**Personal Details**

Name: ______________________________________

Student Number: _____________________________

Address: ___________________________________

___________________________________________

Phone: _____________________________________

Email: _____________________________________

Emergency Contact: __________________________

___________________________________________

Medical Information: _________________________

___________________________________________

**IMPORTANT**

All students must be registered and have paid their fees.

If you have any problems or queries, please contact the Student Section.
MESSAGE FROM HEAD OF PHARMACY DEPARTMENT

MESSAGE FROM DEPUTY DEAN (UNDERGRADUATE AND DIPLOMA)

MESSAGE FROM DEAN
MESSAGE FROM DEAN

A very warm welcome to the Department of Pharmacy, Faculty of Medicine, University of Malaya.

I take this opportunity to congratulate all of you and welcome you to the Faculty of Medicine, University of Malaya. I am happy to note that the University of Malaya has been a favourite choice among those who wish to pursue their first degree in Pharmacy.

The main aim of this guidebook is to provide details of the Pharmacy course and curriculum for students. It has useful information on the facilities available in the Faculty and the Pharmacy Program.

Before you embark on the course, I would like to advice you to be focused in your studies. You need to find a proper strategy to manage your time well. Study hard, but at the same time, do take the opportunity to make full use of the excellent sports and recreational facilities that the university offers.

I want to stress that the Faculty of Medicine expects the highest level of discipline among the students. It is essential that students adhere to all rules and regulations of the University and the Faculty, as you are responsible for upholding the good name and reputation of the Faculty, as well as the University.

The members of the Faculty join me in wishing you every success in your studies. We hope you will enjoy your time here and that your studies will be rewarding and fulfilling.

PROFESSOR IKRAM SHAH ISMAIL
Dean
MESSAGE FROM DEPUTY DEAN  
(UNDERGRADUATE AND DIPLOMA)

On behalf of the Faculty of Medicine and the whole academic members, I extend a very warm welcome to each and every one of you. As a faculty, we would like your education in this institution to be a rewarding and an enriching experience.

Being a student, will take a good 3 to 4 years of your life depending on your programmed. To obtain your chosen degree, you have to put in a lot of hard work powered by dedication, sacrifices, unwavering determination, perseverance and commitment to ensure you will graduate not only equipped with the knowledge but also the skill required of the course.

The skills that will be harnessed include good communication skills between you and your colleagues, your teachers and those within the community. You will find that your teachers, seniors and friends are mentors in your quest to become good and ethical graduate thus be the best student you could possibly be. We hope the medical community will provide you the network to enable you to expand your horizon in the field. We want you to be curious about yours programmed. Everything that goes on in this institution is a learning opportunity.

We hope this guidebook can be used fully to your advantage in better understanding of the programmed and the people entrusted to run it. The Dean's office along with all its support groups will try to make your stay a memorable and a fruitful one.

Again, I wish you a warm welcome and I look forward to meeting each one of you over the next few years.

Professor Hamimah Hassan
MESSAGE FROM HEAD OF PHARMACY
DEPARTMENT

Assalamualaikum and Selamat Sejahtera,
I am delighted to welcome our new students to the Department of Pharmacy, and also to welcome back our continuing students. You are now members of one of the nation’s leading university, rich with research and educational opportunities. Your education should allow you to explore the many exciting opportunities available to today’s pharmacists.

This department was founded in 1995, initiated the program in pharmacy in the University of Malaya, and we awarded the first UM Pharmacy Degree in 1999, our first MSc in 2003 and our first Ph.D. in 2005. As educational innovations continue to evolve, the UM Department of Pharmacy provides programmatic education in pharmaceutical technology, pharmacology, medicinal chemistry and biochemistry, clinical pharmacy and social and administrative pharmaceutical sciences. We hope that you find this setting intellectually rewarding and are as proud as we are to be affiliated with this institution.

You are here to be educated in professional pharmacy. The department and faculty, academic and administration staff are here to help you reach your goal. We have the necessary knowledge, facilities and experience to contribute to this effort. Not all of it, however because good education is an active process, and you, the student, must also contribute your share of the effort. You will find it rewarding to succeed in developing your fundamental knowledge and your professional skills in pharmacy.

This Student Handbook is designed to help you by providing information on historical background, organizations, services, academic programs and learning outcomes for every course module and people involve in administration.

I hope you have a successful student career in the Department of Pharmacy, Faculty of Medicine and I look forward to interact with you.

Dr. Mohamed Ibrahim Bin Noordin
<table>
<thead>
<tr>
<th>Event</th>
<th>Duration</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation Week</td>
<td>1 week</td>
<td>29.06.2008 – 06.07.2008</td>
</tr>
<tr>
<td>Lecture</td>
<td>6 weeks</td>
<td>07.07.2008 – 17.08.2008</td>
</tr>
<tr>
<td>Mid-Semester Break</td>
<td>1 weeks</td>
<td>18.08.2008 – 24.08.2008</td>
</tr>
<tr>
<td>Special Break</td>
<td>1 weeks*</td>
<td>27.09.2008 – 05.10.2008</td>
</tr>
<tr>
<td>Lecture</td>
<td>3 weeks</td>
<td>06.10.2008 – 26.10.2008</td>
</tr>
<tr>
<td>Review</td>
<td>1 weeks&gt;</td>
<td>27.10.2008 – 02.11.2008</td>
</tr>
<tr>
<td>Examination</td>
<td>3 weeks</td>
<td>03.11.2008 – 23.11.2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26 weeks</td>
</tr>
<tr>
<td>Mid-Semester Break</td>
<td>1 weeks</td>
<td>26.01.2009 – 01.02.2009</td>
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<tr>
<td>Lecture</td>
<td>10 weeks</td>
<td>02.02.2009 – 12.04.2009</td>
</tr>
<tr>
<td>Examination</td>
<td>3 weeks</td>
<td>20.04.2009 – 10.05.2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19 weeks</td>
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<tr>
<td>Holiday</td>
<td>8 weeks</td>
<td>11.05.2009 – 05.07.2009</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecture &amp; Examination</td>
<td>7 weeks</td>
<td>11.05.2009 – 01.07.2009</td>
</tr>
</tbody>
</table>

* 1st & 2nd October 2008 – Hari Raya Puasa
> 27th October 2008 – Deepavali
# 08th December 2008- Hari Raya Qurban and 25th December 2007–Christmas Day
^ 26th – 27th January 2009 – Chinese New Year
Organization Chart of the Academic Staff
Of Pharmacy Program

Prof. Ikram Shah Ismail
Dean

Prof Hamimah Hassan
Deputy Dean Undergraduate

Puan Ruhani Zakaria
Principal Assist. Registrar

Dr. M. Ibrahim Noordin
Head of Pharm. Dept.

Prof. Dr. Hajjah Samsinah
Postgrad. Coordinator

Mrs. Faizah Safina Bakrin
Head of Basis of Therapeutics

Assoc. Prof. Dr. Chung Lip Yong
Head of Pharm. Chemistry

Mrs Syireen Alwi
Head of Clinical Pharmacy

Dr. M. Ibrahim Noordin
Head of Pharm. Technology

Dr. Zoriah Aziz
Head of Pharm. Admin. & Health Care

Prof. Dr. Hajjah Samsinah Hj. Hussain
Miss Mary Lee Hong Gee

Dr. Michael JC Buckle
Dr. Khalit Mohamad

Assoc. Prof. Dr. Chua Siew Siang
Ms Lo Yoke Lin

Mrs. Rozana Othman
Mrs. Hasniza Zaman Huri

Miss Reena D/O Rajasuriar
Mrs. Noorasyikin Shamsuddin

Drs. Riyanto Teguh Widodo
Mr. Afendi Dahan

Mrs. Junaidah Amir
Administration of Undergraduate & Diploma Programmed  
Faculty of Medicine, University of Malaya

DEAN  
Professor Ikram Shah Ismail  
Tel: 7949 2050  
Email: IKRAM@ummc.edu.my

DEPUTY DEAN  
Professor Hamimah Hj. Hassan  
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Email: HAMIMAH@ummc.edu.my

MBBS PHASE COORDINATORS

Professor Cheah Swee Hung  
(Department of Physiology)  
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Tel: 03-7967 4925  
Email: CHEAHSH@ummc.edu.my

Associate Professor Zurainee Mohamed Nor  
(Department of Parasitology)  
Coordinator of Phase II  
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Email: zuraineemn@um.edu.my

Professor Christopher Boey  
(Department of Pediatrics)  
Coordinator of Phase IIIA  
Tel: 79492699  
Email: boeycm@ummc.edu.my

Professor Liam Chong Kin  
(Department of Medicine)  
Coordinator of Phase IIIB  
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Email: LIAMCK@ummc.edu.my

ADMINISTRATION

Mrs. Ruhani Zakaria  
Principal Assistant Registrar  
Tel: 7949 2076  
Email: ruhani@ummc.edu.my

Mr. Tong Ngin Hok  
Head, Multidiscipline Laboratories I  
Tel: 7967 4772  
Email: tongnk@ummc.edu.my

Miss Lee Soh Kien  
Head, Multidiscipline Laboratories II  
Tel: 7967 4779  
Email: LEESK@ummc.edu.my

Miss Faridah Robiah Ismail  
Head, Unit of Medical Multimedia Development  
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Email: faridahr@ummc.edu.my

Mrs. Zaharah Ramly  
Chief Librarian, Medical Library  
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Email: maizonk@um.edu.my

Mrs. Siti Zaleha Ahmad  
Dean’s Office  
Tel: 7949 2107  
Email: maizonk@um.edu.my

Mrs. Noraini Jamaluddin  
Dean’s Office (Klang Campus)  
Tel: 03-33719914
Puan Fadilah Abdul Wahid
Dean’s Office
Tel: 7949 2107
Email: fadiaw@um.edu.my

Puan Mageswary Palaniandy
Dean’s Office
Tel: 7949 2107
Email: pmages82@um.edu.my

Mrs. Sarjit Kaur
Dean’s Office
Tel: 7967 6686
# Heads of Departments:

<table>
<thead>
<tr>
<th>Department of Anaesthesiology</th>
<th>Prof Chan Yoo Kuen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Anatomy</td>
<td>Prof Normadiah Kassim</td>
</tr>
<tr>
<td>Department of Biomedical Imaging</td>
<td>Associate Prof Norlisah Mohd. Ramli</td>
</tr>
<tr>
<td>Department of Medical Microbiology</td>
<td>Prof Sazaly Abu Bakar</td>
</tr>
<tr>
<td>Department of Obstetrics &amp; Gynaecology</td>
<td>Prof Siti Zawiah Omar</td>
</tr>
<tr>
<td>Department of Ophthalmology</td>
<td>Associate Prof Mimiwati Zahari</td>
</tr>
<tr>
<td>Department of Orthorhinolaryngology</td>
<td>Associate Prof Rahmat Omar</td>
</tr>
<tr>
<td>Department of Orthopaedic Surgery</td>
<td>Prof Dato’ Tunku Sara Tunku Ahmad Yahaya</td>
</tr>
<tr>
<td>Department of Paediatrics</td>
<td>Prof Fatimah Harun</td>
</tr>
<tr>
<td>Department of Parasitology</td>
<td>Prof Rohela Mahmud</td>
</tr>
<tr>
<td>Department of Pathology</td>
<td>Prof Cheah Phaik Leng</td>
</tr>
<tr>
<td>Department of Pharmacology</td>
<td>Prof Mohd Rais Mustafa</td>
</tr>
<tr>
<td>Department of Pharmacy</td>
<td>Associate Prof Mohamed Ibrahim Noordin</td>
</tr>
<tr>
<td>Department of Physiology</td>
<td>Prof Ruby Husain</td>
</tr>
<tr>
<td>Department of Primary Care Medicine</td>
<td>Prof Khoo Ee Ming</td>
</tr>
<tr>
<td>Department of Psychological Medicine</td>
<td>Prof Mohamad Hussain Habil</td>
</tr>
<tr>
<td>Department of Medicine</td>
<td>Prof Wan Azman Wan Ahmad</td>
</tr>
<tr>
<td>Department of Molecular Medicine</td>
<td>Prof Onn Hashim</td>
</tr>
<tr>
<td>Department of Nursing Science</td>
<td>Associate Prof Rohani Arshad</td>
</tr>
<tr>
<td>Department of Rehabilitation Medicine</td>
<td>Dr Saini Jeffrey Freddy Abdullah</td>
</tr>
<tr>
<td>Department of Social &amp; Preventive Medicine</td>
<td>Prof Awang Bulgiba Awang Mahmud</td>
</tr>
<tr>
<td>Department of Surgery</td>
<td>Prof Azad Hassan Abdul Razack</td>
</tr>
</tbody>
</table>

