المجلس الأعلى للجامعات
لجنة قطاع الدراسات الصيدلية

برنامج الصيدلة الإكلينيكية

درجة البكالوريوس فى العلوم الصيدلية
(صيدلة إكلينيكية)

الفهرس

اللائحـــة الداخـــلية

لبرنـــامج الصـــيدلة الإكلينيكية

مادة (١) مقدمة:

الرسالة والأهداف

برنامج الصيدلة الإكلينيكية برنامج مرن يتلاءم مع ميول الطلاب ورغباتهم ويبرز طاقاتهم ويهدف الى تخريج صيدلى ملم بكافة متطلبات المهنة وبأحدث فروع علم الصيدلة وكل التقنيات الحديثة والتى تجعل منه صيدليا متميزا وتؤهله للعمل بالصيدليات العامة والخاصة ومصانع وشركات الأدوية ومعامل الرقابة الدوائية وتحليل الأغذية بالإضافة الى العمل فى مجال الإعلام والتسويق الدوائى ومراكز البحوث والجامعات.

والجديد الذى يضيفه هذا البرنامج هو التركيز على دور الصيدلى فى تقديم الرعاية الصحية المناسبة للمريض بداخل المستشفيات وخارجها وذلك من خلال متابعة النظام الدوائى له ودراسة مبادئ حركية الدواء الاكلنيكية وتطبيقاتها فى العلاج فى الحالات المرضية المختلفة وإيجاد الأنظمة العلاجية المناسبة وذلك بالتعاون مع الطبيب المعالج

مادة (٢) الدرجة العلمية التى تمنح للخريجين:

يمنح مجلس الجامعة، بناء على طلب مجلس كلية الصيدلة، درجة البكالوريوس فى العلوم الصيدلية (صيدلة إكلينيكية).

مادة (٣) نظام الدراسة :

مدة الدراسة بالبرنامج خمس سنوات وفق نظام الساعات المعتمدة.

ينقسم كل عام دراسى الى فصلين دراسيين ومدة كل فصل خمسة عشر أسبوعا. كما يجوز طرح بعض المقررات فى فصل دراسى صيفى مدته من ستة الى ثمانية أسابيع من الدراسة المكثفة.

والساعة المتعمدة هى وحدة قياس دراسية وتعادل ساعة دراسية أسبوعية نظرية أو درساً عملياً لا يقل عن ساعتين أسبوعياً لمدة خمسة عشر أسبوعاً وتدرس على مدى فصل دراسى واحد.

مادة (٤) تصميم البرنامج الدراسى:

صمم البرنامج الدراسى بحيث يتم التعلم عن طريق المحاضرات والدروس العملية وحلقات النقاش وأيضا إجراء بحوث بالإضافة الى التعاون مع المجتمع المحيط بالجامعة..

مادة (٥) التسجيل:

تحدد الكلية لكل مجموعة من الطلاب مرشداً أكاديمياً من أعضاء هيئة التدريس يقوم بمهام الرعاية والإرشاد العلمى ويكون مسئولاً عن الطالب فى الشئون العلمية والاجتماعية والنفسية وتوجيهه فى كل ما يتعلق بحياته الجامعية ويقوم بمساعدة الطلاب فى اختيار المقرارت من قائمة المقررات التى تطرحهاا الكلية فى كل فصل دراسى.

و على كل طالب أن يقوم شخصياً بتسجيل المقررات التى يرغب فى دراستها فى كل فصل دراسى مع ضرورة أن يتم اختيار المقررات وعدد الساعات بالتشاور والاتفاق مع المرشد الأكاديمى.

ويشترط لتسجيل المقرر أن يكون الطالب قد اجتاز بنجاح متطلب هذا المقرر.

وينبغي أن يملأ الطالب نموذج تسجيل المقررات فى الأوقات المحددة حسب التقويم الجامعى ولا يجوز الانتظام فى الدراسة إلا بعد انتهاء عملية التسجيل.

لا يسمح للطالب بالتسجيل المتأخر إلا بموافقة عميد الكلية على ألا يزيد مدة التأخير عن أسبوع من نهاية فترة التسجيل.

