(v) English language course

The following courses may be taken as a university course to fulfil the compulsory English language requirements (for students with Band 6 in MUET) or as a skill / option course:

No	Code/Kredit	Course Title
1.	LHP451/2	Effective Reading
2.	LHP452/2	Business Writing
3.	LHP453/2	Creative Writing
4.	LHP454/2	Academic Writing
5.	LHP455/2	English Pronunciation Skills
6.	LHP456/2	Spoken English
7.	LHP457/4	Public Speaking and Speech Writing
8.	LHP458/2	English for Translation (Offered during Semester II only)
9.	LHP459/2	English for Interpretation (Offered during Semester I only)

(vi) Foreign Language Courses

The foreign language courses offered by the School of Languages, Literacies and Translation can be taken by students as option or compulsory courses to fulfil the number of units required for graduation. Students are not allowed to register for more than one foreign language course per semester. They must complete at least two levels of a foreign language course before

they are allowed to register for another foreign language course. However, students are not required to complete all four levels of one particular foreign language course. The foreign language courses offered are as follows:

Arabic	Chinese	Japanese	German	Spanish
LAA100/2	LAC100/2	LAJ100/2	LAG100/2	LAE100/2
LAA200/2	LAC200/2	LAJ200/2	LAG200/2	LAE200/2
LAA300/2	LAC300/2	LAJ300/2	LAG300/2	LAE300/2
LAA400/2	LAC400/2	LAJ400/2	LAG400/2	LAE400/2

French	Thai	Tamil	Korean
LAP100/2	LAS100/2	LAT100/2	LAK100/2
LAP200/2	LAS200/2	LAT200/2	LAK200/2
LAP300/2	LAS300/2	LAT300/2	LAK300/2
LAP400/2	LAS400/2		

4.0 SCHOOL REQUIREMENTS

Experiential Learning

Experiential learning in external organizations that are involved in industrial pharmacy and pharmacy practice setting is already incorporated in the curriculum in the course FAR281/2 and FAR460/2. However, all students are encouraged to carry out practical training more than the required duration during the semester breaks. The training is aimed to provide the students with a deeper understanding of the practical aspects of pharmacy.

5.0 FACILITIES

The Teaching and Learning Laboratory in the School is well equipped with necessities like computer and internet access, video recorders, overhead projectors and television. In addition to these facilities, the laboratory also provides books for references. Students who would like to borrow books from the School's collections will have to contact the Dean's office. Besides these, the University's Main Library has an extensive collection of media materials, reference textbooks and journals in all branches of pharmacy.

The School's current facilities include modern lecture halls, computer laboratories and well-equipped teaching and research laboratories. Students also benefit from real world experiences in a variety of clinical settings offered by the Hospital Pulau Pinang and Advanced Medical and Dental Institute, where the practical component of clinical pharmacy is carried out.

6.0 GENERAL INFORMATION

The Student-Lecturer Committee

The Student-Lecturer Committee is established in order to enhance the relationship between the students and lecturers. The chairperson for this committee is the Deputy Dean (Academic). The committee meets from time to time and it functions as an open forum to discuss issues on academic, welfare and non-academic activities. The Pharmacy students will elect student representatives at the beginning of every academic session.

USM Pharmacy Alumni

USM Pharmacy Alumni Society, known as PharmSci USM Alumni (PUSMA) was formed at the Pharmacy School to provide the space and platform for USM pharmacy graduates to be actively involved and to directly contribute towards academic and non-academic activities in the School. By being involved in the Alumni Society, the USM pharmacy graduates will always be associated with the

School and also the University after leaving the campus. PUSMA always appreciates bright and innovative ideas from the members to ensure that the School of Pharmaceutical Sciences, USM excels not only at the national level but also internationally. For those who are interested to join as a member or who needs further enquiries regarding PUSMA, please contact:

PharmSci USM Alumni (PUSMA)
c/o: School of Pharmaceutical Sciences
Universiti Sains Malaysia
11800 USM, Pulau Pinang.
Website: pusma.usm.my

Dean's List

Awarded to students who obtain outstanding academic results (GPA \geq 3.67) in each semester provided that students fulfil co-curriculum requirement.