# Heads of Units:

<table>
<thead>
<tr>
<th>Animal Research Centre</th>
<th>Dr. Hj. Azizuddin bin Hj. Kamaruddin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Oncology Unit</td>
<td>Associate Prof Dr. Anita Zarina binti Bustam</td>
</tr>
<tr>
<td>Electron Microscopy</td>
<td>Associate Prof Dr Nazarina Abdul Rahman</td>
</tr>
<tr>
<td>Medical Biotechnology Laboratory</td>
<td>Dr. Sarni Mat Junit</td>
</tr>
<tr>
<td>Medical Education Research Development Unit (MERDU)</td>
<td>Prof. Dr. Christina Tan Phong Lay</td>
</tr>
<tr>
<td>Sports Medicine Unit</td>
<td>Associate Prof. Dr. Mohd Razif bin Mohd Ali</td>
</tr>
<tr>
<td>Trauma &amp; Emergency</td>
<td>Prof. Dr. David Choon Siew Kit</td>
</tr>
</tbody>
</table>
Vision
Centre of Excellence in Medicine

Mission
To provide excellent Health Care, Education and Research Programmes delivered with efficiency, sensitivity and enthusiasm.
History of the Faculty

1905

First Batch - 1969

2005
Historical background

The University of Malaya was established on 8 October 1949 as a national institution to serve the higher educational needs of the Federation of Malaya and of Singapore. In 1960, the Government of the Federation of Malaya indicated that the Kuala Lumpur Division of the University of Malaya should become the national University in the Federation with effect from the beginning session 1962/63. Likewise, the Singapore Division should become the national University of Singapore. Steps to achieve the establishment of these two separate universities were finalized during the year 1961 and the University of Malaya was established on 1st January 1962. The student population at that time was about 330. Since then, the University has grown and developed rapidly. Today, the student population has grown to almost 30,000.

Establishment of the Faculty of Medicine at the University of Malaya

Up to the 1950’s, the Faculty of Medicine, University of Singapore, which was known previously as King Edward VII College of Medicine had been the only medical school in Malaya and Singapore. The output of doctors at that time was small: 60 per year. Many Malaysians had to go overseas to seek undergraduate medical education. It was not until 1960 that a determined effort was made to double the intake of students to 120 per year in Singapore. In 1960, a board of studies of the University of Malaya was appointed to study the feasibility of establishing a medical school with its own teaching hospital. The board recommended the early establishment of both.

To this end, the Government agreed and the Ministries of Education and of Health provided the necessary capital funds. In 1962, a Dean for the Faculty of Medicine was appointed.
The first batch of medical students was admitted to the Faculty in 1964. A year earlier, these students, 40 of them, were placed in the Faculty of Science as pre-medical students. Construction of the faculty building began in July 1963, was completed in 10 months, so that the pioneer students were able to begin their course in May 1964. The building programmed continued and the second phase was ready in time for Year II teaching the following May. Throughout this period, planning, building, ordering and receiving of equipment, recruitment of staff, organization of the Faculty, and discussions on the curriculum continued unremittingly. Phase I of the University Malaya Medical Centre consisting of the main block together with podium or “technical box” (operating theatres, radiodiagnostic, accident and emergency, polyclinic, pharmacy, central sterile supply, cafeteria, administration and medical records) was completed in December 1966, and the first wards were opened as on March 1967. Phase II of the Hospital consisting of Pediatric, Maternity and Rehabilitation Units was completed in December 1967, and became functional in March 1968. The total construction period for the Medical Centre consisting of the Faculty departments, Hospital (740 beds), Hostel for Clinical Students, Nurses Quarters with Nursing School and Central Animal House was three and a half years. Over the past three decades, the medical centre has expanded tremendously, and today it has 900 beds (the number will be increased to 1200 beds after renovation).

**Philosophy of the Faculty of Medicine**

The philosophy of the Faculty is to mold students to be competent, highly-skilled and knowledgeable doctors, who can work with others as a team, who are caring and concerned about their patients and society, and who can emerge as leaders in their community.

**Orientation period**

As part of the university orientation programmed, all new students undergo an orientation period where they are introduced to life on campus and in the residential colleges. In the Faculty of Medicine, the programmed includes registration, briefings by the Dean & Deputy Dean and a tour of the various academic facilities at the medical centre. During this period, the students are given information about the activities of the faculty, facilities available as well the course content.

An early introduction to the use of library services and the Student Information System are also made available.
### Organization of Pharmacy Department

<table>
<thead>
<tr>
<th>Role</th>
<th>Name</th>
<th>Qualifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of Department</td>
<td>Associate Prof. Dr. Mohamed Ibrahim Noordin</td>
<td>B.Pharm (Hons), M.Sc.Ph.D</td>
</tr>
<tr>
<td>Postgraduate Programmed Coordinator</td>
<td>Profesor Dr. Hajjah Samsinah Hj. Hussain</td>
<td>B.Pharm (Hons), Ph.D, Grad.Cert.Pharmacoeconomics</td>
</tr>
<tr>
<td>Discipline Coordinators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basis of Therapeutics</td>
<td>Mrs. Faizah Safina Bakrin</td>
<td>B.Pharm.Sc, M.Pharm Sc.</td>
</tr>
<tr>
<td>Pharmaceutical Chemistry</td>
<td>Profesor Dr. Chung Lip Yong</td>
<td>B. Pharm, M.Sc, Ph.D.</td>
</tr>
<tr>
<td>Pharmaceutical Technology</td>
<td>Associate Prof. Dr. Mohamed Ibrahim Noordin</td>
<td>B.Pharm (Hons), M.Sc.</td>
</tr>
<tr>
<td>Clinical Pharmacy</td>
<td>Ms Lo Yoke Lin</td>
<td>B. Pharm, M.Pharm (Clin Pharm).</td>
</tr>
<tr>
<td>Pharmacy Administration &amp; Health Care</td>
<td>Associate Prof. Dr. Zoriah Aziz</td>
<td>B.Pharm (Hons), M.Sc, Ph.D,M App Stats</td>
</tr>
<tr>
<td>Level Coordinators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>Associate Prof. Dr. Zoriah Aziz</td>
<td></td>
</tr>
<tr>
<td>Intermediate I</td>
<td>Profesor Dr. Hajjah Samsinah Hj. Hussain</td>
<td></td>
</tr>
</tbody>
</table>
Intermediate II  Drs. Riyanto Teguh Widodo

Professional  Ms Lo Yoke Lin

Academic Staff

Basis of Therapeutics

Mrs. Faizah Safina binti Bakrin
B. Pharm. Sc, M.Pharm Sc.

Profesor Dr. Hajjah Samsinah Hj. Hussain
B.Pharm (Hons), Ph.D,
Grad.Cert.Pharmacoeconomics

Ms Mary Lee Hong Gee
B.Pharm, M.Pharm (Clin Pharm)

Pharmaceutical Chemistry

Profesor Dr. Chung Lip Yong
B. Pharm, M.Sc, PhD
Dr. Michael JC Buckle  
B.Sc, Ph.D

Dr. Khalit Mohamad  
B.Sc (Chemistry), M.Sc (Chemistry), Ph.D

Mrs. Rozana Othman  
B.Sc (Hons), M.Sc (Chemistry)

Pharmaceutical Technology

Associate Prof. Dr. Mohamed Ibrahim Noordin  
B.Pharm (Hons), M.Sc, Ph.D

Drs. Riyanto Teguh Widodo  
BSPharm,Apt,DRS (Doctored of Pharm), M.Sc.
Mrs. Noorasyikin Shamsuddin  
B.Pharm (Hons), M.Pharm (Clin Pharm)  

Miss Lo Yoke Lin  
B.Pharm, M.Pharm (Clin Pharm)  

Associate Prof. Dr. Chua Siew Siang  
B.Pharm (Hons), Ph.D  

Mrs. Syireen Alwi  
BSc (Hons) Pharm, M.Pharm (Clin Pharm)  

Mrs. Hasniza Zaman Huri  
B.Pharm (Hons), M.Pharm (Clin Pharm)  
(Study leave)
Miss Reena A/P Rajasuriar
B.Pharm (Hons), M.Pharm (Clin Pharm)
(Study Leave)

Pharmacy Administration & Health Care

Dr. Zoriah Aziz
B.Pharm (Hons), M.Sc, Ph.D, M App Stats

Mrs. Junaidah Amir
B.Pharm (Hons), M.Pharm (Clin Pharm)
(Study leave)

Tutor

Mrs. Kanagamalar Subramaniam
B.Sc.(Hons) Microbiology
Supporting Staff

Technical:

Science Officer

Ms Nor Nadia Alies  
*B.Sc.(Hons) Applied Chemistry*

Mr. Abdul Aziz Ismail  
*B.Sc.(Hons) Biotechnology*

Medical Lab Tecnologist

Mrs. Rustini Karim  
*Dip. In Med. Lab Tech (UM)*

Miss Salmizawati Salim  
*Dip. In Med. Lab Tech (UM)*
General workers:

Mr. Jauzi Shahidin

Mr. Anuar Abdullah

Miss Gangeswary Sukumaran
PROGRAMME TITLE
Title of the conferred degree: Bachelor of Pharmacy (Hons)

PROGRAMME PHILOSOPHY
The Bachelor of Pharmacy (Hons) degree programme that is offered by the University of Malaya holds true to the following philosophy which is in line with the nation’s requirements:

The programmed offers a broad-based curriculum and training with opportunities for specialization. It supports evidence-based practices and consists of dynamic characteristics with room for future advancement.

PROGRAMME PRINCIPLES
In line with the programmed philosophy, the programmed offered is based on the following principles:

• The basic training given is broad-based and encompasses all perspectives of the pharmacy practice, from pharmaceutical sciences to its application in the field of clinical pharmacy.

• The programme utilizes interactive teaching methods and incorporates evidence-based practices in an effort to promote critical thinking and analysis in all the taught disciplines.

• The education provided is dynamic and farsighted to equip the graduates to face current and future challenges.

• Emphasis is given on basic communication and thinking skills as well as the benefits of modern communication technology.

• The training encompasses the importance of patient/customer oriented therapy as well as uses a multi-disciplinary approach to deliver effective and efficient healthcare services.

PROGRAMME OBJECTIVES
By conducting a programmed, that follows the philosophy and principles mentioned, it is believed that it will be able to produce competent pharmacists with high principles of professionalism and ethics as well as being able to provide pharmaceutical care services. In addition, the graduates should also be able to:
• practice in all the various fields of pharmacy and any related areas,
• function as professionals, knowledgeable in the dynamic health care system,
• always aspire to be intellectually stimulated throughout their professional careers,
• uphold the highest of moral values required in providing services to patients and the community: considerate, compassionate, ethical and knowledgeable,
• remain as a productive and responsible member of the professional and capable of leading the profession and the community according to conditions.

