لائحة برنامج B. Pharm

وحدة ضمان الجودة

كلية:الصيدلة فرع:القنطرة

Faculty of Pharmacy

B. Pharmacy Program

CONTENTS

1. INTRODUCTION

The Faculty of Pharmacy and Pharmaceutical Industries was established in 2005 to be the first academic institute in Sinai Peninsula that offers a prestigious professional programme leading to the degree of Bachelor of Pharmacy and carries out academic and scientific research that serve the interests of the local community.

1.1. Vision Statement

To be a first-class academic institute, providing excellence and innovation in teaching, research and service to the community.

1.2. Mission Statement

The Faculty of Pharmacy educates pharmacy practitioners to meet the pharmaceutical care needs of the community. The Faculty is committed to improving human health through the development of new drugs, optimization of drug use, and improvement of pharmaceutical services. It is also committed to advancing pharmaceutical technology to strengthen Egypt economy.

1.3. Objectives

- To develop programme based on the knowledge and skills necessary to contribute to the health care scheme of the country.
- To pursue an admission policy aimed at accepting only a limited number of students each year to ensure individual attention.
- To facilitate the acquisition of knowledge, skills and attitudes by promoting the methods of self-learning and substituting traditional lectures by discussions, debates, seminars and projects.
- To prepare drug specialists and experts that would serve as vital links between physicians and patients, and who will influence the industrial development of drugs and pharmaceuticals.
- To promote the continued self-development of faculty members and administrative staff.

2- THE FACULTY DEPARTMENTS

Department of Pharmaceutical Chemistry
Department of Pharmaceutics
Department of Pharmacology and Toxicology
Department of Pharmacognosy
Department of Microbiology and Immunology
Department of Pharmacy Practice
Department of Biochemistry

3. DEGREE AWARDED

Sinai University (SU) awards its graduates, at the recommendation of the Faculty of Pharmacy, the degree of Bachelor of Pharmacy, after successful completion of the approved study programme.

4. ADMISSION POLICY

Sinai University complies with the admission regulations and requirements of the Egyptian Supreme Council of Universities (ESCU) and Private Universities Council of the Ministry of Higher Education. However, new applicants may have to pass an admission test. According to the result of the admission test, a maximum of three non credit courses may be required by SU before getting enrolled in study.

4.1. Transfer Admission Rules

- The faculty from which the student is to be transferred should be accredited by Egyptian Supreme Council of Universities (ESCU).

- Transfer students from other Egyptian or foreign universities must fulfill all Sinai University Faculty of Pharmacy admission requirements.
- Courses completed at another faculty are evaluated for equivalency to SU Faculty of Pharmacy courses before being exempted.
- The transferred student must study at least 60% of the syllabus of the B.Pharm degree in SU.

4.2. Admission of Post-baccalaureate Students

- Graduates from the Faculties of Medicine, Veterinary Medicine, Dentistry, Nursing, Science and Agriculture are admitted on space-available basis.
- Courses completed at another faculty are evaluated for equivalency to the SU Faculty of Pharmacy courses before being exempted.
- Student must study at least 60% of the syllabus of the B.Pharm degree in Sinai University.

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5. PROGRAMME STRUCTURE

The Bachelor degree programme in pharmacy is a 5 year full-time extended undergraduate degree. It combines the study of up-to-date courses that cover a wide spectrum that blends the pharmaceutical sciences with professional practice. The programme is structured into two semesters each year, each semester made up of 15 weeks. An optional 7-week summer semester intensive programme is also offered.

The Faculty of Pharmacy implements the credit hour system. A credit hour represents an hour of lectures (L) or two hours of practical or tutorial (P/T) classes a week for a period of 15 weeks.

6. LEARNING AND TEACHING CONCEPTS

The Bachelor of Pharmacy programme is designed to integrate the teaching, learning and understanding of pharmaceutical sciences in the context of pharmacy practice. It also helps students to develop key skills in problem solving, teamwork, numeracy, communication and information technology.

The programme is delivered through lectures, practical classes, group tutorials, seminars, research assignments and external cooperation with the community and industry.

7. COURSE REGISTRATION

At the beginning of each semester, students select the courses from the list of the offered courses. Academic advisers are available to offer advice and guidance during the registration of courses. Selection of courses for any given year is conditional on the successful completion of the prerequisite courses of the preceding academic year. Students are allowed to add or drop a course or more during a specified time every semester.

7.1. Course Load

- The Course load is the number of registered credit hours per student each semester.
- The academic load in each semester ranges from 12 to 20 credit hours.
- The academic load in the summer semester is not more than 9 credit hours.
- Credits acquired by the student are those of passed courses from the registered academic load.

7.2. Add, Drop and Withdrawal

Students are allowed to add or drop a course or more during a specified time every semester. Students are allowed to withdraw from a course prior to a deadline set by the university. The course will carry a grade of "W" and students will be allowed to retake the course when available. Students who withdraw after the deadline will not be allowed to sit for the relevant exam and will carry a grade of "F" for that course.

8. ATTENDANCE

Students are expected to attend the university on a full-time basis during each semester. Attendance is checked during lectures, seminars, tutorials and labs. Students must attend at least 75% of the lectures, tutorials and practical labs. If absence in a course exceeds the allowed percentage (25%) during the first ten weeks of the semester (either excused or unexcused), the student will not be allowed to sit for the exam of the relevant subject and will carry grade of "F".

9. LANGUAGE OF INSTRUCTION

English is the official language of instruction; all communication, lectures, coursework, and documentation are performed using the English language.

Some courses can be thought in Arabic on the recommendation of the relevant department and the agreement of the faculty and university council

10. ASSESSMENT

The assessment measures the outcome of students' learning in terms of knowledge acquired, understanding developed, and skills gained

Student's performance is assessed by:

- Written examination which may contain short-answer questions, essay-type questions and/or calculations
- Assessed coursework, including problem solving, essay writing, multiple choice tests, essays and or/laboratory report writing, research project reports, poster or oral presentation.

10.1. Grading Scheme:

Grades are a measure of the performance of a student in an individual course.