Pharmacy School Student's Association

USM Pharmacy Students' Association (PSFUSM) is the official association for the students of the School of Pharmaceutical Sciences, USM. PSFUSM acts as the channel for the students to exhibit their creativity and also to interact with one another, with Malaysian Pharmacy Association and also with the society in general. PSFUSM conducts projects throughout the academic term. These projects include community service, promotion of pharmacy profession and get-togethers with other pharmacy students form institutes of higher learning in Malaysia. One of the objectives of the projects is for the pharmacy students to experience and transfer the knowledge gained from their study years into their profession which the students will face in the future.

Postgraduate Studies

Formed in 1972, The School of Pharmaceutical Sciences, USM was the first educational centre that provides pharmaceutical education in Malaysia. Since its formation, it has always been committed to provide excellence in both teaching and research. Besides the undergraduate course, the School also offers Masters degree in Clinical Pharmacy by course work (M.Pharm.), Ph.D in Clinical Pharmacy, Masters in Science degree (M.Sc.) and Ph.D by research.

The higher education programme has attracted many local as well as foreign postgraduate students, including those from Indonesia, Thailand, Pakistan, Libya, Sudan, Bangladesh, Ghana, Jordan, Yemen, St. Vincent, India and China. Research activities have been greatly enhanced. The rapid growth in the research was due to the collaboration with local research centres and with local and foreign universities. For further enquiries regarding the postgraduate programme, please refer to the School of Pharmaceutical Sciences website at:

<http://www.pha.usm.my>

Enquires

Please direct specific enquiries regarding courses and academic activities related to Pharmaceutical Sciences to:

Dean
School of Pharmaceutical Sciences
Universiti Sains Malaysia
11800 USM
Pulau Pinang

Phone Number: 04-653 2211

Fax Number: 04-657 0017

E-mail: dean_pha@usm.my

For further information on the School of Pharmaceutical Sciences, please surf the website: <http://www.pha.usm.my/pharmacy>.

7.0 LIST AND DESCRIPTION OF COURSES

7.1 Core Courses

FAR113/3: ORGANIC CHEMISTRY

This course aims in explaining on stereochemistry, geometrical isomerism and designation conformation of *cis*, *trans*, *E* and *Z* as well as optical isomerism and designation of D, L, erythro, threo, *R* and *S* configurations for acyclic and cyclic compounds. The content of the course is including the type of reaction, mechanism, product and stereochemistry (if applicable) of nucleophilic substitution reactions S_N2 and S_N1, elimination reactions E2 and E1, reaction of benzene and its derivatives, heterocycle aromatic and non-aromatic compounds and reaction regarding substitution of electrophilic and nucleophilic. Other topics are explanation of radical, the reaction and polymerization that involve radical and drug nomenclature (IUPAC).

FAR114/3: PHARMACEUTICAL CHEMISTRY

Reaction mechanisms of nucleophilic addition at carbonyl and α, β-unsaturated carbonyl groups; addition to conjugated diene and carbanion reactions; electrophilic addition reactions to multiple bonds; nucleophilic addition to double bonds and Diels-Alder reaction. Synthesis methods involved esterification, acylation, hydrolysis, Hinsberg test and Hofmann rearrangement reactions in the preparation of lactones, lactams, sulphonamides, amides and derivatives. The theories and applications of spectroscopic methods of UV, IR, NMR and MS, particularly in structural elucidation of simple organic compounds / drugs. Also, understanding the chemistry of acid and base, and the chemical stability of drug.

FAR115/2: PRINCIPLES OF MEDICINAL CHEMISTRY

This course covers principles in medicinal chemistry that are used in modern drug design, discovery and development. An overview of how a drug is discovered and developed and key concepts such as drug targets, drug-target interactions in drug action, structure-activity relationships, influence of physicochemical parameters to drug pharmacokinetics, lead optimization and drug design techniques such as QSAR and CADD is presented.

FAR116/3: BIOCHEMISTRY

This course covers basic concepts of the biochemistry of biologically important molecules such as carbohydrates, lipids, amino acids, proteins, enzyme, nucleic acids and vitamins. A review of the biochemistry of enzymes,

their inhibitors and clinical applications is also included. Major metabolic pathways involving these biomolecules are also given in the course.

FAR122/4: DOSAGE FORM I

This course covers the understanding and interpretation of prescriptions, the important information that has to be present in a prescription and in a label, latin abbreviations used in a prescriptions, the principles and characteristics of non-sterile pharmaceutical dosage form, pharmaceutical calculations, the preparation technique of non-sterile pharmaceutical dosage forms, product packaging and labeling and other important components in a preparation such as buffers and preservatives. The students will also learn about the many reference books which are important in pharmaceutical formulation.