ENTRY REQUIREMENTS

All candidates applying for the Bachelor of Pharmacy (Hons) program, Faculty of Medicine, University Malaya must fulfill the following requirements:

(a) SPM / MCE or its equivalent (taken in a single seating)
   • Pass with at least credit in the three (3) following subjects at SPM or its equivalent level:
     • Biology
     • Physics
     • Chemistry

   Pass with Grade B (cGPA 3.0) in the subjects concerned at STPM/ Matriculation level may be considered as a substitute to the credit in the same subjects at SPM level;
   • Pass with credit in Bahasa Melayu / Bahasa Malaysia at SPM or its equivalent level;
   • Have taken the Malaysian University English Test (MUET);

   And

(b) (i) Matriculation/ ‘Asasi Sains’/Equivalent
   • Pass with at least Grade B (cGPA 3.0) in every combination of the following three (3) subjects at Matriculation/ its equivalent level:
     • Biology
     • Chemistry
     • Physics / Mathematics

   OR

(ii) STPM
   • Pass with at least Grade B (cGPA 3.0) in every combination of the following three (3) subjects at STPM level:
     • Biology
     • Chemistry
     • Physics / Mathematics T/ Additional Mathematics T
Every offer made to follow the programmed is valid only for one semester of the corresponding session. Candidates are not allowed to register for more than one degree programmed at any one time.

Entry qualifications into the Pharmacy degree programmed will also depend on the overall performance of all the candidates applying for the given session. As the number of places is limited, only candidates with the best results will be selected.

The selection of a candidate to enter the Pharmacy programmed at the University of Malaya is done by a central committee called the “Unit Pusat Universiti” (UPU) under the Ministry of Higher Education, Malaysia.

**PROGRAMME DURATION & THE SYSTEM USED**

- **PROGRAMME DURATION**

  The duration allowed for completion of the programmed is a minimum of 8 semesters to a maximum of 12 semesters, excluding special semesters. This stipulated duration is necessary to fulfill the requirements of the semester system practiced by the University of Malaya and other requirements set by the Malaysian Board of Pharmacy for the degree to be recognized.

- **THE SYSTEM USED**

  The system employed is a 4-year system (SPET) which covers 8 semesters.

  - **REGISTRATION**

    Please refer to the General Handbook for Semester System, University of Malaya which is published every academic session on how to register.

    Generally, the maximum credit hours allowed per normal semester is 21 and 9 for special semesters. However, the maximum credit hours allowed for the first semester in year one (1) is 16.

    A student is allowed to register more than 18 credit hours in any normal semester after the semester has started upon the student obtaining approval from the Dean of his/her faculty.
A student has to register at least 12 credit hours for a normal semester. Any student who wants to register less than 12 credit hours requires approval from the Dean. However, a student is not allowed to register less than 6 credit hours except for the last semester of his/her program.

The general guideline on the number of credit hours allowed per semester is as follows:

- GPA < 2.00 = max. 12 credit hours (probationer period)
- GPA ≥ 2.00 = max. 18 credit hours (21 credit hours with approval)

**SYSTEM OF CREDIT HOURS**

Each semester constitutes 14 teaching weeks.

Every course has a stipulated number of credit hours assigned to it where 40 student notional hours is equivalent to one credit.

**PROGRAMME LEVELS**

The level at which the student is in the program is determined by the cumulative number of credit hours he/she has successfully completed.

The Bachelor of Pharmacy (Hons) programme is divided into 4 levels:

- Elementary
- Intermediate I
- Intermediate II
- Professional

**LANGUAGE REQUIREMENT**

**BAHASA MALAYSIA**

All local and foreign students are required to fulfill the entry requirement for the Bahasa Malaysia language as stipulated by the Senate and in line with the nation’s policy.

**UNIVERSITY COURSES**

The university courses have been amended beginning Semester I of the 2004/05 session to contain 4 components with a total of 20 credit hours as follows;
1. Islamic & Asian Civilisation (TITAS) 2 credit hours
2. Ethnic Relationship 2 credit hours
3. Course in Information Skills 1 credit hour
4. Co-curriculum courses 2 credit hours
5. Basic of Entrepreneurship Culture (APK) 2 credit hours
6. English 6 credit hours
7. Electives courses outside faculty 6 credit hours

TOTAL (University Courses) = 21 credit hours (15%)

The above 1 to 7 courses are compulsory university courses.

- **CONFIRMEMENT OF THE DEGREE**

Every student has to fulfill the university, faculty and department course requirements prior to being awarded the degree.

The degree conferment will be based on the student's final cumulative grade point average (cGPA). To graduate, a student must have completed a minimum of 137 credit hours, based on the structure of the programmed (paragraph 5.1) and obtained a final cGPA of at least 2.0. Students who achieve a final cGPA of 3.7 and above will be awarded an honours degree (with distinction) if they fulfill the terms and conditions stipulated in the Handbook for the Semester System, University of Malaya.

- **STUDENT AWARDS**

Students who achieve a GPA of 3.7 and above in a semester and following the terms and conditions stipulated in the Handbook for Semester System, University of Malaya will be recorded as “Pass with Distinction” for that semester and their names will be entered into the Dean’s List.

Besides student awards conferred by the university, pharmacy students with outstanding academic results in the various fields of pharmacy as well as active co-curricular involvement will be eligible for various student awards.
### PROGRAMME STRUCTURE ACCORDING TO CATEGORY OF COURSES

The program structure is as follows for academic sessions commencing 2008/2009 onwards:

<table>
<thead>
<tr>
<th>COURSE</th>
<th>CONTENTS</th>
<th>NUMBER OF CREDIT HOURS</th>
<th>YEAR OF STUDY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>University courses</strong></td>
<td><strong>Compulsory courses:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- TITAS</td>
<td>2</td>
<td>1, 2, 3 and 4</td>
</tr>
<tr>
<td></td>
<td>- Ethnic Relationship</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Course in Information Skills</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Co-curriculum</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Basic Entrepreneurship Culture (APK)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- English</td>
<td>6</td>
<td>2, 3 and 4</td>
</tr>
<tr>
<td></td>
<td>- Electives courses outside faculty</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Faculty Courses</strong></td>
<td><strong>Department Core Courses</strong></td>
<td>106</td>
<td>1, 2, 3 dan 4</td>
</tr>
<tr>
<td></td>
<td>- Department core, Compulsory, and Prerequisite Courses</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Elective courses (Department electives)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td>137</td>
<td></td>
</tr>
</tbody>
</table>

| Level 1 – Elementary          | Level 2 – Intermediate I       |
| Level 3 – Intermediate II     | Level 4 – Professional         |


**Percentage division of programmed structure:**

- University courses (21 credit hours) = 15%
- Faculty, Academy and Centre courses (116 credit hours) = 85%
SUMMARY OF CURRICULUM

FACULTY COURSES

Faculty courses are divided into 5 disciplines as followed:
- Scientific Basis of Therapeutics
- Pharmaceutical Chemistry
- Pharmaceutical Technology
- Pharmacy Administration and Health Care
- Clinical Pharmacy and Therapeutics

Opportunities for specialization are offered through the various elective courses and the Undergraduate Research Project module.

List of department core courses according to discipline:

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Name of Course</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Basis Of Therapeutics</strong></td>
<td>Basic Anatomy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Physiology I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physiology II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical Microbiology</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical Immunology</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Pharmacotoxicology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Principles of Drug Action &amp; Peripheral Nervous System</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Cardiovascular, Renal Systems &amp; Therapy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Respiratory, Hematological Systems &amp; Therapy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Central Nervous System &amp; Therapy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Endocrine, Gastrointestinal Systems &amp; Therapy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Antimicrobial &amp; Antineoplastic</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Biostatistics &amp; Epidemiology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Statistic for Pharmacy</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[34]</td>
</tr>
<tr>
<td><strong>Pharmaceutical Chemistry</strong></td>
<td>General Pharmaceutical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Chromatography, Electrochemistry &amp; Radiochemistry</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Heterocyclic Chemistry &amp; Drug Discovery</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Medicinal Chemistry</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Pharmacognosy</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Pharmaceutical Biotechnology</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[19]</td>
</tr>
<tr>
<td><strong>Pharmaceutical Technology</strong></td>
<td>Pharmaceutical Dosage Form Design for Liquid and</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Semi-Solid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Solid Pharmaceutical Dosage Form Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Sterile Pharmaceutical Dosage Form Design</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Specialty Pharmaceutical Dosage Form Design</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Pharmacy</td>
<td>3</td>
</tr>
</tbody>
</table>
### DEPARTMENT ELECTIVES/ SPECIALISATIONS

<table>
<thead>
<tr>
<th>Course code</th>
<th>Course Title</th>
<th>Coordinator</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 3301</td>
<td>Sediaan-sediaan Bukan Preskripsi</td>
<td>ML</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2361</td>
<td>Women and Drug</td>
<td>SHH</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3345</td>
<td>Veterinary Pharmacy</td>
<td>RTW</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3346</td>
<td>Radiopharmacy</td>
<td>ML</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2366</td>
<td>Alternative Medicine</td>
<td>RTW</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3362</td>
<td>Drug and Poison Informatics</td>
<td>RR</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2348</td>
<td>Health Supplements</td>
<td>HZH</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2341</td>
<td>Drug Literacy</td>
<td>CLY</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2331</td>
<td>Drug Addiction and Abuse</td>
<td>MIN</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3321</td>
<td>Regulatory Control of Pharmaceuticals</td>
<td>MIN</td>
<td>1</td>
</tr>
<tr>
<td>MWEF 3343</td>
<td>Drugs in Sports</td>
<td>RTW</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3344</td>
<td>Pharmacy for Special Age Groups</td>
<td>LYL</td>
<td>2</td>
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</table>
### ELEMENTARY LEVEL

#### SEMESTER 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 1101</td>
<td>General Pharmaceutical Chemistry $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 1102</td>
<td>Pharmaceutical Organic Chemistry $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 1103</td>
<td>Computer Application Software &amp; Pharmacoinformatic $^c$</td>
<td>1</td>
</tr>
<tr>
<td>MWEF 1111</td>
<td>Basic Anatomy $^c$</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 1117</td>
<td>Physiology I $^*$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 1201</td>
<td>Statistic for Pharmacy $^c$</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>13</td>
</tr>
</tbody>
</table>

| GXEX 1410   | Islamic & Asian Civilisation (TITAS) $^c$         | 2            |

#### SEMESTER 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 1105</td>
<td>Heterocyclic Chemistry &amp; Drug Discovery $^c$</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 1106</td>
<td>Biochemistry $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 1107</td>
<td>Physical Pharmacy $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 1108</td>
<td>Principles of Drug Action &amp; Peripheral Nervous System $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 1119</td>
<td>Physiology II $^*$</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>14</td>
</tr>
</tbody>
</table>

| GXEX 1401   | Information Skills $^*$                           | 1            |
| GXEX 1411   | Ethnics Relationship $^u$                         | 2            |
| GXEX 1412   | Enterpreneurship (APK) $^u$                       | 2            |

### INTERMEDIATE 1 LEVEL

#### SEMESTER 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 2101</td>
<td>Pharmaceutical Dosage Form Design for Liquid and Semi-Solid $^c$</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2102</td>
<td>Pharmaceutical Analysis $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 2103</td>
<td>Central Nervous System &amp; Therapy $^c$</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2104</td>
<td>Medicinal Chemistry $^c$</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2105</td>
<td>Respiratory, Hematological Systems &amp; Therapy $^c$</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2111</td>
<td>Pharmaceutical Microbiology $^c$</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 2112</td>
<td>Pharmaceutical Immunology $^c$</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>Total Credit Hours</strong></td>
<td>15</td>
</tr>
</tbody>
</table>
### SEMESTER 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 2106</td>
<td>Chromatography, Electrochemistry &amp; Radiochemistry</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2107</td>
<td>Sterile Pharmaceutical Dosage Form Design</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2108</td>
<td>Pharmacognosy</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2109</td>
<td>Endocrine, Gastrointestinal Systems &amp; Therapy</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 2110</td>
<td>Antimicrobial &amp; Antineoplastic</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 2135</td>
<td>Cardiovascular, Renal Systems &amp; Therapy</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credit Hours: 13