Grade	Definition	Marks (%)	GPA
A+	Excellent	≥95%	4
A		90 - < 95%	4
A-		85 - <90%	3.7
B+	Very Good	80 - <85%	3.3
B		75 - <80%	3
C+	Good	70 - <75%	2.7
C		65 - <70%	2.4
D	Satisfactory	60 - <65%	2
F	Fail	<60%	0

Grade Point Average (GPA)

- The University calculates for each student, both at the end of each grading period and cumulatively, a grade point average (GPA) based on the ratio of grade points earned divided by the number of credits earned with grades of A-F (including pluses and minuses). Both the periodic and cumulative GPA appears on each student record.
- The semester GPA of the student is the weighted average of the grade points acquired in the courses passed in that particular semester.

Registration symbols that do not carry grade points or credit:

- I: Incomplete: a temporary grade that indicates the requirement of a course has not been completed. The instructor assigns "I" when, due to extraordinary circumstances, the student was prevented from completing the requirements of a course.
- S: Represents achievement that is satisfactory.
- U: Represents achievement that is unsatisfactory
- T: Transfer, indicates credits transferred from another institution.
- W: Withdrawal prior to deadline indicates a student has officially withdrawn from a course.

Progression of Students

The student cannot progress to the next course without having passed its pre-requisite courses.

11. FAILURE IN COURSES

- Students who fail to attend the final exam.
- Students who fail to achieve 30 % of the marks in the final written exam.
- Students who fail to achieve 60 % of the total marks.
- Students who fail a required course are allowed to repeat this course.
- Students who fail an elective course are allowed to repeat this course or to take another elective course.

12. ACADEMIC DIFFICULTY

Once a student's cumulative GPA falls below "٢", he/she is placed under academic probation.

A student who fails to maintain a minimum cumulative GPA of "٢" for four consecutive semesters or for a total of six semesters will be dismissed from the faculty**.**

13. LEAVE OF ABSENCE

Students may apply for a leave of absence of two consecutive semesters or for a total of three non- consecutive semesters.

14. INCOMPLETE GRADE

If a student fails to attend the final exam for any emergency or exceptional circumstances, the Faculty Council may approve an incomplete "I" grade. Course work grades are transferred to students who are given an "I" grade. Students must complete the course requirements within one year of the final examination of the following term of enrolment, If not submitted by that time; the "I" will automatically change to an "F".

15. GRADUATION

Students are awarded the Bachelor of Pharmacy degree upon completion of:

1) The requisite number of credit hours (173 credit hours) with a cumulative GPA equivalent to 1 or above.
2) Students should complete at least 300 hours of training, under supervision of a faculty member, in pharmacy settings such as community or hospital pharmacies or in pharmaceutical industries approved by the faculty council. Students commence training after the end of the third year.

Honor Degree

The student is awarded an honor degree if his final cumulative GPA is not less than 3.00 provided that his GPA never has been less than 3.00 in any semester of study. Moreover, he should have not failed in any course during his study

16. ACADEMIC DISCIPLINARY ACTIONS

Any form of cheating, plagiarism, impersonation, evidence of concealment or fabrication or results are resisted and opposed by the University.

Students enrolled in the university are subjected to the rules, regulations and the disciplinary actions stated in the law No. 49, 1972 concerning the regulations of Egyptian Universities and the integral laws.

17- STUDY PLAN

The Bachelor degree of Pharmacy is granted to students who successfully complete a minimum of 173 credit hours divided as follows:

I- University requirements: 10 credit hours.
II- Faculty requirements: 157 credit hours.
III- Elective courses: 6 credit hours.

I- University Requirements

The University offers elective courses from which the students are free to select 10 credits.

Course Code*	Course Title	Credit Hours*			Examination Marks*			Total Marks	Exam Time
		L	P/T	Total	CW	P	F.E.		
SSE E44	English Language (1)	2	-	2	50	-	50	100	2
SSE E45	English Language (2)	2	-	2	50	-	50	100	2
ITC E01	Introduction to Computer Science	2	1	3	35	25	40	100	2
SSG E01	Human rights	1	-	1	50	-	50	100	1
SSG E02	Sinai History	1	-	1	50	-	50	100	1
SSG E03	Scientific Thinking	1	-	1	50	-	50	100	1
SSG E04	Study Skills	2	-	2	50	-	50	100	2
SSG E05	Arabic Language	2	-	2	50	-	50	100	2
SSG E06	Introduction to Future Studies	2	-	2	50	-	50	100	2

* **Course Code:** (e.g. PHC 1101)
1. The first and second Letters represent the faculty offering the course.
2. The third Letter: represents the department offering the course.
3. The first digit represents the level of study (from 1 – 5) or E represents elective course.
4. The second digit represents the semester number (1 or 2).
5. The third and fourth digits represent the course number.

*L= lecture, P/T= practical/tutorial, CW= Course work, P= practical, F.E. =Final exam

II- Faculty Requirements

The Faculty Departments and the subjects studied within each are as follows:

1- Department of Pharmaceutical Chemistry

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHC 1101	General & Physical chemistry	2	1	3
PHC 1102	Organic Chemistry (1)	2	1	3
PHC 1203	Organic Chemistry (2)	2	1	3
PHC 1204	Analytical Chemistry	2	1	3
PHC 2105	Organic Chemistry (3)	2	1	3
PHC 2106	Pharmaceutical Analytical Chemistry	2	1	3
PHC 3207	Pharmaceutical Chemistry (1)	2	1	3
PHC 4108	Pharmaceutical Chemistry (2)	2	1	3
PHC 4209	Instrumental Analysis	2	1	3
PHC 5110	Pharmaceutical Quality Control	2	1	3
PHC 5111	Drug Design	2	-	2
Total		22	10	32

2- Department of Pharmacognosy

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHG 1101	Botany & Medicinal plants	2	1	3
PHG 1202	Pharmacognosy (1)	2	1	3
PHG 2103	Pharmacognosy (2)	2	1	3
PHG 2204	Phytochemistry	2	1	3
PHG 3105	Production & Manufacture of Medicinal plants	2	-	2
PHG 3206	Chromatography and Separation Techniques	2	1	3
Total		12	5	17