FAR123/3: MICROBIOLOGY FOR PHARMACY

This course provides an introduction to microbiology for Pharmacy students. It covers topics such as bacterial structures which includes the size and morphology of bacteria, external structures involved with the movement of cells and attachment and even the formation of endospores. This course also introduces basic microbiological techniques such as microscopy techniques, staining, isolation, culture, maintenance and storage of pure cultures and even enumeration of bacteria. Students will also be introduced to topics such as bacterial growth, microbial nutrition and metabolism, bacterial genetics and classification of microorganisms. The principles of infection and host-pathogen relationship will also be covered. Finally, students will also be taught on fungi, viruses and parasites on the aspects of structure, classification and clinical significance.

FAR132/3: BASIC PHYSIOLOGY AND PHARMACOLOGY

This course reviews microscopic structure of various tissues so as to develop an understanding of the relationship between structure and function of the human body. It also introduces general concepts and principles that are basic to the functions of all body systems and reviews important aspects of cell physiology and basic principles of pharmacology including drug nomenclature, pharmacokinetic and pharmacodynamic aspects of drug activity.

FAR153/2: COMMUNICATION SKILL IN PHARMACY PRACTICE

This is a basic course provides an understanding of the theories, concepts, and techniques of an effective interpersonal communication among patients and

pharmacist, during presenting ideas and answering questions related to drugs, by using verbal and non-verbal communication. Besides, this course will expose the students to the concept of leadership as well as emotional and stress management in communication.

FAR162/2: PRINCIPLES OF IMMUNOLOGY AND ONCOLOGY

This course introduces students to the basic principles of human immune system comprising of components in immune system and their functions, basic concept and relationship between innate immunity and adaptive immunity, hypersensitivity reactions, pathophysiology of immune system disorders (autoimmunity, immunodeficiency and organ transplantation) as well as immunisation concept. Pharmacological aspect of drugs used to modulate the immune response in the treatment of immune system disorders will be emphasized. Besides that, the students will also be acquainted with introduction to oncology as well as cancer biology including cell cycle, apoptosis and metastasis. Pharmacological aspects of various anti-cancer drugs also will be discussed in this course.

FAR191/4: RESEARCH METHODOLOGY AND STATISTICS IN PHARMACY

This course introduces students to study designs and the basic concepts of statistics and to show them how these concepts can be used in making inferences from experimental data and from sample surveys. The medical biostatistics sections particularly the vital statistics and epidemiology are also incorporated in the syllabus. In addition, the course would emphasize understanding of statistical procedures, how to choose correct statistical procedures, identify violations of statistical assumptions and how to interpret statistical results. Although computer softwares are commonly used to carry out statistical analyses (e.g. SPSS, Minitab, SAS), the methods used to generate statistical output should be fully understood. This course is taught by different approaches e.g. lectures, reading materials, case studies, project, presentation and discussion.

FAR193/3: SOCIAL AND PUBLIC HEALTH PHARMACY

Profession and practice of pharmacy focus directly (i.e clinical) and indirectly (i.e policy and regulation) on health and wellness of patients and society. Physical sciences, biology (biomedical) and socio-behavioral sciences need to be emphasized to achieve both aspects of health and wellness. Understanding of behavioral aspect and responsibility of patients and health professionals to the healthcare system are therefore importance. This course will expose students to the sociology principles and their medical behaviour and

importance in healthcare and practice of pharmacy. The course includes; lectures, public health group projects, institutional attachment, cardiopulmonary resuscitation (CPR) course and training.

FAR215/3: PHARMACEUTICAL ANALYSIS

This course emphasizes on the basic techniques and instrumentation for the analysis of drugs in formulation and biological fluids. It covers both fundamental theory and application of analytical methods common in pharmaceutical analysis. Analytical techniques such as extraction, electrophoresis, spectrochemical (molecular and atomic) and chromatographical (liquid, plane and gas) methods of analysis used in pharmaceutical analysis will be taught.

FAR221/3: PHYSICAL PHARMACY I

Topics discussed are: the states of matter and physicochemical properties of each state and the clinical implications, drug solubility and distribution phenomenon, diffusion, dissolution, colligative properties, ideal and true solutions, buffered and isotonic solutions, drug ionization, complexation and interfacial phenomena at liquid and solid surfaces.