### INTERMEDIATE II LEVEL

### SEMESTER 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 3101</td>
<td>Clinical Pharmacokinetics</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3102</td>
<td>Introduction to Clinical Pharmacy</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 3103</td>
<td>Pharmacotoxicology</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3104</td>
<td>Biostatistic &amp; Epidemiology</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3105</td>
<td>Solid Pharmaceutical Dosage Form Design</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 3106</td>
<td>Pharmaceutical Product Development</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credit Hours: 14

### SEMESTER 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 3107</td>
<td>Clinical Pharmacy and Pharmacotherapy</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 3108</td>
<td>Pharmaceutical Biotechnology</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3109</td>
<td>Evidence-Based Pharmacotherapy</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 3110</td>
<td>Specialty Pharmaceutical Dosage Form Design</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 3111</td>
<td>Extemporaneous Preparation</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 3112</td>
<td>Pharmacoeconomic and Drug Policy</td>
<td>2</td>
</tr>
</tbody>
</table>

Total Credit Hours: 15
### SEMESTER 1

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 4101</td>
<td>Research Methodology&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1</td>
</tr>
<tr>
<td>MWEF 4102</td>
<td>Ethics and Legislation in Pharmacy&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 4103</td>
<td>Clinical Pharmacy and Pharmacotherapy II&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 4104</td>
<td>Hospital Pharmacy Services&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 4105</td>
<td>Clinical Clerkship I&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 4106</td>
<td>Community Pharmacy&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3</td>
</tr>
<tr>
<td>MWEF 4107</td>
<td>Industrial Pharmacy &amp; Quality Assurance&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total Credit Hours:** 16

### SEMESTER 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MWEF 4108</td>
<td>Integrated Pharmacotherapy&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 4109</td>
<td>Research Project&lt;sup&gt;rc&lt;/sup&gt;</td>
<td>4</td>
</tr>
<tr>
<td>MWEF 4110</td>
<td>Pharmacy Management&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 4111</td>
<td>Clinical Clerkship II&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
<tr>
<td>MWEF 4112</td>
<td>Industrial Pharmacy &amp; Regulatory Control&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total Credit Hours:** 12

### Explanation of symbols:

- **U**: University courses
- **c**: Department core courses
- *****: Department core, compulsory and prerequisite courses
- **rc**: Students will conduct a research on a topic related to the various fields of pharmacy such as Pharmaceutical Chemistry, Basis of Therapeutics, Toxicology, Informatics, Clinical Pharmacy, Pharmaceutical Technology, Industrial Pharmacy, Pharmacoepidemiology etc.
### TABLE OF TOTAL CREDIT HOUR DISTRIBUTION IN EACH SEMESTER

The following timetable is an example of the total credit hour distribution for core/elective/university/co-curriculum courses that must be registered for each semester:

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>SEMESTER 1</th>
<th>SEMESTER 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEMENTARY</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>INTERMEDIATE I</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>INTERMEDIATE II</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>PROFESSIONAL</td>
<td>16</td>
<td>12</td>
</tr>
</tbody>
</table>

Proposed credit hours for elective/university/co-curriculum courses = [ ]

Total credit hours required for graduation:
- Faculty Courses = 116 credit hours
- University courses = [21 credit hours]
- Total = 137 credit hours

### COURSE EVALUATION

Student’s academic evaluations are based on:
- Continuous Assessments / CONASS
- End of semester examinations.

Continuous assessments could provide an overall feedback of a student’s performance throughout the course duration.

Distributions of marks are 30% for continuous assessments and 70% for end of semester examinations for all compulsory faculty courses and department electives except for the following courses:

- Computer Software Applications & Pharmacoinformatics: 100% continuous assessment
- English Language for Pharmacy: Continuous assessment 70% and end of semester exam 30%
- Research Methodology: 100% project preliminary report
- Research Projects: Project dissertation 50% and oral presentation 50%
- Hospital Pharmacy Services: Continuous assessment 40% and end of semester exam 40%
- Pharmacoeconomic and Drug Policy: Continuous assessment 40% and end of semester exam 40%
Examination procedures and their stipulated conditions are as stated in the General Handbook for Semester System, University of Malaya.

**GRADING SYSTEM**

The official university grading system is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Marks</th>
<th>Grade value</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>80-100</td>
<td>4.0</td>
<td>Distinction</td>
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<tr>
<td>A-</td>
<td>75-79</td>
<td>3.7</td>
<td>Distinction</td>
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<tr>
<td>B+</td>
<td>70-74</td>
<td>3.3</td>
<td>Credit</td>
</tr>
<tr>
<td>B</td>
<td>65-69</td>
<td>3.0</td>
<td>Credit</td>
</tr>
<tr>
<td>B-</td>
<td>60-64</td>
<td>2.7</td>
<td>Credit</td>
</tr>
<tr>
<td>C+</td>
<td>55-59</td>
<td>2.3</td>
<td>Pass</td>
</tr>
<tr>
<td>C</td>
<td>50-54</td>
<td>2.0</td>
<td>Pass</td>
</tr>
<tr>
<td>C-</td>
<td>45-49</td>
<td>1.7</td>
<td>Borderline Pass</td>
</tr>
<tr>
<td>D+</td>
<td>40-44</td>
<td>1.3</td>
<td>Borderline Pass</td>
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<tr>
<td>D</td>
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<tr>
<td>I</td>
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<td></td>
<td>Incomplete</td>
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<tr>
<td>S</td>
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<td>Satisfactory</td>
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<tr>
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**SPECIAL GUIDANCE CLASSES**

Special guidance classes will be organized for students who have been identified as requiring extra tutorial classes based on their continuous assessment marks. It is compulsory for the identified students to attend these classes which will be conducted in small groups before the end of semester examinations.

**MENTOR SYSTEM**

Every student (mentee) registered in the Pharmacy Programmed will be assigned to a mentor who is a full-time academic staff of the department. The mentor and mentee are required to meet for discussions at least once a semester where the time of meeting and issues discussed will be recorded. The mentors are responsible for advising the student about course registration and other academic matters as well as guiding the student if any personal issues arise during his/her stay in the department.
COURSE PROFORMA

ELEMENTARY LEVEL

SEMESTER 1

Course Code : MWEF 1111
Course Title : Basic Anatomy
Credit Hours : 2

Learning Outcomes:

At the end of the Basic Anatomy course, students will be able to:
1. Define the area of study of Anatomy and its language.
2. Explain why Anatomy is an important area of study.
3. Illustrate the parts of body system covered in the module.
4. Differentiate the reproductive organ between male and female.
5. Arrange in order of all the body parts that covered in the module.
6. Compare the differences between parts of the whole body system.

Course Synopsis : The contents of Basic Anatomy course is include introduction to anatomy, anatomic terms, cell structure and mitosis, epithelial tissue, connective tissue, blood cell, nerve system, musculoskeletal system, cardiovascular system, respiratory system, lymph system, digestive system, endocrine system, urinary system, male and female reproductive system. Students will be introduced to embryology with pre-embryo topic and development of embryo and fetal.

Assessment Method:
Continuous assessment: 30%
Exam : 70%

Course Code : MWEF 1117
Course Title : Physiology I
Credit Hours : 3

Learning Outcomes:

At the end of the Physiology I course, students will be able to:
1. Explain the basic functions of the human body.
2. Explain the specific functions of the cardiovascular system and all its regulatory mechanisms.
3. Explain the specific functions of the respiratory system and all its regulatory mechanisms.

Course Synopsis: The students will be exposed to the main physiological systems in the human body after first being introduced to the basics of physiology.

Assessment Method:
Continuous assessment: 30%
Exam : 70%
Course Code: MWEF 1101
Course Title: General Pharmaceutical Chemistry
Credit Hours: 3

Learning Outcomes:

At the end of the General Pharmaceutical Chemistry course, students will be able to:
1. Describe the states of matter.
2. Explain the principles associated with gases, liquids, solids and solutions.
3. Explain the concept of thermodynamics.
4. Explain the concept of kinetics.

Course Synopsis: The course provides a basic physical knowledge for the understanding of pharmaceutical sciences: physical and chemical properties underlying the action of drugs and their dosage forms.

Assessment Method:
Continuous assessments: 30%
Exam: 70%

Course Code: MWEF 1102
Course Title: Pharmaceutical Organic Chemistry
Credit Hours: 3

Learning Outcomes:

At the end of the Pharmaceutical Organic Chemistry course, students will be able to:
1. Recognize the functional groups and able to name the organic compound.
2. Describe the organic compound preparation.
3. Describe how the structure and the organic compound bonding influence the physical and chemical characteristics of the compound.
4. Describe the pharmaceutical usage of the organic compound.

Course Synopsis: This course gives an overview of aspects of organic chemistry that determine the properties of drugs that are important in pharmaceutical analysis and in drug action.

Assessment Method:
Continuous assessments: 30%
Exam: 70%

Course Code: MWEF 1103
Course Title: Computer Software Application & Pharmacoinformatics
Credit Hours: 1

Learning Outcomes:

At the end of the Farmacoinformatics course, students will be able to:
1. Define the area of study of Pharmacoinformatics and its language.
2. Explain why Pharmacoinformatics is an important area of study.
3. Illustrate the parts of computer and networking.
4. Differentiate the existing website nowadays.
5. Produce a static website on any pharmacy-related topics.
6. Compare the functions between available application suites.
**Course Synopsis**: The students will be introduced to: i) Practical on utilization of IT application, ii) Contributions of IT applications in health, iii) Introduction to pharmacoinformatics and its role on areas of health care

**Assessment Method:**
No Examination.
Continuous assessment.

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**Course Code**: MWEF 1201  
**Course Title**: Statistic for Pharmacy  
**Credit Hours**: 1

**Learning Outcomes**:

At the end of this module, students will be able to:

1. Demonstrate their understanding of mathematical statistics so that they are able to apply core mathematics skills to solve scientific and pharmaceutical problems.
2. Draw conclusions or make predictions from the data and assess the relative chances for certain events happening.
3. Apply appropriate statistical manipulations to data sets to analyze data from real research projects.


**Assessment Method**:
Continuous assessments : 30%  
Exam : 70%

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**SEMESTER 2**

**Course Code**: MWEF 1119  
**Course Title**: Physiology II  
**Credit Hours**: 3

**Learning Outcomes**:

At the end of the Physiology I course, students will be able to:

1. Explain the specific functions of the gastrointestinal system and all its regulatory mechanisms.
2. Explain the specific functions of the endocrine system and all its regulatory mechanisms.
3. Explain the specific functions of the renal system and all its regulatory mechanisms.
4. Explain the specific functions of the central nervous system and all its regulatory mechanisms.

**Course Synopsis**: The students will be exposed to the main physiological systems in the human body after first being introduced to the basics of physiology.
Assessment Method:
Continuous assessments : 30%
Exam : 70%

Course Code : MWEF 1105
Course Title : Heterocyclic Chemistry & Drug Discovery
Credit Hours : 2

Learning Outcomes:
At the end of the Pharmaceutical Organic Chemistry course, students will be able to:
1. Recognize and able to name heterocyclic compound.
2. Describe the physical characteristics, chemical reaction and use of heterocyclic compound.
3. Describe the basis of biological action of drugs.
4. Describe how physical-chemical factors influence the stability, pharmacokinetic and drug action.
5. Describe the strategies involved in drug development and interpreter data on “QSAR”.