3- Department of Pharmaceutics

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHT1101	Pharmacy Orientation & Basic Pharmaceutics	2	-	2
PHT1202	Physical Pharmacy	2	1	3
PHT 2103	Pharmaceutics (1)	2	1	3
PHT 2204	Pharmaceutics (2)	2	1	3
PHT 3105	Pharmaceutics (3)	2	1	3
PHT 3206	Pharmaceutics (4)	2	1	3
PHT 4107	Design of Dosage forms & Quality Assurance	2	1	3
PHT 4108	Biopharmaceutics & Pharmacokinetics	2	1	3
PHT 4209	Hospital Pharmacy	2	-	2
PHT 5110	Industrial pharmacy (1)	2	1	3
PHT 5211	Industrial Pharmacy (2)	2	1	3
MTH 1101	Mathematics & Statistics	2	-	2
Total		24	9	33

4- Department of Microbiology and Immunology

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHM 2201	Microbiology	2	1	3
PHM 2202	Parasitology	2	1	3
PHM 2203	Pathology	2	1	3
PHM 3104	Pharmaceutical Microbiology	2	1	3
PHM 4205	Medical Microbiology and Immunology	2	1	3
PHM 5106	Introduction to Biotechnology	1	-	1
PHM 5207	Public Health	2	-	2
Total		13	5	18

5- Department of Pharmacology and Toxicology

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHO 1201	Anatomy & Histology	2	1	3
PHO 2102	Physiology	2	1	3
PHO 3103	Pathophysiology	2	-	2
PHO 3104	Pharmacology (1)	2	1	3
PHO 3205	Pharmacology (2)	2	1	3
PHO 4106	Pharmacology (3)	2	1	3
PHO 4207	Toxicology &forensic chemistry	2	1	3
PHO 5108	Biological screening and Biostatistics	2	1	3
PHO 5209	First Aid	1	-	1
Total		17	7	24

6- Department of Biochemistry (affiliated to Department of Pharmacology)

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHB 3101	Biochemistry (1)	2	1	3
PHB 3202	Biochemistry (2)	2	1	3
PHB 4103	Clinical Biochemistry	2	1	3
PHB 4204	Nutrition	1	-	1
Total		7	3	10

7- Department of Pharmacy Practice

Course Code	Course Title	Credit Hours		
		L	P/T	Total
PHP 2201	Pharmacy Administration	2	-	2
PHP 3202	Pharmaceutical Marketing	2	-	2
PHP 4103	Therapeutics (1)	2	1	3
PHP 4204	Therapeutics (2)	2	1	3
PHP 5105	Clinical Pharmacy (1)	2	1	3
PHP 5206	Clinical Pharmacy (2)	2	1	3
PHP 5207	Drug information	2	-	2
PHP 5208	Community Pharmacy	2	1	3
PHP 5209	Pharmaceutical Ethics and Legislation	1	-	1
SSG E07	Psychology & Communication Skills	1	-	1
Total		18	5	23

III- Elective Courses

The faculty of Pharmacy offers elective courses from which the students are free to select six credits.

Course Code	Course Title	Credit Hours			**Prerequisite**
		L	P/T	Total	
PHC E13	Advanced Instrumental Analysis	2	-	2	PHC 4209 Instrumental Analysis
PHC E14	Computer Aided Drug Design	2	-	2	PHC 4108 Pharmaceutical Chemistry (2) PHC5111 Drug Design
PHG E09	Natural Products	2	-	2	PHG 2204 Phytochemistry
PHG E10	Alternative Medicinal Therapies	2	-	2	PHG 2204 Phytochemistry
PHG E11	Quality control of Herbal Drugs	2	-	2	PHG 2204 Phytochemistry
PHT E13	Radiopharmaceuticals	2	-	2	PHC1101 General & Physical chemistry PHO3205 Pharmacology (2)
PHT E14	Applied Industrial Pharmacy	2	-	2	PHT 5211 Industrial Pharmacy (2)
PHT E 15	Cosmetic Preparations	2	-	2	PHT 2204 Pharmaceutics (2)
PHT E16	Advanced Pharmaceutics	2	-	2	PHT2103 Pharmaceutics (1) PHT2204 Pharmaceutics (2) PHT3105 Pharmaceutics (3) PHT 3206 Pharmaceutics (4)
PHM E08	Antimicrobial Agents	2	-	2	PHM 4203 Medical Microbiology & immunology
PHM E09	Biological Standardization	2	-	2	PHM 3102 Pharmaceutical Microbiology
PHM E10	Bioinformatics	2	-	2	PHB 3202 Biochemistry (2) PHM4203 Medical Microbiology & Immunology
PHO E11	Veterinary Pharmacology	2	-	2	PHO 4106 Pharmacology (3)
PHO E12	Clinical Toxicology	2	-	2	PHO 4208 Toxicology & forensic chemistry
PHO E13	Drug Abuse	2	-	2	PHO 4106 Pharmacology (3)

18- PROGRAMME CURRICULUM
Level 1
Semester (1)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Tota. marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHC 1101	General & Physical chemistry	2	1	3	No Prerequisite	35	25	40	100	2
PHC 1102	Organic Chemistry (1)	2	1	3	No Prerequisite	35	25	40	100	2
PHG 1101	Botany & Medicinal plants	2	1	3	No Prerequisite	35	25	40	100	2
PHT 1101	Pharmacy Orientation & Basic Pharmaceutics	2	-	2	No Prerequisite	50	-	50	100	2
MTH 1101	Mathematics & Statistics	2	-	2	No Prerequisite	50	-	50	100	2
ITC E01	Introduction to Computer Science	2	1	3	No Prerequisite	35	25	40	100	2
SSE E44	English Language (1)	2	-	2	No Prerequisite	50	-	50	100	2
Total		14	4	18						