FAR222/3: DOSAGE FORM II

This course introduces students to principles of sterilisation and aseptic technique, pharmaceutical sterile dosage forms and formulations, especially parenteral and ophthalmic products. This course also covers topics such as labeling and packaging, sterilisation methods and testing methods for quality control of sterile preparations.

FAR223/3: PHYSICAL PHARMACY II

This course covers five topics, namely, polymers, pharmaceutical suspensions, pharmaceutical emulsions, colloids and rheology of liquids. The students will be exposed to the terms, definitions, concepts, theories, principles and applications of the above topics.

FAR224/2: DRUG DELIVERY AND TARGETING

This course gives an overview of the principles of drug delivery and targeting, their current applications and potential development in the future. The discussion involves cutting-edge technologies used in the drug delivery system such as liposomes, nanoparticles and microspheres, including the

achievements and shortcomings of current drug delivery systems. This course also discuss strategies used to optimize drug delivery to target sites such as controlled/sustained drug release and drug targeting. Various drug delivery systems such as transdermal, transmucosal (nasal, pulmonary) and brain (targeting to the blood-brain barrier) will also be discussed.

FAR240/4: PERIPHERAL NERVOUS SYSTEM AND THERAPY

This course briefly reviews the organization of the nervous system into the central and peripheral nervous systems, neurophysiology of excitable tissue (nerve and muscles) – resting and action potential, nerve conductance, sensory receptors, synapses and chemical neurotransmission; muscles – skeletal, smooth and cardiac, physiology of the peripheral nervous system – somatic and autonomic, neuroanatomy, division, transmitters, receptors, effectors and central control of autonomic function, pharmacology and chemistry of drugs acting on somatic and autonomic nervous system clinical considerations of related disorders – peripheral neuropathy, myasthenia gravis and diarrhoeas.

FAR241/4: ANTIMICROBIAL THERAPY

The course aims at introducing students to the normal flora, protozoa, helminth and pathogenic microorganism and the pathology of common infectious diseases. Students will be taught the pharmacological and pharmaceutical chemistry aspect of antibacterial, antifungal, antiviral, antiprotozoal and anthelmintic drugs that are being used in the treatment of infectious diseases. Students will also be taught about clinical infections, ways of handling, monitoring as well as management of these drugs in infectious diseases.

FAR242/4: ENDOCRINE SYSTEM AND METABOLISM

This is an integrated course that discusses the relationship between the endocrine and the reproductive systems with the nervous system in maintaining homeostasis. The course aims at introducing the structure, function and regulation of the endocrine and the reproductive systems as well as the pathophysiology and treatment of common disorders. Both systems have such divergent effects on the human body that it permeates all disciplines of the practice of pharmacy that are physiology, pharmacology, pharmaceutical chemistry and clinical pharmacy.

FAR281/2: INTRODUCTION TO INDUSTRIAL PHARMACY AND PHARMACY PRACTICE

In this course, it is compulsory for the students to undergo attachment at hospital, community and industrial pharmacy for a certain period of time. The students will be exposed to the role and daily activities of the pharmacist in the respective sectors.

FAR292/2: PHARMACEUTICAL MANAGEMENT

The ability of pharmacy profession and pharmacist to provide pharmaceutical services which are accessible and affordable by all patients is very important for the sustenance of the profession and the well being to the society. Pharmacists must be able to integrate their knowledge and skills in economy, management and marketing with professional responsibilities and ethics. Therefore, this course has been designed to students to acquire the knowledge and understanding of the current problems, practices and applications of management in pharmacy profession whether locally or internationally. Students will be given the opportunity to discuss on given case studies related to management issues in the pharmaceutical area, as well as work on related research projects.

FAR314/3: PHARMACOGNOSY & PHYTOCHEMISTRY

This course covers the areas of pharmacognosy and phytomedicine, including basic plant biology, natural product chemistry, plant extract derived pharmaceuticals and nutraceuticals. Medicinal plants products in selected healthcare systems are also given together with aspects of evaluation and solving regulatory issues, classification, taxonomy and nomenclature, sources, quality control, standardization, herbarium, arboretum, extraction, drying, formulation, pilot plant, clinical studies of local medicinal plants.