Course Synopsis: The course deepens the understanding of organic chemistry of drugs and introduces the physicochemical concepts underlying drug action and design.

Assessment Method:
Continuous assessments : 30%
Exam : 70%

Course Code : MWEF 1106
Course Title : Biochemistry
Credit Hours : 3

Learning Outcomes:
At the end of the course, the student will understand
1. introductory cell biology,
2. classification, chemistry and metabolism of carbohydrates, lipids, amino acids, peptides and proteins,
3. bioenergetics,
4. enzymes,
5. vitamins,
6. nucleic acid,
7. relationship between the metabolic pathways in human,

Course Synopsis: This course provides a concrete basic knowledge about the interaction between chemical components that lead to development and function of structure, cell, tissue and organism, which are, formed as well structured supramolecule. In summary, this course study body defense mechanisms and its related diseases, and focus on general treatment for its related disorders.

Assessment Method:
Continuous assessments : 30%
Exam : 70%
Course Code: MWEF 1107  
Course Title: Physical Pharmacy  
Credit Hours: 3

**Learning Outcomes:**

At the end of the Physical Pharmacy Course, students will be able to:

1. Recognize the concept of disperse systems, surface phenomena, micromeritics and rheology.
2. Recognize factors influencing stability of disperse systems.
3. Recognize factors influencing solubility of pharmaceutical materials.
4. Determine pharmaceutical powder characteristics.
5. Determine flow properties of pharmaceutical materials.
6. Apply the principles of disperse system, surface phenomena, micromeritics and rheology in the formulation of pharmaceuticals dosage forms.

**Course Synopsis:** This course introduces to the students the principles of physical pharmacy required in the formulation of pharmaceutical dosage forms. Physicochemical properties of the pharmaceutical materials together with the methods to determine its properties are also included. The students will also perform practical related to the topics given in the theory, namely disperse system, surfaces properties, micromeritics and rheology.

**Assessment Method:**  
Continuous assessments: 30%  
Exam: 70%

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Course Code: MWEF 1108  
Course Title: Principles of Drug Action & Peripheral Nervous System & Therapy  
Credit Hours: 3

**Learning Outcomes:**

By the end of the course, the students should know about:

1. The principles of drug action based on concepts of pharmacodynamics and pharmacokinetics.
2. Agonists and antagonists of the autonomic and somatic nervous system.
3. Etiology and treatment for related disorder.

**Course Synopsis:** Students will be introduced to the principles of drug action and the basis of clinical trials for new drugs. This module also covers the process of transmission in the peripheral nervous system together with its etiology and the treatment of related diseases.

**Assessment Method:**  
Continuous assessments: 30%  
Exam: 70%
INTERMEDIATE I LEVEL

SEMESTER 1

Course Code: MWEF 2101
Course Title: Pharmaceutical Dosage Form Design for Liquid and Semi-Solid
Credit Hours: 2

Learning Outcomes:

At the end of the Pharmaceutical Dosage Form Design for Liquid and Semi-solid course students will be able to:
1. Recognize the concept of Liquid and Semi-solid Dosage forms.
2. Prepare Liquid and Semi-solid dosage forms extemporaneously.
3. Recognize the Industrial manufacturing process of Liquid and Semi-solid Dosage forms.
4. Identify new Liquid and Semi-solid dosage form in the market and those in research stage.
5. Perform compendia and non-compendia quality control (QC) tests for Liquid and Semi-solid dosage form.
6. Relate advice to other professional and public on usage and storage of Liquid and Semi-solid dosage form product.

Course Synopsis: Students will be introduced to the overall concept on Liquid and Semi-solid Dosage forms. Students will be introduced to equipments used in manufacturing and plan layout of the manufacturing plant for Liquid and Semi-solid Dosage forms. Students will be given the chance to use the equipment available for practicals in preparation of this dosage form. Students will do hands-on the command quality control tests and extemporaneous preparation of Liquid and Semi-solid Dosage forms.

Assessment Method:
Continuous assessments: 30%
Exam: 70%

Course Code: MWEF 2102
Course Title: Pharmaceutical Analysis
Credit Hours: 3

Learning Outcomes:

At the end of the Pharmaceutical Analysis course, students will be able to:
1. Recognize the concept of monographs and pharmacopeia standard.
2. Recognize atomic and molecular spectra.
3. Describe the principles of major analytical methods.
4. Apply the principles of major analytical methods to pharmaceutical analysis.

Course Synopsis: This course introduces the principles and practice of analytical techniques used in quality control of drug and dosage form, and in research and development.

Assessment Method:
Continuous assessments: 30%
Exam: 70%
Course Code : MWEF 2111  
Course Title : Pharmaceutical Microbiology  
Credit Hours : 3

Learning Outcomes:

At the end of the Pharmaceutical Analysis course, students will be able to:
1. Recognize basic microbiology, structure and shape of bacterial cell.  
2. Recognize the pathogenesis of microbial infections.  
3. Recognize the genetic of micro organism.  
4. Recognize the structure and the habitat, classification, reproduction and important of microbes as infectious agent which include fungi, yeast, virus and protozoa.  
5. Know basic parasitology, malarial parasites and others such as gastrointestinal and tissue protozoa’s, nematodes and helmintics.

Course Synopsis: This course provides the in-depth knowledge on the various aspects of microbiology, parasitology, general pathology, and basic epidemiology. It is an opportunity to learn about aseptic, isolation and identification techniques of micro-organisms and factors that affect its development.

Assessment Method:
Continuous assessments : 30%  
Exam : 70%

Course Code : MWEF 2112  
Course Title : Pharmaceutical Immunology  
Credit Hours : 1

Learning Outcomes:

At the end of the Pharmaceutical Immunology course, students will be able to:
1. Define the area of study of Immunology and its language.  
2. Explain why Immunology is an important area of study.  
3. Illustrate the components of immunology.  
4. Categorize the elements of four types of hypersensitivity.  
5. Collect any information related to immunology.  
6. Select the immunological test for cases involving antibody-antigen interaction.

Course Synopsis: The students will be introduced to the concept of the body’s immune system and shown how the body’s immune mechanism can be modified, physiologically and by pharmacotherapy. In summary, this module will explore the mechanism of the body’s immune systems and its inter-relationship between diseases. Students will be briefly exposed to the treatment of some common immune system disorders.

Assessment Method:
Continuous assessments : 30%  
Exam : 70%
Course Code : MWEF 2103
Course Title : Central Nervous System & Therapy
Credit Hours : 2

Learning Outcomes:

At the end of the Central Nervous System & Therapy course, students will be able to:
1. Recognize the classes of drug which have effect on central nervous system.
2. Describe the drug used in treatment of central nervous system disturbances.
3. Describe the drugs, which have potential of abuse.

Course Synopsis: Students will be introduced in an integrated manner to the anatomy, physiology, pharmacology and pathology of the central nervous system. In summary, this course requires students to understand the action of the classes of drugs that act on the central nervous system and to study the path physiology of the related disorders

Assessment Method:
Continuous assessments : 30%
Exam : 70%

Course Code : MWEF 2104
Course Title : Medicinal Chemistry
Credit Hours : 2

Learning Outcomes:

At the end of the Medicinal Chemistry course, students will be able to:
1. Describe the development of drugs which are important in the main classes.
2. Describe the biological activities in the main classes.
3. Describe the structure activity relationship of drugs in the main classes.

Course Synopsis: The course deepens the understanding of the physicochemical concepts underlying drug action and design.

Assessment Method:
Continuous assessments : 30%
Exam : 70%

Course Code : MWEF 2105
Course Title : Respiratory, Hematological System & Therapy
Credit Hours : 2

Learning Outcomes:

At the end of the Respiratory, Hematological System & Therapy course, students will be able to:
1. Define the system of respiratory and blood.
2. Describe the diseases that related to respiratory system and blood system.
3. Relate the pharmacotherapy of respiratory system and blood system to the related diseases.
4. Categorize type of lung diseases using lung function tests.
5. Manage the diseases that related to respiratory system and blood system.
6. Assess the type of diseases that related to respiratory system and blood system.
Course Synopsis: Students will be introduced to the anatomy, physiology and path physiology of the respiratory and hematology systems as well as the pharmacology of the drugs used to treat their disorders. Emphasis will be given to the rationalization of the drugs used for the treatment of respiratory and hematology disorders to provide the foundation for the students’ future studies in clinical pharmacy and therapeutics.

Assessment Method:
Continuous assessments : 30%
Exam : 70%

SEMESTER 2

Course Code : MWEF 2106
Course Title : Chromatography, Electrochemistry & Radiochemistry
Credit Hours : 2

Learning Outcomes:

At the end of the Chromatography, Electrochemistry & Radiochemistry course, students will be able to:
1. Explain the principles of chromatography.
2. Apply the principles of chromatography to pharmaceutical analysis.
3. Explain the concept of radiochemistry and its uses.
4. Explain the concept of electrochemistry and its uses.

Course Synopsis: The module is the continuation of Pharmaceutical Analysis, introducing the principles and technical analytical practice used in quality control of drugs and dosage form, and in research and development.

Assessment Method:
Continuous assessments : 30%
Exam : 70%

Course Code : MWEF 2107
Course Title : Sterile Pharmaceutical Dosage Form Design
Credit Hours : 2

Learning Outcomes:

At the end of the Sterile Pharmaceutical Dosage Form Design course, students will be able to:
1. Recognize the concept of Sterile Dosage forms.
2. Prepare Sterile Pharmaceutical Dosage Form extemporaneously using aseptic technique.
3. Recognize the Industrial manufacturing process and process control of Sterile Dosage forms.
4. Identify new Sterile Dosage forms in the market and those in research stage.
5. Perform compendia and non-compendia quality control (QC) tests for Sterile Dosage forms.
6. Relate advice to other professional and public on usage and storage Sterile Dosage forms.

Course Synopsis: Students will be introduced to the overall concept and calculations on Sterile Dosage forms. Students will be introduced to equipments used in manufacturing and plan layout of the manufacturing plant for sterile forms. Students will be given the chance to use the
equipment available for practicals in preparation of this dosage form. Students will do hands-on
the command quality control tests and extemporaneous preparation Sterile Dosage forms.

**Assessment Method:**
Continuous assessments : 30%
Exam : 70%

**Course Code** : MWEF 2108  
**Course Title** : Pharmacognosy  
**Credit Hours** : 2

**Learning outcomes:**
At the end of the Pharmacognosy course, students will be able to:
1. Explain the concepts of classification of plants.
2. Describe the production, factors affecting quality and quality control of plant drugs.
3. Describe the sources of plant drugs.

**Course Synopsis:** This course provides the overview of sources and development of drugs from plants and the sea. The concepts and techniques in standardization of plant drugs and aspects on quality control are introduced.

**Assessment Method:**
Continuous assessments : 30%
Exam : 70%

**Course Code** : MWEF 2109  
**Course Title** : Endocrine, Gastrointestinal Systems & Therapy  
**Credit Hours** : 2

**Learning Outcomes:**
At the end of the Endocrine, Gastrointestinal System & Therapy course, students will be able to:
1. Describe the mechanism on how drug react on the Endocrine, Gastrointestinal System & reproductive system.
2. Illustrate the basic etiology and pathophysiology of disturbances on the related systems.
3. Relate the manifestation of hyper and hypo secretion of hormone and enzyme with clinical disturbances, which are normally encountered.
4. Produce scientific report, answer case study and essay question on the related system.