L= lecture, P/T= practical/tutorial, CW= Course work, F.E. =Final exam

Semester (2)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Tota. marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHC 1203	Organic Chemistry (2)	2	1	3	PHC 1102 Organic Chemistry (1)	35	25	40	100	2
PHC 1204	Analytical Chemistry	2	1	3	No Prerequisite	35	25	40	100	2
PHT 1202	Physical Pharmacy	2	1	3	PHC 1101 General & physical chemistry	35	25	40	100	2
PHG 1202	Pharmacognosy (1)	2	1	3	PHG 1101 Botany & Medicinal plants	35	25	40	100	2
PHO 1201	Anatomy & Histology	2	1	3	No Prerequisite	35	25	40	100	2
SSE E45	English Language (2)	2	-	2	SSE E44 English Language (1)	50	-	50	100	2
Total		12	5	17						

Level 2
Semester (3)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHC 2105	Organic Chemistry (3)	2	1	3	PHC 1203 Organic Chemistry (2)	35	25	40	100	2
PHC 2106	Pharmaceutical Analytical Chemistry	2	1	3	PHC 1204 Analytical Chemistry	35	25	40	100	2
PHG 2103	Pharmacognosy (2)	2	1	3	PHG 1101 Botany & Medicinal plants	35	25	40	100	2
PHT 2103	Pharmaceutics (1)	2	1	3	PHT 1202 Physical Pharmacy	35	25	40	100	2
PHO 2102	Physiology	2	1	3	PHO 1201 Anatomy & Histology	35	25	40	100	2
SSG E03	Scientific Thinking	1	-	1	No Prerequisite	50	-	50	100	1
SSG E01	Human rights	1	-	1	No Prerequisite	50	-	50	100	1
Total		12	5	17						

L= lecture, P/T= practical/tutorial, CW= Course work, F.E. =Final exam

Semester (4)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHT 2204	Pharmaceutics (2)	2	1	3	PHT 2103 Pharmaceutics (1)	35	25	40	100	2
PHM 2201	Microbiology	2	1	3	No Prerequisite	35	25	40	100	2
PHM 2202	Parasitology	2	1	3	No Prerequisite	35	25	40	100	2
PHM 2203	Pathology	2	1	3	PHO 2102 Physiology	35	25	40	100	2
PHO 3103	Pathophysiology	2	-	2	PHO 2102 Physiology	50	-	50	100	2
PHG 2204	Phytochemistry	2	1	3	PHG 1202 Pharmacognosy (1) PHG 2103 Pharmacognosy (2)	35	25	40	100	2
Total		12	5	17						

Level 3
Semester (5)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total. marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHB 3101	Biochemistry (1)	2	1	3	PHC 2105 Organic Chemistry (3)	35	25	40	100	2
PHM 3104	Pharmaceutical Microbiology	2	1	3	PHM 2201 Microbiology	35	25	40	100	2
PHP 2201	Pharmacy Administration	2	-	2	No Prerequisite	50	-	50	100	2
PHO 3104	Pharmacology (1)	2	1	3	PHO 3103 Pathophysiology	35	25	40	100	2
PHT 3105	Pharmaceutics (3)	2	1	3	PHT 2103 Pharmaceutics (1)	35	25	40	100	2
SSG E07	Psychology & Communication Skill	1	-	1	No Prerequisite	50	-	50	100	1
PHG 3105	Production and Manufacture of Medicinal Plants	2	-	2	PHG 2204 Phytochemistry	50	-	50	100	2
SSG E02	Sinai History	1	-	1	No Prerequisite	50	-	50	100	2
Total		14	4	18						

L= lecture, P/T= practical/tutorial, CW= Course work, F.E. =Final exam

Semester (6)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHB 3202	Biochemistry (2)	2	1	3	PHB 3101 Biochemistry (1)	35	25	40	100	2
PHC 3207	Pharmaceutical Chemistry (1)	2	1	3	PHC 2105 Organic Chemistry (3) PHC 2106 pharmaceutical analytical chemistry	35	25	40	100	2
PHO 3205	Pharmacology (2)	2	1	3	PHO 3104 Pharmacology (1)	35	25	40	100	2
PHT 3206	Pharmaceutics (4)	2	1	3	PHT 2103 Pharmaceutics (1)	35	25	40	100	2
PHG 3206	Chromatography and Separation Techniques	2	1	3	PHC 2106 Pharmaceutical Analytical Chemistry	35	25	40	100	2
PHP 3202	Pharmaceutical Marketing	2	-	2	No Prerequisite	50	-	50	100	2
Total		12	5	17						

Level 4
Semester (7)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHB 4103	Clinical Biochemistry	2	1	3	PHB 3202 Biochemistry (2)	35	25	40	100	2
PHO 4106	Pharmacology (3)	2	1	3	PHO 3104 Pharmacology (1)	35	25	40	100	2
PHC 4108	Pharmaceutical chemistry (2)	2	1	3	PHC 2105 Organic Chemistry (3) PHC 2106 pharmaceutical analytical chemistry	35	25	40	100	2
PHT 4107	Design of Dosage forms & Quality Assurance	2	1	3	PHT 2103 Pharmaceutics (1) PHT 2204 Pharmaceutics (2) PHT 3105 Pharmaceutics (3) PHT 3206 Pharmaceutics (4)	35	25	40	100	2
PHT 4108	Biopharmaceutics & pharmacokinetics	2	1	3	PHO 2102 Physiology PHT 2103 Pharmaceutics (1) PHT 2204 Pharmaceutics (2) PHT 3105 Pharmaceutics (3) PHT 3206 Pharmaceutics (4	35	25	40	100	2
PHP 4103	Therapeutics (1)	2	1	3	PHO 3205 Pharmacology (2) COREQUISITE: PHO 4106 Pharmacology (3) PHM 2202 Parasitology PHM 2203 Pathology	35	25	40	100	2
Total		12	6	18						