ا) العبء الدراسى:

العبء الدراسى هو عدد الساعات المعتمدة التى يقوم الطالب بتسجيلها فى الفصل الدراسى. ويجب مراعاة ألا يقل العبء الدراسى المسجل للطالب فى أى فصل دراسى عن ١٢ ساعة (اثنى عشرة ساعة معتمدة) وألا يزيد عن ٢٢ ساعة (اثنان وعشرون ساعة معتمدة).

العبء الدراسى خلال الفصل الصيفى يتراوح بين ٤ – ١٠ ساعات معتمدة.

ب) الإضافة والحذف والانسحاب:

يجوز للطالب بعد إكمال إجراءات التسجيل أن يحذف أو يضيف إلى ساعاته المعتمدة مقرراً أو أكثر على أن يكون ذلك فى خلال الفترات المحددة للحذف والإضافة فى كل فصل مع مراعاة الحد الادنى والحد الاقصى للعبء الدراسى.

يجوز للطالب بعد تسجيله الانسحاب من مقرر أو أكثر فى أى فصل دراسى دون أن يعتبر راسباً فى هذا المقرر وذلك إذا تقدم بطلب الانسحاب خلال الفترة المسموح بها والتى يعلن عنها فى الجدول الدراسى لكل فصل.

ومن ينسحب بعد المدة المقررة يعتبر راسباً .

مادة (٦) المواظبة:

على الطالب أن يواظب على حضور المحاضرات النظرية والدراسات العملية ولمجلس الكلية بناءا على طلب مجالس الأقسام المختصة أن يحرم الطالب من التقدم للامتحان التحريرى إذا تجاوزت نسبة غيابه ٢٥٪ من اجمالى الساعات المقررة للدروس العملية .

حضور الامتحانات والتغيب عنها والإخلال بنظامها:

يجب على الطالب أداء الامتحانات النهائية فى المواعيد المقررة لها، ويعتبر المتغيب عن الامتحان النهائى راسبا فى المقررات التى تغيب عن أداء الامتحان فيها.

مادة (٧) لغة الدراسة:

الدراسة فى الكلية باللغة الانجليزية. ويجوز مع ذلك تدريس بعض المقررات باللغة العربية بناء على توصية القسم المختص وموافقة مجلس الكلية ومجلس الجامعة.

مادة (٨) التدريب الصيفى:

على الطالب أن يكمل فترة تدريب عملى لا يقل عن ٢٠٠ساعة تدريب (١٠٠ ساعة معتمدة) تحت إشراف عضو هيئة تدريس متخصص وذلك فى أحدى المؤسسات الصيدلية التى يقرها مجلس الكلية. بالإضافة إلى عدد ١٠٠ ساعة معتمدة تدريب إكلينيكي فى إحدى المستشفيات التعليمية.

مادة (٩) شروط القبول:

يشترط فى من يتقدم للالتحاق بالبرنامج أن يستوفى الشروط التى يحددها المجلس الأعلى للجامعات.

يجوز لمجلس الكلية بعد موافقة الجامعة قبول طلاب حاصلين على درجة البكالوريوس من كليات العلوم (تخصص كيمياء أو بيولوجي) والطب البشرى والطب البيطرى والتمريض والزراعة وفق الضوابط التى يحددها مجلس الكلية ويوافق عليها رئيس الجامعة. وتحتسب للطالب المقررات التى درسها للحصول على الدرجة الجامعية الأولى وفقا للقواعد التى تحددها الكلية.

يجوز قبول تحويل الطلاب المقيدين فى إحدى كليات الجامعات المصرية أو الأجنبية بشرط استيفاء الطالب لمتطلبات القبول بالكلية وتحتسب للطالب المقررات التى درسها فى الكلية المحول منها وفقا للقواعد التى تحددها الكلية

مادة (١٠) نظـام التقييـم :

تتكون الدرجة النهائية فى المادة من مجموع درجات الأعمال الفصلية والعملية والتحريرية والشفهية كما هو موضح بجداول البرنامج الدراسى.

الحد الأدنى للنجاح فى أى مقرر هو ٦٠٪ ولا يكون الطالب ناجحاً فى أى مقرر إلا إذا حصل على ٣٠٪ من درجة الامتحان التحريرى النهائى ، وتكون النسبة المئوية للدرجات النهائية والتقديرات كما مبين بالجدول المرفق.