FAR324/4: PHARMACEUTICAL PROCESSING

This course encompasses the principles and knowledge regarding pharmaceutical processing and quality control. The topics include preformulation, powder technology, drying, heat transfer, semi-solids, liquids, tablets, capsules, stability of dosage forms and packaging .

FAR325/2: BIOPHARMACEUTICS AND PHARMACOKINETICS

This course covers the factors affecting drug absorption / bioavailability and the mathematical models used to describe the fate of a drug after its administration into the body. It also includes applying biopharmaceutics and pharmacokinetics in design / development of drug dosage regimes. Genetic factors affecting drug pharmacokinetics and pharmacodynamics as well as the concept of personalized drug therapy are also covered.

FAR341/4: RESPIRATORY, RENAL, BLOOD SYSTEMS AND THERAPY

This course covers the systemic physiology of the respiratory, renal and blood systems. An introduction to the pathophysiology related to these systems is also discussed. Pharmacological and chemical aspects used in the treatment of these disorders include the rationale of drug usage, mechanism of action, structure-activity relationships and their adverse effects are also discussed.

FAR342/3: CARDIOVASCULAR SYSTEM AND THERAPY

Structure and function of the cardiovascular system. Heart sounds and electrocardiogram. Regulation of blood pressure. Pathophysiological and clinical manifestation of the cardiovascular disorders: hypertension, angina pectoris, congestive heart failure, cardiac arrhythmias and hyperlipidemia. Pharmacological and chemical aspects of drugs used for the cardiovascular disorders including therapeutic indication, mechanism of action, adverse effects, choice and rationale of drugs used and their structure-activity relationship.

FAR343/2: GASTROINTESTINAL SYSTEM AND THERAPY

This course covers the systemic physiology of the gastrointestinal system. An introduction to the pathophysiology related to this system is also discussed. Pharmacological and chemical aspects used in the treatment of these disorders include the rationale of drug usage, mechanism of action, structure-activity relationships and their adverse effects are also discussed.

FAR344/4: CENTRAL NERVOUS SYSTEM AND THERAPY

The course aims to provide students an introduction to the organization of the central nervous system; the structure, integrative functions and regulation of the central nervous system and the pathophysiology of common central nervous system disorders. Subsequently, students will be taught the

pharmacological and chemical aspects of drugs acting at the central nervous system. Emphasis is placed on mechanisms of action of the major groups of drugs and important aspects of drugs pharmacokinetics, adverse effects, drug-drug interactions and structure-activity relationships. The clinical component of this course will cover on therapeutic aspects of drugs focusing on drug selection, dosing regimen and monitoring of drug therapy.

FAR352/4: CLINICAL PHARMACY PRACTICE

This course provide knowledge related to principles and philosophy of pharmaceutical care in clinical pharmacy practice including the principles of pharmacotherapy, evidence-based medicine and identifying drug related problems. It also gives knowledge and build the students' skills in basic and extended clinical pharmacy services in inpatient and outpatient settings, including prescription screening, drug distribution system and drug dispensing, communication with doctor, medication counseling, medication therapy adherence clinic, antibiotic stewardship program, medication safety program, aseptic dispensing, pharmacogenetic, as well as innovation in pharmacy services.

FAR354/2: PHARMACOINFORMATICS: THEORY AND APPLICATION

This course expose student to drug information system and the use of technology, automation and “big data” in the pharmacy services. The main focus is to improve their skills in evaluating drug information, handling drug information request and using technology in disseminating information.

FAR355/2: CLINICAL PHARMACOKINETICS & PHARMACOTHERAPEUTIC MONITORING

This course provides an understanding of the concepts and applications of pharmaceutical care and clinical pharmacokinetics in therapeutic drug monitoring (TDM). This course aims to enhance the skills and knowledge of students in providing advanced therapeutic drugs and to apply for narrow therapeutic drugs such as aminoglycosides, vancomycin, chloramphenicol, cyclosporine, digoxin, salicylate, theophylline and methotrexate. The course also trains students to interpret and design new doses for patients.

FAR382/2: FORENSIC PHARMACY

This course introduces to the concept of basic laws in Malaysia. It covers with particular emphasis on the five Malaysian pharmaceutical legislations. These

legislations govern the control on chemical and pharmaceutical materials, medicines, advertisement of medicines and the professional ethics of pharmacist. Malaysian National Medicines Policy as well as Good Governance of Medicines will also be covered.