L= lecture, P/T= practical/tutorial, CW= Course work, F.E. =Final exam

Semester (8)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHP 4204	Therapeutics (2)	2	1	3	PHP 4103 Therapeutics (1)	35	25	40	100	2
PHO 4207	Toxicology & forensic Chemistry	2	1	3	PHO 3205 Pharmacology (2) PHO 4106 Pharmacology (3)	35	25	40	100	2
PHM 4205	Medical Microbiology and Immunology	2	1	3	PHM 2201 Microbiology	35	25	40	100	2
PHT 4209	Hospital Pharmacy	2	-	2	PHT 2103 Pharmaceutics (1) PHT 2204 Pharmaceutics (2) PHT 3105 Pharmaceutics (3) PHT 3206 Pharmaceutics (4)	50	-	50	100	2
PHB 4204	Nutrition	1	-	1	PHB 3202 Biochemistry (2)	50	-	50	100	1
PHC 4209	Instrumental Analysis	2	1	3	PHC 2106 Pharmaceutical Analytical Chemistry PHC 2105 Organic Chemistry (3)	35	25	40	100	2
	Elective	2		2		50	-	50	100	2
Total		13	4	17						

Level 5
Semester (9)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHP 5105	Clinical Pharmacy (1)	2	1	3	PHP 4103 Therapeutics (1)	35	25	40	100	2
PHO 5108	Biological screening and Bioassay	2	1	3	PHO 3205 Pharmacology (2) PHO 4106 Pharmacology (3)	35	25	40	100	2
PHC 5110	Pharmaceutical Quality Control	2	1	3	PHC 4209 Instrumental Analysis	35	25	40	100	2
PHC 5111	Drug Design	2	-	2	PHC 3207 Pharmaceutical chemistry (1) PHC 4108 Pharmaceutical Chemistry (2)	50	-	50	100	2
PHT 5110	Industrial Pharmacy (1)	2	1	3	PHT 2103 Pharmaceutics (1) PHT 2204 Pharmaceutics (2) PHT 3105 Pharmaceutics (3) PHT 3206 Pharmaceutics (4)	35	25	40	100	2
PHM 5106	Introduction to Biotechnology	1	-	1	PHM 2201 Microbiology	50	-	50	100	1
	Elective	2	-	2		50	-	50	100	2
Total		13	4	17						

L= lecture, P/T= practical/tutorial, CW= Course work, F.E. =Final exam

Semester (10)

Course code	Course Title	Credit hours			Prerequisite	Examination Marks*			Total marks	Exam Time (hrs)
		L	P/T	Total		CW	P/T	F.E		
PHP 5206	Clinical Pharmacy (2)	2	1	3	PHP 4103 Therapeutics (1)	35	25	40	100	2
PHT 5211	Industrial Pharmacy (2)	2	1	3	PHT 5110 Industrial Pharmacy (1)	35	25	40	100	2
PHP 5207	Drug information	2	-	2	PHO 4207 Toxicology & forensic Chemistry	50	-	50	100	2
PHM 5207	Public Health	2	-	2	PHM 4205 Medical Microbiology and Immunology	50	-	50	100	2
PHO 5209	First Aid	1	-	1	PHO 3205 Pharmacology (2) PHO 4106 Pharmacology (3)	50	-	50	100	2
PHP 5208	Community Pharmacy	2	1	3	PHO 3205 Pharmacology (2) PHO 4106 Pharmacology (3)	35	25	40	100	2
PHP 5209	Pharmaceutical Ethics and Legislation	1	-	1	No Prerequisite	50	-	50	100	1
	Elective	2	-	2		50	-	50	100	2
Total		14	3	17						

19- COURSE DESCRIPTIONS

PHC 1101 General and Physical Chemistry

Matter; its properties and measurement, atomic structure, chemical bonding and intermolecular forces. Gases, liquids, and solids. Qualitative analysis of cations and anions. Chemical kinetics (Zero, first, pseudo and second order reactions, activation energy).

PHC 1102 Organic Chemistry (1)

Nature of organic compounds and structures. Nomenclature, aliphatic (saturated and unsaturated) hydrocarbons. Organic reactions (substitutions, additions, eliminations and condensations). Chemistry of the different organic classes: halogenated hydrocarbons, alcohols, ethers, carbonyl compounds and amino acids.

PHC 1203 Organic Chemistry (2)

Chemistry of aromatic organic compounds including aromatic hydrocarbons, halogen and nitro derivatives, amines and diazonium salts, phenols, aromatic carboxylic acids, aromatic aldehydes, aromatic ketones , sulfonic acids and polynuclear aromatic hydrocarbons. Introduction to use of spectroscopic methods in organic chemistry (UV, IR, MS, NMR).

PHC 1204 Analytical Chemistry

Review of fundamentals, titrimetry, acid-base equilibria and titratons, nonaqeous titrations, complexation equilibria and titration, oxidation-reduction and precipitation equilibria and titration and gravimetry.

PHC 2105 Organic Chemistry (3)

Stereochemistry and Stereoisomerism. Organic reaction mechanisms (substitutions, additions, eliminations and condensations). Heterocyclic compounds including monocyclic monoheteroatom and fused bicyclic compounds.

PHC 2106 Pharmaceutical Analytical Chemistry.

Introduction to electrochemical methods of analysis including potentiometry, conductimetry. Introduction to spectroscopic analysis, Refractometry and polarimetry, Spectrophotometry. Water analysis and Lipds.

PHC 3207 Pharmaceutical Chemistry (1)

Introduction to pharmaceutical and medicinal chemistry, physicochemical properties of drugs in relation to biological action, chemotherapeutic agents, synthetic antimicrobial agents, malaria chemotherapy, antibacterial antibiotics and cancer chemotherapy.

PHC 4108 Pharmaceutical Chemistry (2)

Central nervous system depressants, central nervous system stimulants, cardiovascular agents, analgesic agents, steroids and related compounds.

PHC 4209 Instrumental Analysis
This course includes, instrumental methods of analysis, ultraviolet and infrared spectroscopy, NMR, Mass spectroscopy, flame and Atomic absorption spectroscopy.

PHC 5110 Pharmaceutical Quality Control
Control and quality assurance, inprocess control and validation, sampling process prior to analysis, analysis of raw materials and finished products using reference standards, drug stability and stability testing, performance and calibration of instruments used in pharmaceutical analysis, validation of analytical methods and ISO and BSI.

PHC 5111 Drug Design
Structure activity relationships, quantum mechanical approaches, molecular connectivity, pharmacophore generation, molecular modification by isosteric replacement. Natural products leading to new pharmaceuticals, mathematical treatment serving prediction, defining sites and targets, molecular modeling, prodrugs and drug latentiation.