نظام التقييم

النسبة المئوية	عدد النقاط	الرمز	التقدير
٩٠ فأكثر	٤	A	ممتاز
٨٥ لأقل من ٩٠	٣,٧	A-	
٨٢,٥ لأقل من ٨٥	٣,٣	B+	جيد جدا
٧٧,٥ لأقل من ٨٢,٥	٣	B	
٧٥ لأقل من ٧٧,٥	٢,٧	B-	
٧٢,٥ لأقل من ٧٥	٢,٣	C+	جيد
٦٧,٥ لأقل من ٧٢,٥	٢	C	
٦٥ لأقل من ٦٧,٥	١,٧	C-	
٦٢,٥ لأقل من ٦٥	١,٣	D+	مقبول
٦٠ لأقل من ٦٢,٥	١,٠٠	D	
أقل من ٦٠	٠,٠٠	F	ضعيف
منسحب	–	W	منسحب

توجد رموز أخرى للتقييم لا تقابلها نقاط وهى:

S : مستوى مرضى

U: مستوى غير مرضى

T : درجات حصل عليها طالب محول من كلية أخرى

يتم حساب المعدل التراكمى للطالب *(GPA)* على النحو التالى:

أ- يتم ضرب قيمة تقدير كل مقرر دراسى (النقاط الموضحة فى الجدول) فى عدد الساعات المعتمدة لهذا المقرر لنحصل على عدد النقاط الخاصة بكل مقرر دراسى.

ب- يتم جمع نقاط كل المقررات الدراسية التى سجل فيها الطالب.

ج- يتم قسمة مجموع النقاط على إجمالى الساعات المسجلة للطالب لنحصل على المعدل التراكمى كما يلى:

$$\text{المعدل التراكمى } GPA = \frac{\text{مجموع النقاط}}{\text{إجمالى الساعات المسجلة}}$$

مادة (١١)الرسوب فى المقررات:

- **فى حالة تغيب الطالب عن الامتحان النهائى**
- **إذا حصل على أقل من ٣٠٪ من درجة الامتحان التحريرى النهائى**
- **عدم تحقيق ٦٠ ٪ على الاقل من مجموع درجات المقرر**

إذا رسب الطالب فى أى مقرر إجباري فى أى فصل دراسى فعليه دراسة ذات المقرر والامتحان فيه .أما إذا رسب فى مقرر إختيارى فبإمكانه إعادة دراسته أو دراسة مقرر إختيارى آخر بديل لإكمال متطلبات التخرج ، وذلك بعد موافقة المرشد الأكاديمى وعميد الكلية.

مادة (١٢) التعثر الاكاديمى:

الطالب الذى يحصل على معدل تراكمى (CGPA) أقل من "١" لمدة ستة فصول دراسية متصلة او فى عشرة فصول دراسية غير متصلة يفصل من الكلية.

يسمح للطالب ان يعيد دراسة المقررات التى اجتازها بتقدير D وذلك لتحسين المعدل التراكمى. وتحتسب الدرجة الأعلى التى يحصل عليها الطالب.

مادة (١٣) الانقطاع عن الدراسة:

- يعتبر الطالب منقطعاً عن الدراسة إذا لم يسجل فى فصل دراسى أو انسحب من الفصل سواء ذلك بعذر أو بدون عذر
- يجوز أن ينقطع الطالب فصلين متتاليين أو ما مجموعة ثلاثة فصول دراسية غير متتالية كحد أقصى بشرط الحصول على موافقة مجلس الكلية ، ويفصل من الجامعة فى حالة انقطاعه مدة أطول من ذلك بدون عذر يقبله مجلس الكلية ويوافق عليه رئيس الجامعة.

مادة (١٤) متطلبات الحصول على درجة البكالوريوس:

يتطلب الحصول على درجة البكالوريوس فى العلوم الصيدلية (صيدلة إكلينيكية) ما يلى:

١- دراسة ١٩٧ساعة معتمدة تشتمل على مقررات تخصصية ومقررات فى العلوم الأساسية والعلوم الإنسانية والاجتماعية.