FAR420/3: PHARMACEUTICAL BIOTECHNOLOGY

This course will give an insight into the ever-increasing lists of prescribed biotechnology drug products (biologics) such as protein, nucleic acid-based therapies (viral vectors for gene therapy) and immuno-therapeutics (monoclonal antibodies, virus-like particle vaccine candidates). The application of recombinant DNA technology and genetic engineering/manipulation for the generation of biopharmaceuticals or protein drugs/analogues with the desired/enhanced therapeutic properties will be highlighted in this course. Upstreaming (vector construct design & host cell selection) and downstreaming (purification, formulation, dispensing) processes in biopharmaceutical production will also be discussed. Topics related to Good Manufacturing Practices (quality assurance, process validation) for biotechnology-based products will also be taught. Students will also be given exposure regarding regulatory guidelines concerning biologics/biopharmaceutical drug approval and the various ethical, legal and social issues associated with biotechnology-based products.

FAR462/2: COMMUNITY PHARMACY

This course will emphasize on the application of the principles of pharmaceutical care in community pharmacy practice. The main purpose is to build the ability and clinical skills to identify and solve problems related to minor illnesses and nonprescription therapeutics. Techniques to perform appropriate examination and patient assessment, as well as monitoring on nonprescription therapy will be discussed.

FAR491/3: PHARMACOEPIDEMIOLOGY & PHARMACOECONOMICS IN DEVELOPING COUNTRIES

This course provides an introduction to the basic principles of pharmacoepidemiology and pharmacoconomics and how they are used in the evaluation of medicines and health care services in developing countries. It will begin by introducing basic principles and analysis methods in pharmacoepidemiology and pharmacoconomics and followed by application of these in practice. This course will include lectures, reading materials, case studies and discussion.

7.2 Streaming Elective Courses

FAR411/2: ADVANCED PHARMACEUTICAL ANALYSIS

This course covers the principles and the basic techniques as well as the instrumentation for pharmaceutical analysis. The separation methods and the quantitative analyses are emphasized. The methods that are covered are the chromatographic methods (gas chromatography (GC): GC-MS, high performance liquid chromatography (HPLC): Chiral HPLC and LC-MS, and the sample preparations for these methods, liquid chromatographic methods for protein analysis and bioanalytical methods (immunoassay methods and the enzymatic assay). The quantitative analysis is also focused on the spectroscopic methods: infrared spectroscopy (IR) and nuclear magnetic resonance spectroscopy (NMR).

FAR426/2: INDUSTRIAL PHARMACY

This course covers principles pertinent to working in the pharmaceutical industry. It includes details of Good Manufacturing Practice (GMP), quality management, development of a business strategy, guidelines on registration of a product, control of the manufacturing environment and raw materials, control of pharmaceutical preparations and related products, packaging, storage and distribution, process optimisation and regulatory requirements.

FAR427/8: INDUSTRIAL TRAINING (INDUSTRIAL PHARMACY)

This course places students for at least 12 weeks in a company that is involved with the production of pharmaceutical, biopharmaceutical, herbal, cosmeceutical, nutraceutical or veterinary products. Knowledge which have been obtained in previous courses, especially FAR426, covering Good Manufacturing Practice (GMP), quality management, development of a business strategy, guidelines on registration of a product, control of the manufacturing environment and raw materials, control of pharmaceutical preparations and related products, packaging, storage and distribution, process optimisation and regulatory requirements, will be applied in real-life industrial pharmacy situations.

FAR460/2: TRADITIONAL AND COMPLEMENTARY MEDICINE

This course aims in exposing students on the basic concept of Traditional and Complementary Medicine (T&CM) and the different types of T&CM services available in Malaysia. Students will also be exposed to the National T&CM Policy and T&CM Act which covers the expectation and the enforcement that come with them. Special focus would be given to the four main medical

system as mentioned in the National T&CM Policy, ie. Traditional Malay Medicine, Traditional Chinese Medicine, Traditional Indian Medicine (Ayurvedic) and Homeopathic Medicine. Some focus would also be given to other common Complementary Medicine, which seems reliable and safe.