**Course Synopsis:** Students will be introduced in an integrated manner to the anatomy, physiology, pharmacology and pathology of the endocrine (and reproductive system) and gastrointestinal systems. In summary, this course requires students to understand actions of the class of drugs used. Rational pharmacotherapy based on the path physiological disorders of the systems involved is discussed. This module will form the basis for the clinical pharmacy and therapeutic series later.

**Assessment Method:**
Continuous assessments : 30%
Exam : 70%
Course Code : MWEF 2110
Course Title : Antimicrobials & Antineoplastics
Credit Hours : 3

Learning Outcomes:

At the end of the Antimicrobial & Antineoplastic course, students will be able to:
1. Differentiate the structural differences of gram positive and gram negative organisms that are relevant to understanding the mechanism of action of antimicrobials in general and recognize the various methods used to test microbial sensitivity and describe the limitations of each method used
2. Describe and differentiate the various mechanism of action, the pharmacokinetic, adverse drug reaction and pertinent drug interaction of the various classes of antimicrobials (including sub-classes and generations), antiviral, and antimycobacterials, antiretroviral and antifungal.
3. Discuss cell cycle characteristics and tumor growth kinetics that influences chemotherapy effectiveness and discuss the importance of combination therapy
4. Describe the various mechanisms that are involved in affecting specific cellular functions involved in tumor growth that are relevant in antineoplastic therapy and to discuss the prevention and minimization of chemotherapy-induced adverse effects

Course Synopsis: The students will be taught in detail about the pharmacological properties of various antimicrobials and antineoplastics. Aspects of clinical utilization like indications, side effects and drug interactions will also be introduced.

Assessment Method:
Continuous assessments : 30%
Exam : 70%

Course Code : MWEF 2135
Course Title : Cardiovascular, Renal Systems & Therapy
Credit Hours : 2

Learning Outcomes:

At the end of this module, students will be able to:
1. Acquire a sound understanding of the action of drugs on the cardiovascular and renal system which is essential for the foundation of an effective career as a pharmacist.
2. Develop responsibility for independent learning.

Course Synopsis: Students will be introduced in an integrated manner to the anatomy function, physiology, pharmacology and the pathology of cardiovascular and renal system. This course requires students to understand the action of the classes of drugs that act on the central nervous system and to study the path physiology of the related disorders

Assessment Method:
Continuous assessments : 30%
Exam : 70%
SEMESTER I

Course Code : MWEF 3101
Course Title : Clinical Pharmacokinetics
Credit Hours : 2

Learning Outcomes:
At the end of the Clinical Pharmacokinetics course, students will be able to:
1. Define pharmacokinetics and the basic assumptions made in pharmacokinetic studies.
2. Define pharmacokinetic parameters, drug concentration versus time graph, half-life and elimination rate constant, various routes of drug elimination and orders kinetic process.
3. Determine the distribution rate constant and elimination rate constant of a drug.
4. Define pharmacodynamics and relate it to the pharmacokinetics.
5. Identify pathphysiologic changes that may affect drug disposition and the modification needed to be made in dosing regimens in these conditions.
6. Define therapeutic drug monitoring and to design dosage regimens based on the pharmacokinetic parameters of the drugs.

Course Synopsis:
Students will be introduced to pharmacokinetics parameters and the importance of precise drug concentrations in the plasma, the time course of administered drugs via different routes, linear and non-linear kinetics, basis of assigning different dose regimens, application of pharmacokinetics and drug monitoring in patient drug therapy.

Assessment Method:
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 3102
Course Title : Introduction to Clinical Pharmacy
Credit Hours : 3

Learning Outcomes:
At the end of the Introduction to Clinical Pharmacy course, students will be able to:
1. Describe the concept of clinical pharmacy and pharmaceutical care
2. Interpret the laboratory test results in monitoring patient’s clinical response
3. Illustrate the pathophysiologic basis of diseases
4. Discuss the fluid and electrolytes disorders, acid-base balance and adverse drug reactions
5. Discuss the interactions: drug-drug, drug-food, drug-nutrient, drug- herbs
6. Discuss the pathophysiology and rationale of treatment for:

Course Synopsis: Students will be introduced to patient orientated general clinical pharmacy and pharmaceutical care concept. Emphasis will be placed on a patient-focused, disease-oriented, drug therapy. Students will be exposed to pathophysiology of a disease. This will help them to make a rational decision on the most appropriate drug treatment for a patient.

Assessment Method:
Continuous assessment : 30%
Exam : 70%
Course Code : MWEF 3103
Course Title : Pharmacotoxicology
Credit Hours : 2

Learning Outcomes:

At the end of the Pharmacotoxicology course, students will be able to:
1. Describe the various mechanism and factors that cause toxicity.
2. Relate the clinical manifestation for each type of toxicity.
3. Develop management strategies for treatment poisoning cases.
4. Evaluate and apply toxicology knowledge for solving cases on toxicity.
5. Identify the need of toxicovigilance and able to conduct its principles upon public by way of case reporting in future.

Course Synopsis: This course exposes the students to pharmacotoxicological elements in the environment, health and regulatory. Students will be exposed to the toxicology application which is relevant to pharmacists, which is the clinical toxicology.

Assessment Method:
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 3104
Course Title : Biostatistic & Epidemiology
Credit Hourse : 2

Learning Outcomes:

At the end of this module, students will be able to:
1. Calculate and interpret measures of frequency (rates, ratios, incidence, prevalence).
2. Calculate and interpret measures of effect (relative risk, odds ratio, absolute risk NNT).
3. Describe advantages, disadvantages, elements of study design, and appropriate effect measures for various epidemiological study designs.
4. Identify potential sources of bias and their probable effect on the validity of a study or study findings (selection bias, information bias, confounding).
5. Describe how to detect and deal with confounding and effect modification (including stratification, randomization, matching).

Course Synopsis: Introduction to the study of biostatistics and epidemiology. Display and organization data. Introduction and exposition on the principal and methods that are used in pharmacoepidemiology field: observational and experimental study, survey study, case control, cohort study. Biases in study design, biases in sampling, biases in statistical analysis and interpretation. The focus will be on the usage of specific method, so that the students can evaluate critically on the published literature.

Assessment Method:
Continuous assessment : 30%
Exam : 70%
Course Code : MWEF 3105
Course Title : Solid Pharmaceutical Dosage Form Design
Credit Hours : 3

Learning Outcomes :

At the end of the Solid Pharmaceutical Dosage Form Design course, students will be able to:
1. Recognize the concept of Solid Dosage forms.
2. Prepare Solid Pharmaceutical Dosage Form extemporaneously.
3. Recognize the Industrial manufacturing process and process control of Solid Dosage forms.
4. Identify new Solid Dosage forms in the market and those in research stage.
5. Perform compendial and non-compendial quality control (QC) tests for Solid Dosage forms.
6. Relate advice to other professional and public on usage and storage Solid Dosage forms.

Course Synopsis : Student will be introduced to overall concept and characteristics of Solid Pharmaceutical Dosage Form. Student will be introduced to all basic equipments involved in the manufacturing of Solid Pharmaceutical Dosage Form. Student will be introduced to the concept of GMP plan layout for the manufacturing facility of solid dosage forms. Student will be trained hands-on in optimization of formulation and manufacturing of solid dosage forms using the facilities in the pilot plant. Student will be also trained to do quality control tests on solid dosage forms.

Assessment Method :
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 3106
Course Title : Pharmaceutical Product Development
Credit Hours : 2

Learning Outcomes :

At the end of the Pharmaceutical Product Development course, students will be able to:
1. Recognize the concept of value chain in development of pharmaceutical product.
2. Recognize all the four phases of clinical studies in drug development.
3. Apply the concept of preformulation in pharmaceutical product development.
4. Evaluate the solubility of drug in different system of the body to predict absorption capability of drug and the delivery of drug to the targeted area.
5. Identify interaction of the component which is used to make the pharmaceutical dosage form.
6. Perform stability study to predict shelf life of pharmaceutical in the accelerated manner or real time study
7. Relate advice to other professional on formulation of pharmaceutical dosage form for purpose of clinical trial of new drug.
8. Design bioavailable or bioequivalence study on various pharmaceutical dosage forms.

Course Synopsis : Student will be introduced to overall concept and principles in drug development. Student will be introduced to overall concept of preformulation and the influence of data from preformulation studies on the pharmaceutical dosage forms. This course will also introduce the various stability problem and to do stability study on pharmaceutical products. The concept of bioavailability and bioequivalence will also be discussed.

Assessment Method :
Continuous assessment : 30%
Exam : 70%
SEMESTER 2

Course Code: MWEF 3107
Course Title: Clinical Pharmacy and Pharmacotherapy I
Credit Hours: 3

Learning Outcomes:
At the end of the Clinical Pharmacy and Pharmacotherapy I course, students will be able to:
1. Describe basic concept of clinical pharmacy and employ the approach of problem-solving in patient care.
2. Describe the pathophysiology of these diseases, interpret the relevant signs and symptoms related to the manifestation of the diseases, explain the basic principles involved in the diagnosis of these diseases, underline the principles of management and identify monitoring parameters based on the therapy chosen.
3. Describe the pathophysiology involved in breast cancer, colon cancer and Hodgkin's and non-Hodgkin's lymphoma and discuss the role of chemotherapy in these cancers as well as pharmaceutical care issues.

Course Synopsis: Students will be introduced to concepts on clinical pharmacy and pharmaceutical care. Diseases that will be given emphasis include cardiovascular diseases, respiratory diseases, gastrointestinal diseases, infections, diseases of the central nervous system, and diseases of the ear, nose and throat as well as immunization.

Assessment Method:
Continuous assessment: 30%
Exam: 70%

Course Code: MWEF 3108
Course Title: Pharmaceutical Biotechnology
Credit Hours: 2

Learning Outcomes:
At the end of the Pharmaceutical Biotechnology course, students will be able to:
1. Describe the basic recombinant technology.
2. Explain the production, purification, quality control and formulation of therapeutic proteins.
4. Explain screening of genetic diseases.

Course Synopsis: This module enables students to understand the advances and application of biotechnology in pharmaceutical sciences with emphasis on novel drug discovery and the production of therapeutic proteins.

Assessment Method:
Continuous assessment: 30%
Exam: 70%
Course Code : MWEF 3109
Course Title : Evidence Based Pharmacotherapy
Credit Hours : 2

Learning Outcomes :

At the end of this module, students will be able to:
1. Understand the format, processes and application of systematic reviews and meta-analyses of randomised controlled studies.
2. Be able to critically appraise systematic reviews and meta-analyses according to quality criteria.
3. Understand the methodology and statistical concepts associated with systematic reviews and meta-analysis.
4. Be able to interpret the results of a systematic review and meta-analysis.
5. Have the knowledge and practical skills to undertake a simple systematic review.

Course Synopsis : Introduction to evidence-based pharmacotherapy (EBM), history and the important of EBM, steps in EBM, search and selection of evidence from article, outcome measures, systematic review, meta-analysis, NNT and NNH, critic of articles.

Assessment Method :
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 3110
Course Title : Specialty Pharmaceutical Dosage Form Design
Credit Hours : 3

Learning Outcomes :

At the end of the Specialty Pharmaceutical Dosage Form Design course, students will be able to:
1. Recognize the concept of Specialty Dosage forms.
2. Identify new Specialty Dosage forms in the market and those in research stage.
3. Relate the indication different concept of Specialty Dosage forms in modification of drug delivery and release.
4. Illustrate the use of various type of polymer in the formulation of Specialty Dosage forms.
5. Design a modified release dosage form such as slow release, sustain release or targeted release.
6. Discuss the design of the dosage form suitable for macromolecules in the delivery of therapeutic proteins and vaccine.
7. Recognize the different concept of dermal patch as Specialty Dosage forms.
8. Recognize the different concept of liposome as Specialty Dosage forms.
9. Recognize the different concept of pulmonary delivery system as Specialty Dosage forms.
10. Relate advice to other professional and public on type, usage and storage specialty Dosage forms.