٢- تدريب عملى لا يقل عن ٢٠٠ساعة تدريب (١٠٠ ساعة معتمدة) تحت إشراف عضو هيئة تدريس متخصص وذلك فى أحدى المؤسسات الصيدلية التى يقرها مجلس الكلية. بالإضافة إلى عدد ١٠٠ ساعة معتمدة تدريب إكلينيكي فى إحدى المستشفيات التعليمية.

مادة (١٥) نظام تأديب الطلاب:

الطلاب المقيدون بالبرنامج خاضعون للنظام التأديبى المبين فى قانون تنظيم الجامعات المصرية قانون ٤٩ لعام ١٩٧٢ والقوانين المكملة له.

مادة (١٦) البرنامج الدراسى

يتطلب الحصول على درجة البكالوريوس فى العلوم الصيدلية (صيدلة إكلينيكية) ما يلى:

اولا: دراسة ١٩٧ساعة معتمدة موزعة على عشرة فصول دراسية وتنقسم الى:

١- متطلبات الجامعة وتمثل ٩ ساعات معتمدة
٢- متطلبات الكلية الإجبارية وتمثل ١٨٢ ساعة معتمدة (جدول توزيع المقررات)
٣- متطلبات الكلية الاختيارية وتمثل ٦ ساعات معتمدة

ثانيا: تدريب عملى لا يقل عن ٢٠٠ساعة تدريب (١٠٠ ساعة معتمدة) تحت إشراف عضو هيئة تدريس متخصص وذلك فى أحدى المؤسسات الصيدلية التى يقرها مجلس الكلية. بالإضافة إلى عدد ١٠٠ ساعة معتمدة تدريب إكلينيكي فى إحدى المستشفيات التعليمية.يبلغ اجمالى عدد الساعات المعتمدة

كود الأقسام:

Key for Course Abbreviations

CS 000	Computer Science
EN	English language
HU	Humanities
MS	Mathematics
PB	Biochemistry
PC	Chemistry
PG	Pharmacognosy
PM	Microbiology and Immunology
PO	Pharmacology and Toxicology
PP	Pharmacy Practice
PT	Pharmaceutics and Pharmaceutical Technology
MD	Medical Courses

1. The Letter 'P' means that the courses are offered to students of Pharmacy only.
2. The first digit represents the semester number.
3. The second and third digits represent the course number.

1. University Requirements

Course Code	Course Title	Credit Hours*		
		L	P/T	Total
CS 101	Computer Science	1	1	2
EN 101	English Language	2	-	2
HU 201	Human Right	2	-	2
HU 302	Psychology	2	-	2
HU 903	Sociology	1		1
Total		8	1	9

L: Lecture; P/T: Practical or tutorial.

2 .Faculty Requirements: See programme curriculum (page 10)

3. 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		
		L	P	Total
PC E11	Drug Design	2		2
PC E12	Advanced Pharmaceutical Analysis -Spectroscopy	2	-	2
PG E8	Alternative Medicinal Therapies	2	-	2
PG E9	Production & Manufacture of Medicinal plants	2	-	2
PG E10	Chromatography and Separation Techniques	2	-	2
PT E10	Quality Assurances and GMP	2	-	2
PT E11	Applied Industrial Pharmacy	2	-	2
PT E12	Good Manufacturing practices	2	-	2
PT E13	Cosmetic Preparations	2	-	2
PM E5	Biological Standardization	2	-	2
PM E6	Antimicrobial Agents	2	-	2
PO E9	Veterinary Pharmacology	2	-	2

17. PROGRAMME CURRICULUM

Table (1)

Semester (1)

-Course Title	Course code	Credit hours			Prerequisite	Examination Marks*				Total. marks	Final Exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Physical & Inorganic Chemistry	PC 101	2	1	3	Registration	10	25	65	-	100	2
Pharmaceutical Organic chemistry -1	PC102	2	1	3	Registration	10	25	50	15	100	2
Biophysics	MD101	1	1	2	Registration	10	25	65	-	100	1
Botany and medicinal plants	PG 101	2	1	3	Registration	10	25	50	15	100	2
Cell Biology	MD 102	1	1	2	Registration	10	25	65	-	100	1
Mathematics and statistics	MS 101	2	-	2	Registration	10	-	90	-	100	2
Computer sciences	CS 101	1	1	2	Registration	10	25	65	-	100	1
English language	EN 101	2	-	2	Registration	10	-	90	-	100	2
Total		13	6	19						700	

Examination Marks:
Lect = Lecture
Period = Periodical Exam.
Pract = Practical Exam.
Wr. = Written Exam.