FAR465/2: PHARMACY ASEPTIC SERVICES

This course will emphasize on the application and concept of aseptic handling in three different aseptic pharmacy services such as cytotoxic drug reconstitution, parenteral nutrition and nuclear pharmacy. The scope of knowledge also included designing of the aseptic clean room, pharmacist's responsibility in service(including daily activity), the current practice in aseptic pharmacy services, quality control, patient monitoring, counselling and documentation/record, and future research related to the services. The course will also provide and enhance the skills for drug therapy assessment with pharmaceutical care approach based on patients' case.

FAR466/2: PHARMACOTHERAPY IN SPECIAL POPULATION

This course is to educate pharmacy students on drug usage among special populations, which are geriatrics, pediatrics, pregnant and breastfeeding women. Due to physiological changes that may affect drug pharmacokinetics and pharmacodynamics, these populations may require alterations in drug therapy plan. The course covers the principles of drug therapy for each population, common medical conditions and health problems, appropriate medication use, complications and other aspects that may contribute to different approach in treatment modalities to cater for their needs.

FAR467/2: APPLIED THERAPEUTIC I

This course will give an insight into the ever-increasing lists of prescribed biotechnology drug products (biologics) such as protein, nucleic acid-based therapies (viral vectors for gene therapy) and immuno-therapeutics (monoclonal antibodies, virus-like particle vaccine candidates). The application of recombinant DNA technology and genetic engineering/manipulation for the generation of biopharmaceuticals or protein drugs/analogs with the desired/enhanced therapeutic properties will be highlighted in this course. Upstreaming (vector construct design & host cell selection) and down streaming (purification, formulation, dispensing) processes in biopharmaceutical production will also be discussed. Topics related to Good Manufacturing Practices (quality assurance, process validation) for biotechnology-based products will also be taught. Students will also be given exposure regarding regulatory guidelines concerning

biologics/biopharmaceutical drug approval and the various ethical, legal and social issues associated with biotechnology-based products.

FAR468/4: APPLIED THERAPEUTIC II

This course exposes students to practice drug therapy assessment through pharmaceutical care approach based on case orientation. The diseases involved in this course are the common skin, rheumatic, psychiatry, neurology, infectious and liver diseases. The scopes of knowledge are pathophysiology, sign and symptoms, diagnosis included review of organ systems, laboratory values, medicinal chemistry, pharmaceutical and pharmacotherapeutic. The students are assisted to use patient's clinical informations to evaluate the therapeutic outcomes, to identify drug related problems and give therapeutic recommendation, monitoring and counselling. The student are encouraged to used the latest treatment guidelines and references(articles) to provide evidence based treatment.

FAR492/8: INDUSTRIAL TRAINING (COMMUNITY PHARMACY)

This course places students in a community pharmacy involved in the sale of poison A, pharmaceutical products, vitamins, herbs, cosmetics, nutraceuticals or supplements for a minimum of 12 weeks. The knowledge learned in previous courses, especially Communication Skills in Pharmacy Practice, Pharmaceutical Management and Marketing, Core Entrepreneurship, Health Promotion Pharmacy, Medicines Counseling Practice and Community Pharmacy will be applied in real community pharmacy.

7.3 Elective Courses

FEL273/2: VETERINARY PHARMACY

The course aims at introducing students to etiology, sign and symptoms and treatment of common diseases in farm animals and pets using chemicals. Students are also introduced to antibiotics are used to control bacterial and coccidial infections, anthelmintics to control worm infection, antiseptics for cleaning wounds, vaccines as prophylaxis and treatment of viral/bacterial infection, insecticides to control insects from spreading diseases, minerals and vitamins for prophylaxis and treatment of metabolic and deficiency disorders. Besides, the mechanism of action of antibiotics, antibacterials and growth promoters to increase growth rate of farm animals, action of disinfectants to prevent an outbreak of a disease, special formulation and delivery system for intensive animal farming are also discussed.

FEL274/2: HEALTH PROMOTION PHARMACY

This course provides students with the basic knowledge of health promotion, effective communication technique with professional and publics and to evaluate the need and outcome of a health promotion activity. In addition students will also developed the skill to select the best medium, plan, conduct and evaluate a health promotion activity.

FEL275/2: TOXICOLOGY

The course aims to provide students an introduction to principles of toxicology, toxicity mechanism, xenobiotic biotransformation and toxicokinetic. Subsequently, students will be taught toxicity aspects on organ directed and non-organ directed. Emphasis is placed on response of selected organs against toxic agents including genetic toxicology, developmental toxicology and carcinogen. Effects of common toxic agents on human body will also be discussed. Environmental toxicology and toxicology application will cover on aspects of food, analytic/forensic, clinical, occupational and regulatory toxicology.