Course Synopsis : Student will be introduced to overall concept and principles of specialty pharmaceutical product. Student will be introduced basic material and equipment in manufacturing of specialty products. Student will be introduced to various type of specialty product in the market or those which are still in the research pipeline.

Assessment Method :
Continuous assessment : 30%
Exam : 70%
Course Code : MWEF 3111
Course Title : Extemporaneous Preparation
Credit Hours : 3

Learning Outcomes:

At the end of the Extemporaneous Preparation Course, students will be able to:
1. Interpret the prescriptions.
2. Recognize formulations standard from BNF and BPC.
3. Recognize preparations in the extemporaneous preparations.
4. Recognizes the basic operation of dispensing.
5. Prepare extemporaneous dosage forms namely liquid, semisolid and solid preparations.
6. Apply correct labeling on the extemporaneous preparation.

Course Synopsis: Most of the content of this module involve practical session of dispensing of extemporaneous preparations of various dosage forms (solid, liquid, semi-solid). Students will be trained in reading and screening of prescriptions. Methods of dosage calculation, dispensing instructions and labeling of extemporaneous preparations.

Assessment Method:
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 3112
Course Title : Pharmacoeconomic and Drug Policy
Credit Hours : 2

Learning Outcomes:

At the end of this course, students will be able to:
1. identify, differentiate and compare between the different cost analyses available,
2. identify sources of data for cost analyses from the different study perspectives,
3. apply theory taught to practice in appraising pharmaco-economic related articles based on the ECHO model,
4. explain the function and role of a Drugs and Therapeutic Committee,
5. discuss the importance of drug formulary management and explain the important steps involved in drug selection, and
6. discuss the significance of a national health policy and a national drug policy.

Course Synopsis: Students will be exposed to the basic principles of health economics, pharmaco-economics and issues related to delivery of health care, health policy and national medicine policy. How pharmaco-economic information and the ECHO model (Economic Clinical Humanistic Outcomes) can assist in health care delivery will be explained. Students will also be taught the principles of drug formulary management and drug selection.

Assessment Method:
Continuous assessment : 40%
Exam : 60%
PROFESIONAL LEVEL

SEMESTER 1

Course Code : MWEF 4101
Course Title  : Research Metodology
Credit Hours : 1

Learning Outcomes :

At the end of the Research Metodology course, students will be able to:
1. recognize the basic principals on research,
2. recognize the types of research,
3. recognize the important of ethic in research,
4. Manage relevant information and data from various sources,
5. develop a written research protocol.

Course Synopsis : Student will be introduced to various types of research, for example research based on laboratory and technology and research based on social studies. Other than exposure to techniques in writing protocol and use of statistics softwares student will also be exposed to the important of ethics in research. This module will prepare the student to carry out the Research Project module MWEF 4109 in the next semester.

Assessment Method :
Dissertation “Penulisan Disertasi Akhir”: 100%

Course Code : MWEF 4102
Course Title  : Ethics and Legislation in Pharmacy
Credit Hours : 2

Learning Outcomes :

At the end of the Ethics and Legislation in Pharmacy course, students will be able to:
1. Recognize the characteristics of Malaysian Pharmacy Legislation.
2. Apply the different Pharmacy legislation in daily carrying on the business of pharmacy.
3. Apply the requirement of regulatory authority on different pharmaceutical product in Malaysia.
4. Perform drug enforcement or court presentation on drug cases in Malaysia.
5. Relate advice to other professional and the general public on legislation of drug and pharmaceutical in Malaysia.
6. Practice the professional ethics of pharmacist.

Course Synopsis : Students will be introduced to concept of basic laws and legislation followed by the understanding of the five Malaysian Pharmaceutical legislations. These legislation govern the control on chemical and pharmaceutical material, medicine, advertisement of medicine and medical matters and the professional ethics of pharmacist.

Assessment Method :
Continuous assessment : 30%
Exam : 70%
Course Code : MWEF 4103
Course Title : Clinical Pharmacy and Pharmacotherapy II
Credit Hours : 3

Learning Outcomes :

At the end of the Clinical Pharmacy and Pharmacotherapy II course, students will be able to:
1. Deduce pertinent clinical problems of patients from laboratory values and doctors notes in patient medical records.
2. Describe the pathophysiology of these diseases, interpret the relevant signs and symptoms related to the manifestation of the diseases, explain the basic principles involved in the diagnosis of these diseases, underline the principles of management and identify monitoring parameters based on the therapy chosen.
3. Define the various causes of acute and chronic kidney disease, discuss complications and suitable treatment options. Students will also be able to discuss immunosuppressive therapy in renal transplant and pharmaceutical issues associated with it.
4. Identify specific characteristics in these groups that need special attention with regards to optimizing drug therapy and minimizing adverse drug reactions.

Course Synopsis: This module is the continuation of the Clinical Pharmacy and Pharmacotherapy I (MWEF 3107). The focus of this module is to enable students to deepen their understanding of drug therapy in diseases of different organ systems.

Assessment Method :
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 4104
Course Title : Hospital Pharmacy Services
Credit Hours : 2

Learning Outcomes :

At the end of the Hospital Pharmacy Services course, students will be able to:
1. Interpret and critically evaluate prescriptions and other orders for medicines.
2. Interpret and apply the laws related to prescriptions and other orders for medicines.
3. Apply the concepts of medicine management or pharmaceutical care to conduct medication reviews for promoting quality use of medicines.
4. Recognize the importance of patient and medication safety through detecting, preventing and reporting of adverse drug reactions (ADR) and medication errors.
5. Perform pharmaceutical calculations on dosage of medications accurately.
6. Communicate clearly, considerately and sensitively with patients and their caretakers and the general public.
7. Communicate clearly, considerately and effectively, orally and written, with other healthcare professionals.
8. Use current technologies to search for new information, to adopt and integrate it in improving practice.
9. Use common software application in the pharmacy.
10. Interpret and critically evaluate prescriptions and other orders for medicines.
11. Interpret and apply the laws related to prescriptions and other orders for medicines.
**Course Synopsis**: A large proportion of this course involves therapeutic dispensing sessions and attachment to the various pharmacy services in the hospital. Students will be trained to screen prescription thoroughly to prevent any medication errors. Emphasis will be replaced on therapeutic uses of drugs, abnormal doses, drug-drug interactions and contraindications. Calculation of doses, method of dispensing and labeling pharmaceutical products available will be taught. Patient counseling on medications will be practiced by students through role-play and hospital attachment.

**Assessment Method**:
- Continuous assessment: 40%
- Exam: 60%

**Course Code**: MWEF 4105  
**Course Title**: Clinical Clerkship I  
**Credit Hours**: 2

**Learning Outcomes**:
At the end of the Clinical Clerkship I course, students will be able to:
1. Conduct a patient-history taking.
2. Describe symptoms, pathophysiology, laboratory tests, physical examinations, diagnoses, and prognoses of acute and chronic diseases.
3. Formulate a therapeutic management plan for drug and non-drug treatment for a particular disease state.
4. Utilize the problem-solving approach effectively and efficiently in the patient care setting and to develop pharmaceutical care issues.
5. Discuss the mechanisms of action of drugs, the pharmacokinetic properties, side effects, administration methods of drugs, potential drug-drug, drug-food, and drug-laboratory interactions.
6. Prepare and present educational information to course-mates and preceptors using evidence-based information.
7. Prepare and present educational information to course-mates and preceptors using evidence-based information.
8. Identify and describe pathophysiologic and pharmacodynamic changes that may affect drug disposition and the modification needed to be made in dosing regimens in specific population of patients especially in neonates, pediatric and geriatric patients.
9. Identify important clinical parameters in critically ill patients and discuss treatment options for managing critical and emergency cases.

**Course Synopsis**: This module consists of lectures and clerkship in the wards of University of Malaya Medical Centre. Students will be shown how to obtain drug therapy information from patient’s case notes. Students will also be given exposure on patient counselling under the supervision of respective preceptors.

**Assessment Method**:
- Continuous assessment: 30%
- Exam: 70%
Course Code : MWEF 4106
Course Title : Community Pharmacy
Credit Hours : 3

Learning Outcomes :

At the end of the Community Pharmacy course, students will be able to:

1. Describe the general structure and management of a community pharmacy and to relate to the current roles of community pharmacists in Malaysia compared to that in other countries. This includes the roles of community pharmacy in health screening and health promotion.
2. Identify and explain the physiological and psychological aspects of smoking, its harmful effects and the various methods to quit smoking.
3. Operate and interpret blood glucose and cholesterol tests, blood pressure, pregnancy and ovulation tests as well as understand the basis of these tests.
4. Conduct medication history taking systematically and to identify pharmaceutical care issues.
5. Recognize common disease states and make appropriate responses to the presented symptoms.
6. Recognize ethical dilemmas in healthcare and science and understand ways to manage taking into account the relevant laws.
7. Communicate effectively with the general public regarding drug therapy, wellness and health promotion.
8. Recognize and utilize the various types of ostomy products, bandages and dressings and also able to explain the methods of application.
9. Explain general nutrition for diabetic patients and compare the types of infant food products available in community pharmacies.

Course Synopsis :
The general structure of a community pharmacy and the roles of community pharmacists will be discussed as well as ways of promoting self-care among the general public. Screening tests such as blood glucose tests, cholesterol tests and pregnancy tests will be explained. Basis of human nutritional requirements, food additives, food allergies, drug-food interactions and related clinical effects will also be given. Minor health ailments and general principles of responding to symptoms presented in a community pharmacy will be discussed. Methods of counseling and interaction between patient-pharmacist will be emphasized. Students will also be attached to a community pharmacy for a few days to experience the job functions of a community pharmacist in Malaysia.

Assessment Method :
Continuous assessment : 30%
Exam : 70%

Course Code : MWEF 4107
Course Title : Industrial Pharmacy and Quality Assurance
Credit Hours : 3

Learning Outcomes :

At the end of the Industrial Pharmacy and Quality Assurance course, students will be able to:

1. Recognize the characteristics of Malaysian Pharmaceutical Industry.
2. Apply the Quality System enforced on pharmaceutical manufacturers, wholesalers and importers.
3. Apply the requirement of Quality System for analytical laboratories.
4. Apply the validation technique for process and analytical in pharmaceutical industry.
5. Relate advice to other professional and the general public on Quality System of pharmaceutical in Malaysia.

**Course Synopsis**: Students will be introduced to the overall concept of Quality Assurance. The needs of Quality Assurance in Pharmaceutical Industries and its applications. Visit to pharmaceutical plant will be carried out so that students can witness the application of Quality Assurance in the real situation.

**Assessment Method**:
- Continuous assessment : 30%
- Exam : 70%

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### SEMESTER 2

<table>
<thead>
<tr>
<th>Course Code</th>
<th>MWEF 4108</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Integrated Pharmacotherapy</td>
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<tr>
<td>Credit Hours</td>
<td>2</td>
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</tbody>
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**Learning Outcomes**:

At the end of the Integrated Pharmacotherapy course, students will be able to:
1. Discuss and explain the pathophysiology, the manifestation and the important laboratory parameters of each disorder.
2. Apply the clinical knowledge and to assess the role of monitoring of drug therapy in the management of the patient.
3. Develop the therapeutic strategies in solving drug-related problems from cases given.
4. Choose the best drug tailored to the individual patient need and explain the rationale of the selection of drugs.
5. Discuss the counseling points to be given to patients on the drug regimen given.

**Course Synopsis**: This module will help students to study, to monitor and to evaluate a patient’s drug therapy in detail. Clinical case presentation will further deepen students’ understanding on the optimization of drug therapy, acquire knowledge on current drug therapy through discussion, new use of old drugs, drug counselling techniques and patient education. A number of diseases will be selected as examples.