Table (2)

Semester (2)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Total marks	Final Exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmaceutical Organic chemistry-2	PC 203	2	1	3	Pharmaceutical Organic chemistry-1	10	25	50	15	100	2
Pharmaceutical Analytical chemistry-1	PC 205	2	1	3	Physical & inorganic chemistry	10	25	50	15	100	2
Pharmacognosy -1	PG 202	2	1	3	Botany & Medicinal plants	10	25	50	15	100	2
Histology	MD 203	2	1	3	Cell Biology	10	25	65	-	100	2
Physical pharmacy	PT 201	2	1	3	Physical & inorganic chemistry	10	25	50	15	100	2
Pharmacy orientation	PT 202	2	-	2	Registration	10	-	90	-	100	2
Human rights*	HU 201	2	-	2	Registration	10	-	90	-	100	2
Total		14	5	19						700	

Table (3)

Semester (3)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmaceutical Organic chemistry-3	PC 304	2	1	3	Pharmaceutical Organic chmistry-2	10	25	50	15	100	2
Pharmaceutical Analytical chemistry-2	PC 306	2	1	3	Pharmaceutical analytical chemistry-1	10	25	50	15	100	2
Pharmacognosy -2	PG 303	2	1	3	Pharmacognosy -1	10	25	50	15	100	2
Anatomy	MD 304	1	1	2	Registration	10	25	65	-	100	1
Physiology	MD 305	3	1	4	Cell biology	10	25	65	-	100	3
Medical Terminology	EN 302	2	-	2	English language	10	-	90	-	100	2
Psychology	HU 302	2	-	2	Registration	10	-	90	-	100	2
Total		14	5	19						700	

Table (4)

Semester (4)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr..	Oral		
Biochemistry -1	PB 401	2	1	3	Pharmaceutical organic chemistry-3	10	25	50	15	100	2
Phytochemistry -1	PG 404	2	1	3	Pharmacogosy-2	10	25	50	15	100	2
Instrumental Analysis	PC 407	1	1	2	Pharmaceutical analytical chemistry -2	10	25	50	15	100	1
General Microbiology and Immunology	PM 401	3	1	4	Cell biology	10	25	50	15	100	3
Parasitology	MD 406	1	1	2	Cell biology	10	25	50	15	100	1
Pharmaceutical dosage forms-1	PT 403	2	1	3	Physical pharmacy	10	25	50	15	100	2
Pharmacy legislation	PT 404	1	-	1	Registration	10	-	90	-	100	1
Total		12	6	18						700	

Table (5)

Semester (5)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Medicinal chemistry-1	PC 509	2	1	3	Pharmaceutical Organic chemistry-3	10	25	50	15	100	2
Clinical microbiology	PM 502	2	1	3	General microbiology & immunology	10	25	50	15	100	2
Pharmaceutical dosage forms-2	PT 505	2	1	3	Pharmaceutical dosage forms -1	10	25	50	15	100	2
Biochemistry-2	PB 502	2	1	3	Biochemistry -1	10	25	50	15	100	2
Phytochemistry-2	PG 505	2	1	3	Phytochemistry-1	10	25	50	15	100	2
Pathophysiology	MD 507	2	-	2	Physiology	10	-	90	-	100	2
Pharmacy Administration	PT 506	2	-	2	Registration	10	-	90	-	100	2
Total		14	5	19						700	

Table (6)

Semester (6)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr..	Oral		
Medicinal chemistry-2	PC 610	2	1	3	Medicinal chemistry -1	10	25	50	15	100	2
Pharmaceutical technology	PT 607	2	1	3	Registration	10	25	50	15	100	2
Community pharmacy practice	PT 608	2	1	3	Registration	10	25	50	15	100	2
Biopharmaceutics and pharmacokinetics	PT 609	2	1	3	Pharmaceutical dosage forms-2	10	25	50	15	100	2
Quality Control of Herbal Drugs	PG 606	2	1	3	Phytochemistry-2	10	25	50	15	100	2
Pathology	MD 608	2	1	3	Registration	10	25	50	15	100	2
Tromas and First Aid	MD 609	2	-	2	Histology, anatomy and physiology	10	-	75	15	100	2
Total		14	6	20						700	