FEL276/2: INTRODUCTION TO PHARMACEUTICAL MARKETING

The ability of pharmacy profession and pharmacist to provide pharmaceutical services and products which are accessible and affordable by all patients is very important for the the well being of the society. Pharmacists must be able to integrate their knowledge and skills in economy, and marketing with professional responsibilities and ethics. Therefore, this course has been designed to students to acquire the knowledge and understanding of the basic marketing principles and its application in pharmacy business.

FEL373/2: DRUG MODELLING

This course introduces the students to the utilisation of computer aided techniques in drug discovery process. It covers rational drug design where molecular modelling and computational sciences methodologies are employed. Theories such as atomic, quantum and molecular mechanics, QSAR and machine learning are also introduced.

FEL374/2: DRUG AND SOCIETY

This course provides students with knowledge of various aspects of drug abuse in the society such as commonly abused drugs, signs and

symptoms of drug abuse, factors of drug addiction and the effect of drug abuse to the society and country.

FEL470/6: RESEARCH EXERCISE

This course provides an exposure to the research and development field. Students are able to pursue their research in the subject of their interest with a supervisor of their choice.

FEL476/2: CURRENT TOPICS IN HUMAN PHYSIOLOGY

This is an elective course that discusses the current topics in Human Physiology. The course aims at introducing the students to the latest findings and trends in Human Physiology which forms the foundation behind the choices of therapies in disease states. Topics that will be discussed include current trends in gene therapy, stem cells and stem cell-based therapies, reproductive health, proteomics and the regulation, roles of peripheral resistance vessels in blood pressure control, toxin and venom from venomous animals, the important of venom in pharmaceutical and medical fields and antimicrobe peptides. However, the selected topics depend on the expertise of the lecturers involved and may change in each semester.

FEL477/2: PERSONAL CARE

This course is an introduction to the cosmetic products available in the market. Topics that will be discussed include structure and physiology of certain body parts and their relevant cosmetic products; skin care products (e.g. soap, facial wash, moisturiser, sunblock) and hair care products (e.g. shampoo, conditioner, hair colouring agent). This course also discussed coloured cosmetic preparations for face, eyes, lips and nails, as well as baby care products (e.g. powder, oil, lotion, cream), dental care products (e.g. toothpaste, denture cleansing), feminine hygiene products, deodorant, anti-perspirant and perfume.

FEL478/2: PATIENT BED SIDE PHYSIOLOGY

This course gives insight into translational physiology to senior year pharmacy students. It consists of student learning centered teaching module that fosters critical thinking and understanding of underlying pathophysiological changes occurring in a diseased state, with a special focus on chronic diseases. The students are trained to explain complex interactions of physiological principles that underlie the diseased states leading towards justification of the prescribed drugs based on these physiological principles.

FEL479/2: PRECISION MEDICINE

This course will introduce the student to the concept of personalised medicine and the role of pharmacists in related clinical practice and research. The main focus will be given to the pharmacogenomics aspect and variability in drug response. Emphasis will also be given to other areas such as pharmacometabolomics, epigenetics, pharmacometric and others that are also related to personalised medicine.



8.0 STUDENTS' FEEDBACK

The aim of this feedback form is to obtain students' response regarding the contents of this Guidebook. This information obtained will be useful in improving it.

Please respond to items 1 - 5 below based on the following 4-point scale.

1 - Strongly Disagree	2 - Disagree	3 - Agree	4 - Strongly Agree
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Please circle the number.

1. This guidebook is very useful.

1	2	3	4
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2. The information provided in this guidebook is accurate.

1	2	3	4
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If you chose 1 or 2 for question no. 2, please state the page number that contains information that is inaccurate in the space below.

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3. The information provided in this Guidebook is clear and easy to understand.

1	2	3	4
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4. On the whole, the quality of this Guidebook is good.

1	2	3	4
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5. I prefer to use CD compared to this Guidebook.

1	2	3	4
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6. If you think other information should be included to make this Guidebook better, please write your suggestions in the space below.

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Please submit this feedback form to your School's General Office in the 4th week of Semester 1, Academic Session 2020/2021



*Transforming Higher Education
for a Sustainable Tomorrow*