**Assessment Method**:
- Continuous assessment : 30%
- Exam : 70%

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<table>
<thead>
<tr>
<th>Course Code</th>
<th>MWEF 4109</th>
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<tbody>
<tr>
<td>Course Title</td>
<td>Research Project</td>
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<td>Credit Hours</td>
<td>4</td>
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**Learning Outcomes**:

At the end of the Research Project course, students will be able to:
1. use the research principals to collect data,
2. analysis of data effectively,
3. report the results effectively,
4. criticize research result base on published literatures,
5. produce a written dissertation following the set guidelines,
6. present orally the results of the research with the help of audiovisual.

**Course Synopsis**: Each student had already chosen their project title in the previous semester. With the guidance of the lecturer(s) involved, the student will collect and analyze their research data and write their dissertation. Each student will also do an oral presentation on their research outcome.

**Assessment Method**:
- Continuous assessment: 50%
- Exam: 50%

**Course Code**: MWEF 4110
**Course Title**: Pharmacy Management
**Credit Hours**: 2

**Learning Outcomes**:
At the end of the Pharmacy Management Course, students will be able to:
1. Recognize the concept of general management.
2. Recognize the basic components in the management.
3. Interpret the concept of management to improve organization performances.
4. Identify the importance requirements needed in the setting up of a new pharmacy.
5. Apply the management knowledge in the pharmacy profession.

**Course Synopsis**: Students will be introduced to management theory and their application in Pharmacy.

**Assessment Method**:
- Continuous assessment: 30%
- Exam: 70%

**Course Code**: MWEF 4111
**Course Title**: Clinical Clerkship II
**Credit Hours**: 2

**Learning Outcomes**:
At the end of the Clinical Clerkship II course, students will be able to:
1. Conduct a patient-history taking.
2. Describe symptoms, pathophysiology, laboratory tests, physical examinations, diagnoses, and prognoses of acute and chronic diseases.
3. Formulate a therapeutic management plan for drug and non-drug treatment for a particular disease state.
4. Utilize the problem-solving approach effectively and efficiently in the patient care setting and to develop pharmaceutical care issues.
5. Discuss the mechanisms of action of drugs, the pharmacokinetic properties, side effects, administration methods of drugs, potential drug-drug, drug-food, and drug-laboratory interactions.
6. Prepare and present educational information to course-mates and preceptors using evidence-based information.
7. Identify and describe pathophysiologic and pharmacodynamic changes that may affect drug disposition and the modification needed to be made in dosing regimens in specific population of patients especially in neonates, pediatric and geriatric patients.

8. Identify important clinical parameters in critically ill patients and discuss treatment options for managing critical and emergency cases.

Course Synopsis: This module is a continuation of the Clinical Clerkship I (MWEF 4105). The focus of this module is on ward visit and clinical case presentation by the students in order to further improve their understanding on drug therapy.

Assessment Method:
Continuous assessment : 30%
Exam : 70%

Code Course : MWEF 4112
Course Title : Pharmacy Industrial and Regulatory Control
Credit Hours : 2

Learning Outcomes:

At the end of the Pharmacy Industrial and Regulatory Control course, students will be able to:

1. Recognize the trend of Malaysian Pharmaceutical Industry.
2. Recognize the trend of Global Pharmaceutical Industry.
3. Apply the trend and forecast of the global pharmaceutical industry to the Malaysian Scene.
4. Apply the technique and requirement of research in production of Generic products.
5. Recognize the requirement of up-scale production after a laboratory formulation for new product.
6. Register drug with the National Pharmaceutical Control Bureau
7. Relate advice to other professional and the general public on Drug registration System in Malaysia.

Course Synopsis: Students will be introduced to the overall characteristics of the pharmaceutical industries in Malaysia and in comparison with advance countries. Student will be visiting at least one pharmaceutical institution involving in manufacturing or testing. Student will be introduced to “hands-on” registration of drugs and regulatory control. Student will be introduced to principles of drug development pertaining to research, laboratory formulation development, “scaling-up” and mass manufacturing.

Assessment Method:
Continuous assessment : 30%
Exam : 70%
Services
Academic Services

Tan Sri Danaraj Medical Library

The Medical Library on the 3rd floor of the faculty contains around 100,000 volumes and subscribes to around 2,000 current journals. An extensive collection of reference works, printed indexing and abstracting services are maintained. It permits access to a number of databases both on-line and on compact disk in the various fields of medicine and allied health care. In addition, the library offers cassette-tape, tape-slide, video-viewing and discussion room facilities, inter-library loan, photocopying and document binding services. Branch libraries are at the Klang and Kuala Langat District Complexes. These libraries aim to provide good quality and friendly service in a pleasant environment. Care of all library material is essential to maintaining this standard. Instructions regarding the use of facilities should be obtained from library staff.

The Main UM Library situated in the main campus contains more than 1 million volumes, a microfilm processing unit and photostating facilities.

Library times:
Mon-Fri: 0800 – 2230 hr
Sat & Sun: 0800 – 1530 hr

Multi-Disciplinary Laboratories
A special facility at FOM is the multidisciplinary laboratories commonly known as the MD Labs (I and II). As their name implies, these labs serves various purposes which include wet and dry laboratory practicals, tutorials, self-directed learning stations, structured paraclinical examinations as well as for tutorial and self learning. It also serves as a home-based for the students.

Computer Laboratories
The computer laboratories equip with a total of 90 computers are available to students of UMMC for various computer-aided learning programmes. These laboratories are opened up to 11.30 pm on working days.
Pharmaceutical Pilot Plant

The Pharmaceutical Pilot Plant of the Department of Pharmacy, is the first of its kind and capacity in South East Asia, available in a teaching institution. Built and operated in accordance to cGMP, the customized equipment have a capacity to handle 20kg to 60kg batches sizes of ingredients and powders. The plant is capable of producing 70,000 tablets and 30,000 capsules per hour.

A complete range of equipment to carry tests In Process Quality Control (IPQC) and Quality Control (QC) of the products are also available. The Department has also laboratory scale equipment to do preliminary R&D formulation before scaling up to the industrial level at the Pilot Plant.

GPCR Screening / Liquid Handling Facilities

The search for therapeutic agents acting via G-protein coupled receptors (GPCRs) has proved to be highly successful, and it is estimated that over 65% of all modern drugs are targeted at GPCRs. It is expected this will continue to be a fertile area of pharmaceutical research. The staff and postgraduate students are actively involved in the search of potential receptor active constituents from natural products using competitive receptor binding techniques. The laboratory is equipped with TopCount NXT microplate reader, fluorescence microplate reader, FilterMate cell harvester, MultiProbe II automated liquid handling system, microplate washer and reagent dispensers, cell culture facility, chromatography facility, etc. Recent findings include identification several novel muscarinic receptor modulators and anti-methicillin resistant \textit{Staphylococcus aureus} compounds.

To complement this, the group is also involved in the design of novel systemic and oral polymeric delivery systems for therapeutic agents.
Medical Illustrations and Multimedia Development Unit

This unit is a centre for the production of media and resources to support teaching and research at the UMMC. Comprehensive photographic and graphic services are offered as well as a fully equipped video unit. Other services include management of the Faculty’s lecture theatres and audiovisual equipment.

University Book Store (Medical)

Located on the ground floor of Menara Timur in UMMC, the Medical Book Store stocks a comprehensive supply of medical textbooks in all medical disciplines. It also stock student’s clinical learning aids and stationaries.

PHARMSOC

You can have a complete information on the Pharmacy Society and their activities in the FOM website.

http://www.ummc.edu.my/pharmsoc/Homepage.html
Campus facility

- ACCOMMODATION
- STUDENT S/SHIP AND LOAN
- STUDENT HEALTH SERVICES
- STUDENT COUNSELING SERVICES
- UNIVERSITY BOOK STORE
- PEKANSISWA
- SHOPS/PHARMACY/FLORIST
- BANKING SERVICES
- MAIN LIBRARY
- SPORTS AND RECREATION
- MOSQUE
Student Services

Accommodation
The Ibnun Sina Residential College houses 700 Faculty of Medicine students. A branch hostel in Klang, next to the Hospital is specially for medical students in Phase III. Full board and lodging is provided at reasonable rates.

Further information for on-campus or off-campus accommodation can be obtained from the Student Affairs Section, UM.

Student Scholarship/Loans Unit
This unit, located in the Student Affairs Section, UM handles applications for scholarship/loans from national, state and statutory bodies, including private companies and philanthropic organizations.

Student Health Clinic
Mon-Fri: 0800 – 1230
Sat: 0800 – 1245 hr
No service on Sun/public holiday

This service is available to all students throughout the year. The clinic is situated in the 12th Residential College building in UM

UM Medical Centre
A 24-hour emergency medical service is available to all UM students at the Accident & Emergency Unit of the UM Medical Centre.

Student Counseling Service
Mon-Fri: 0900 – 1230hr
Sat: 0900 hr

A confidential counseling service available for all UM students, is offered by the Student Development Section, which is situated at the Perdanasiswa Complex.

The UM Medical Center provides an added counseling service for its students. For further information, please refer to current faculty notices on Counseling Service.

Pekan Buku (0900 – 1700 hr)
A large bookshop is strategically placed at the Perdanasiswa complex (C). Prices are competitive and the range is wide. A branch outlet for medical books is available on the ground floor of the main hospital block.

Pekansiswa (0900 – 1700 hr)
A minimarket on the ground floor of the Baktisiswa building is available for foodstuff, porting and electrical goods.

Mosque
Masjid Al-Rahman is situated at the main entrance to UM. A surau is situated adjacent to the hospital.

**Shops - Pharmacy, Fruitshop & Florist**  
These shops are available on the first and ground floor of the main hospital block.

**Banking Facilities**  
A CIMB is situated on the ground floor of the new administrative building in the campus. A CIMB and a Bank Islam auto-teller machine is available on the ground floor of the main hospital block. A Bank Simpanan Nasional branch is situated in the Siswarama building on the main campus. Bank Islam is situated on the ground of the new examination building in the campus.
PLAN OF GROUND FLOOR, PHARMACY BUILDING

- Emergency Staircase
- LIFT
  - Male Toilet
  - Female Toilet
- Pilot Plant
- Deduster Room
- Dispensing Lab
- Multipurpose Lab
- Preparation Room/Store
- Bidara Hall
- LLN Sub-station
- Emergency Staircase
- Emergency Door
PLAN OF 3rd FLOOR, PHARMACY BUILDING

Emergency Staircase
- Lecturer's Office
- Lecturer's Office

Clinical Pharmacy Unit
- Lecturer's Office
- Lecturer's Office

Pharmaceutical Technology Unit
- Lecturer's Office
- Lecturer's Office

Scientific Basis of Therapeutics Unit
- Lecturer's Office
- Lecturer's Office

Pharmaceutical Chemistry Unit
- Lecturer's Office
- Lecturer's Office

Cold Room
Culture Room
Extraction Room
Instrument Room
Perkin Elmer Room (Rm 1)
Perkin Elmer Room (Rm 2)

Emergency Staircase

LIFT
- Prayer Room
- Female Toilet

- Store
- Male Toilet

- Lecturer's Office
- Lecturer's Office

Pharmacy Practice Unit
- Lecturer's Office
- Lecturer's Office

Meeting Room
General Office
Secretary Room
Head of Department's Office

Pathway
- Store for Stationeries
- Store for Scientific Equipment

Seminar Room 5 (Mengkudu)
Seminar Room 1 (Bitangor)

Corridor

Emergency Staircase

Seminar Room 4 (Raflesia)
Seminar Room 3 (Pegaga)
Seminar Room 2 (Cengkhi)