PHC E13 Advanced Instrumental Analysis
Applications of instrumental methods of analysis (ultraviolet and infrared spectroscopy; NMR; mass spectrometry; atomic absorption spectroscopy, GC-MS, X-ray spectroscopy) to pharmaceutical compounds.

PHC E14 Computer Aided Drug Design
Computer graphic, Molecular modeling, molecular mechanics, molecular dynamics, quantum mechanics, and docking.

PHG 1101 Botany and Medicinal Plants
Cytology, morphology and anatomy of different plant organs, plant physiology, classification and systematic botany of some lower and higher plants with examples of medically active plants. A general introduction of medicinal plants (cultivation, collection, drying, packing, storage, and adulteration) and drugs from plant origin are also covered.

PHG 1202 Pharmacognosy (1)
An introduction to Pharmacognosy and a detailed pharmacognostical study of drugs composed of leaves, flowers, barks, galls and woods and unorganized drugs.

PHG 2103 Pharmacognosy (2)
Detailed pharmacognostical study of drugs composed of seeds, fruits, herbs, rhizomes and roots and animal drugs

PHG 2204 Phytochemistry
Devoted to the study of plants therapeutically active principles; volatile oils, carbohydrates, resins and resin combinations, bitter principles, tannins, alkaloids and glycosides, in addition to hallucinating and anticancer drugs.

PHG 3105 Productions and Manufacture of Medicinal Plants
Commercial production of medicinal plants, cultivation, collection, drying, preservation, extraction, quality control, and final packing of entire or powdered forms or extracts.

PHG 3206 Chromatography and Separation Techniques
Introduction and modes of separation, gel filtration and permeation, ion exchange chromatography, type properties, ion exchange and non-ion exchange manifestation and applications. High-pressure liquid chromatography, gas liquid chromatography and their applications.

PHG E09 Natural Product
Separation, isolation and identification of biologically-active compounds from plants, animals and microorganisms.

PHG E10 Alternative Medicinal Therapies

The study of herbal preparations, nutritional supplements, and homeopathies. The study of herbal preparations that are widely used by the general public as self-selected OTC (over-the-counter) products/NPDs (nonprescription drugs). Food items for therapeutic, disease prevention, or health promotion purposes. Emphasis will be placed on the role of the pharmacist to help clients make an informed choice and counsel them on the selection of useful and safe products.

PHG E11 Quality Control of Herbal Drugs

Quality control of herbal drugs including; type of herbal medicine, side effects and toxicity.

PHT 1101 Orientations to Pharmacy and Basic Pharmaceutics

Topic covered: History of pharmacy practice with particular emphasis on Arab impact, pharmacy orientation, roles of the pharmacist, pharmacy organizations, systems of medicine. Introduction to pharmaceutical dosage forms, routes of drug administration, types of prescriptions, and Incompatibilities.

PHT 1202 Physical Pharmacy

Rheology, surface and interfacial phenomena, solubility and dissolution rat, types of solutions and their properties.

PHT 2103 Pharmaceutics (1)

Includes, pharmaceutical calculation, liquids dosage forms include pharmaceutical solutions, colloids and macromolecular system, suspensions and emulsions.

PHT 2204 Pharmaceutics (2)

Formulation, preparation and evaluation of semisolids and related dosage forms, transdermals, topical preparations and suppositories.

PHT 3105 Pharmaceutics (3)

Formulation, preparation and evaluation of solid dosage forms, powders, micromeritics granules, tablets, tablet coating, hard capsules, soft capsules and microencapsulation.

PHT 3206 Pharmaceutics (4)

Sterile dosage forms; parentral medications, ophthalmic preparations and radiopharmaceuticals.

PHT 4107 Design of Dosage forms and Quality Assurance

Preformulation studies, rate reactions, drug and drug products stability, pharmaceutical ingredients, quality control and assurance organization, inspection control, documentation, environmental control.

PHT 4108 Biopharmaceutics and Pharmacokinetics

Factors affecting drug absorption, factors affecting drug elimination, product development, pharmacokinetics models, pharmacokinetics following I.V. administration, pharmacokinetics following oral dosage forms, kinetics of drug absorption, clearance, bioavailability and bioequivalency, absolute and relative bioavailability, assessment of bioavailability and correlation between in vitro dissolution and in vivo absorption.

PHT 4209 Hospital Pharmacy

Organization and structure of a hospital pharmacy, hospital pharmacy department and dispensing, hospital formulary, radio-pharmaceuticals and nuclear pharmacy, surgical dressing and sutures, plasma substitute, central sterile supply unit and its management, manufacture of sterile and non-sterile products, I.V. admixtures, pharmacy and therapeutic committee and manufacturing units in hospitals.

PHT 5110 Industrial Pharmacy (1)
Heat transfer, materials for plant constructions, packaging materials, evaporation, drying, extraction, crystallization, filtration, centrifugation and distillation.

PHT 5211 Industrial Pharmacy (2)
Mixing, emulsification, homogenization, size reduction, size separation, size enlargements, good manufacturing practice, safety measures and validation.

PHT E13 Radiopharmaceuticals
Basic principles involving the application of radiation and radioactive compounds in medical diagnosis, therapy and industry. Rationale for utility, preparation and quality control of radiopharmaceuticals. Biologic effects of various radiations.

PHT E14 Applied Industrial Pharmacy
Good manufacturing practice regulations and quality assurance with emphasis on process validation and sampling techniques.

PHT E15 Cosmetic Preparations
The principles and methods used in the design, preparation and quality criteria for different categories of cosmetic products.

PHT E16 Advanced Pharmaceutics
Topic covered includes: Drug targeting, novel drug delivery systems, Pharmaceutical biotechnology.

PHM 2201 Microbiology
Eukaryotic and prokaryotic cells, nomenclature of microorganisms, structure and form of the bacterial cells, spores, mycoplasma or PPLO, actinomycetes. Rickettsiae, viruses, eukaryotic microorganisms (fungi), bacterial genetics, molecular genetics, physiology of microorganisms, the growth curve microbial metabolism.

PHM 2202 Parasitology
Introduction, protozoology; amoebae; ciliate; flagellates; blood and tissue sporozoa. Medical helminthology; nematodes; cestodes; trematodes, and arthopods

PHM 2203 Pathology
The study of the aetiology, principle diagnostic features, and main characteristics of diseases of the cardiovascular system, respiratory tract, central nervous system and other important organ systems of the body.

PHM 3104 Pharmaceutical Microbiology
Sterilization, sterilization indicators, sterility testing, microbial contamination of pharmaceutical products, aseptic area, the microbiological quality of pharmaceuticals. Antimicrobial agents: classification, mechanism of action of antimicrobial drugs, drug combination, resistance of microorganisms to antimicrobial agents, assessment of a new antibiotic, microbiological assay of antibiotics, microbiological assay of vitamins, amino acids and growth factor, mode of action of nonantibiotic antimicrobial agents. Chemical disinfectants, antiseptics and preservatives.

PHM 4205 Medical Microbiology and Immunology
Topic covered include: Bacteriology; gram positive bacteria, the mycobacterium group, gram negative bacteria, chlamydia and rickettsiae. Mycology: Ringworm, mo niliasis, maduromycosis and sporotrichosis. Virology: RNA viruses and DNA viruses
Immunology: Host parasite relationship, Non-specific and specific immunity, Mechanism of protective immunity, Hypersensitivity and in vitro antigen antibody reactions, Autoimmunity and auto-immune disease, Immune deficiency disorders, Transplantation immunology, Cancer immunology, Immunological tolerance.

PHM 5106 Introduction to Biotechnology
This course provides the principle knowledge in cell biology, an introduction to molecular biological tools (PCR, Southern, Northern and Western blots, microarrays and DNA sequencing), an overview of biotechnology and its role in industrial applications (genetic engineering, bioremediations and phytoremediations), a basic ethical conception mechanism within biotechnology and update the students with the rapid development within the area of gene therapy, stem cells and small RNAs.

PHM 5207 Public Health
Introduction, epidemiology, communicable and non-communicable diseases, control of communicable diseases, immunization, infections, occupational medicine, environmental health, water-borne and food borne diseases, milk-born diseases, nutrition and family health, environmental pollution, waste water treatment, waste disposal.

PHM E08 Antimicrobial Agents
Factors affecting choice of antimicrobial agent, types of antimicrobial compounds, types of antibiotics and synthetic antimicrobial agents, clinical uses of antimicrobial drugs, manufacturing of antibiotics and other synthetic antimicrobial agents, principle methods of assaying antibiotics, mechanism of action of antibiotics, bacterial resistance to antibiotics, disinfection policy, evaluation of non-antibiotic antimicrobial agents and mode of action of non antibiotic antimicrobial agent.

PHM E09 Biological Standardization
Assays of hormones, sera, vaccines, toxins, antitoxins, antibiotics and vitamins.

PHM E10 Bioinformatics
The course focuses on current bioinformatics tools and databases, and application of bioinformatics in genomics and molecular biology

PHO 1201 Anatomy and Histology
Introduction, skeletal system, muscular system, articular system, fascia, cardio-vascular system, lymphatic system, nervous system, digestive system, respiratory system, uro-genital system, endocrine glands, cytology, blood, structure of liver, spleen, lungs, kidney, lymph nodes, cardiac muscle, stomach, intestine and aorta.

PHO 2102 Physiology
Introduction (cell, body water, homeostasis, transport of materials), nervous system (autonomic nervous system), neuron structure and function (reflex arc), cardiovascular system, blood, respiratory cycle, gastrointestinal system, reproduction system, renal system, endocrine glands and body temperature regulation.

PHO 3103 Pathophysiology
Introduction to pathophysiology, cell injury, inflammation and immune response, autonomic nervous system in health and disease, endocrine disorders, pancreatic disorders, fluid and electrolyte imbalance, neoplasia and cancer, vascular and haematological disorders, disease of urinary, pulmonary and digestive systems.

PHO 3104 Pharmacology (1)
The general principles of pharmacology, pharmacokinetics, pharmacodynamics, receptor theory and drug interaction. This is followed by a comprehensive study of drugs acting on the autonomic nervous system, cardiovascular system and renal system.

PHO 3205 Pharmacology (2)
Drugs affecting the central nervous system, the gastrointestinal system, the respiratory system, the blood and blood forming elements, autacoids as well as local anaesthetics.

PHO 4106 Pharmacology (3)
The course deals with the chemotherapy of microbial diseases, neoplastic diseases and parasitic infestation and the study of hormones and hormone antagonists.

PHO 4207 Toxicology and Forensic Chemistry
Introduction to toxicology, general principles of toxicology, disposition of toxicants, poisoning with common drugs, poisoning with common chemicals, chemical and biological warfare agents, radiation and radioactive material toxicity, general management of poisoning, clinical toxicology of specific drug groups, management of envenomation with natural toxins, maternal, foetal and neonatal toxicity.

PHO 5108 Biological Screening and Biostatistics
Principles of biological assays, screening procedures of drugs, biological evaluation of new drugs, screening of drugs acting on the autonomic nervous system, screening and biological assay of neuromuscular blockers, histamine and antihistaminic drugs, serotonin, analgesics (narcotics and non-narcotics), antidepressants, antipsychotics, cardiac glycosides, local anaesthetics, anticonvulsants, antibilharzial drugs, anti-arrhythmic drugs, anti-inflammatory drugs, drugs acting on gastrointestinal functions and hormones. Biostatistics.

PHO 5209 First AID
Basic Life Support, bleeding, shock, medical emergencies, poisoning, bones and joints, soft tissue injuries, rescue and transportation.

PHO E11 Veterinary Pharmacology
The commonly used veterinary biological and pharmaceutical preparations; general sanitary and management procedures for the prevention and control of livestock diseases; a brief review of infectious diseases and animal parasites.

PHO E12 Clinical Toxicology
The objective of the course is to relate the basic pharmacological and toxicological principles to the treatment of the poisoned patient. Several of the compounds commonly encountered in the accidental or intentional poisoning are to be covered. The students will be able to recognize signs and symptoms of poisoning, characterize the type and extent of intoxication and develop a specific modern management plan.

BHO E13 Drug Abuse
The course focuses on the general basics and concepts of neurochemistry of addiction, the pharmacology of mind-altering drugs, mechanisms underlying the psychoactive effects of both CNS stimulants and depressants, how to manage various drug addicts both pharmacologically and psychologically.

PHB 3101 Biochemistry (1)
The course covers subcellular organelles and membranes. Biological and biochemical properties of proteins, nucleic acids, carbohydrates, lipids, and enzymes. Biological oxidations, and related biochemical processes. Basic concepts of replication, transcription and translation

PHB 3202 Biochemistry (2)
This course includes metabolism of carbohydrates, lipids, and Nitrogen, regulation of metabolism, integration of metabolism.

PHB 4103 Clinical Biochemistry

The course covers the analysis of blood and body fluid tests for the functional state of liver, kidney, heart, bone, gastrointestinal tract, endocrine glands, and interpretation of the results in relation to health and disease.

PHB 4204 Nutrition

The course focuses on the kinds and amounts of macronutrients (carbohydrates, fat, and proteins) and micronutrients (vitamins and minerals) that are needed to maintain optimal health and prevent chronic disease in adults.

PHP 2201 Pharmacy Administration

Capital requirements, purchasing and financing a new pharmacy, location analysis, pharmacy layout design, space management for pharmacy practice, inventory purchasing and control, OTC merchandising, advertising, interpersonal communication, inter-professional relations and patient consultation

PHP 3202 Pharmaceutical Marketing

Designed to get student acquainted with the most recent techniques for marketing of drugs. Topics covered include: Marketing concepts, business strategies, consumer and organizational market, marketing research, product management, advertising, promotion and personal selling.

PHP 4103 Therapeutics (1)

Student should learn cardiovascular system, including introduction to cardiovascular system, dyslipidemia, ischemic heart disease, hypertension and congestive heart failure. Endocrine system, including diabetes mellitus. Inflammatory disorder including rheumatoid arthritis, osteoarthritis and gout. Respiratory system disorders including asthma, chronic obstructive pulmonary disease and cystic fibrosis.

PHP 4204 Therapeutics (2)

Student should learn gastrointestinal system disease including gastroesophygalreflux disease, peptic ulcer disease, inflammatory bowel disease and pancreatitis. Thyroid gland disorders. Adrenal gland disorders. Hematological system disorders including anemia and sickle cell anemia. Dermatological system including psoriasis and common skin disorders. Antimicrobial regimen selection.

PHP 5105 Clinical Pharmacy (1)

Student should learn introduction to cancer: breast cancer ,colorectal cancer, acute lymphocytic leukemia ,acute myloid leukemia , Hodgkin's lymphoma ,Non –Hodgkin's lymphoma , Neuroplastoma, Medalloblastoma ,Bacterial infection, Viral infection and Fungal infection

PHP 5206 Clinical Pharmacy (2)

Student should learn Epilepsy , Parkinson disease ,Pain management, Alzheimer disease, Schizophrenia , Bipolar disorders, Generalized Anxiety ,Panic disorders, social anxiety disorders , Attension-Deffient hyperactivity disorders and Supportive care.

PHP 5207 Drug information

Drug information and poison information centers, drug-drug interactions, drug-food interactions, drug disease interactions, and intravenous incompatibilities. Use of the Internet for drug and research information.

PHP 5208 Community Pharmacy

The student should learn introduction to community pharmacy , management skills in the pharmacy ,Multidiscplinary pharmaceutical work ,Symptoms management ,Responding Symptoms in community pharmacy ,External OTC lecture.

PHP 5209 Pharmaceutical Ethics and Legislation

A detailed presentation of law that governs and affects the practice of pharmacy, legal principles for non-controlled and controlled prescriptions, over-the-counter drug requirements, opening new pharmacies, opening medical stores, opening factories, opening scientific offices, medicine registration, pharmacies and medicine stores management. Pharmacist duties and responsibilities, pharmacist-patient relationship, patient's rights and ethical principles and moral rules.

SSE E44 English Language (1)

Training in reading, comprehension, basic grammatical rules, writing and translation. The course adopts a systematic approach to proper essay writing, such as idea development, paragraph structure, introductions, support, and conclusions.

SSE E45 English Language (2)

Oral presentation and creative report writing skill on relevant subjects, namely, term papers and library research work. Students should learn how to express themselves concisely and to the point. Train the students to understand medical and pharmaceutical terminologies, medical abbreviations, medical idioms, suffixes and prefixes.

SSG E03 Scientific Thinking

The course trains students to think logically and critically and helps them to adapt and integrate in an academic environment. The student is familiarised with methods of researching and accessing information through the library or the Internet and is trained to assess the content and sources of information, reporting and citing scientific literature, and how to maintain high ethical standards.

SSG E07 Psychology & Communication Skills

The objective of this course is to help understand the behavior of the people around us. Topics include: Contemporary psychology: Psychological processes, sensation, perception, conditioned learning, motivation. Secondary psychological processes: learning, memory, language and cognition, intelligence, personality, developmental psychology, environmental and child psychology.

Behavior dynamics: Groups, the individual, environmental, group problems, differentiation, density, handicaps, aggression, the media.

Mental Health: signs of good mental health and disturbances (neuroses and psychoses), conflicts and frustration as precursors to the neuroses, genetic predisposition and diseases as precursors to the psychoses, some of the main therapies in psychology.

MTH 1101 Mathematics and Statistics

Functions and graphs, limits and continuity, differentiation, exponential, logarithmic, and trigonometric functions, integration, basic differential equations, functions of several variables and problems related to them, probability and random variables, hypothesis testing.

ITC E01 Introduction to Computer Science

Introduction to computer technology. Computer hardware, software and operating systems. Using various input/output devices and operating systems, data organization. Practice on major application software packages such as word processing, spreadsheets, database, and presentation graphics. How to use the Internet (searching and finding topics) and accessing e-mail.