Table (7)

Semester (7)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr..	Oral		
Pharmacology-1	PO 701	2	1	3	Physiology	10	25	50	15	100	2
Radiopharmaceuticals	PP 701	1	-	1	Registration	10	-	90	-	100	1
Clinical pharmacy -1	PP 702	2	1	3	Biopharmaceutics and pharmacokinetics	10	25	50	15	100	2
Hospital pharmacy	PP 703	2	1	3	Biopharmaceutics and pharmacokinetics	10	25	50	15	100	2
Controlled drug delivery system	PT 704	2	-	2	Pharmaceutical dosage forms-2	10	-	75	15	100	2
Public health and preventive medicine	MD 710	2	-	2	Clinical Microbiology	10	-	75	15	100	2
Pharmaceutical Biotechnology	PM 703	2	1	3	Biochemistry-2	10	25	50	15	100	2
Pharmaceutical microbiology	PM 704	2	1	3	General Microbiology and Immunology	10	25	50	15	100	2
Total		15	5	20						800	

Table (8)

Semester (8)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Pharmacology -2	PO 802	2	1	3	Pharmacology -1	10	25	50	15	100	2
Clinical pharmacy -2	PP 805	2	1	3	Clinical pharmacy-1	10	25	50	15	100	2
Phytotherapy	PG 807	2	1	3	Phytochemistry-2	10	25	50	15	100	2
Pharmaceuticals analysis and quality control	PC 808	2	1	3	Pharmaceutical analytical chemistry.-2 and Medicinal chemistry-2	10	25	50	15	100	2
Clinical biochemistry	PB 803	2	1	3	Biochemistry-2	10	25	50	15	100	2
Drug marketing	PP 806	1	-	1	Clinical pharmacy-1 and hospital pharmacy	10	-	90	-	100	1
Drug interactions	PO 803	2	-	2	Pharmacology-1 and clinical pharmacy-1	10	-	75	15	100	2
Elective course	PE	2	1	3	Registration	10	25	50	15	100	2
Total		15	6	21						800	

Table (9)

Semester (9)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr.	Oral		
Toxicology and forensic chemistry	PO 904	2	1	3	Pharmacology -2	10	25	50	15	100	2
Therapeutics -1	PO 905	2	1	3	Pharmacology-2	10	25	50	15	100	2
Clinical pharmacokinetics	PP 907	2	1	3	Biopharmaceutics and pharmacokinetics	10	25	50	15	100	2
Oncology	PP 908	2	1	3	Pathology and pharmacology-2	10	25	50	15	100	2
Clinical nutrition	PP 909	1	1	2	Biochemistry-2 and pharmaceutical dosage forms -2	10	25	50	15	100	1
Clinical pharmacology	PO 906	2	1	3	Pharmacology -2	10	25	50	15	100	2
Sociology	HU 903	1	-	1	Registration	10	-	90	-	100	2
Elective course	PE	2	1	3	Registration	10	25	50	15	100	2
Total		14	7	21						800	

Table (10)

Semester (10)

Course Title	Course code	Credit hours			Prerequisite	Examination Marks				Max. marks	Final exam. (hrs)
		Lect.	Pract.	Total		Period.	Pract.	Wr..	Oral		
Therapeutics -2	PO 007	2	1	3	Therapeutics -1	10	25	50	15	100	2
Treatment of dermatological and reproductive diseases	PP 010	1	1	2	Pathology and pharmacology-2	10	25	50	15	100	1
Treatment of Pediatrics diseases	PP 011	2	1	3	Pathology and pharmacology-2	10	25	50	15	100	2
Treatment of Cardiovascular diseases	PP 012	2	1	3	Pathology and pharmacology-2	10	25	50	15	100	2
Gastroenterology	PP 013	2	1	3	Pathology and pharmacology-2	10	25	50	15	100	2
Treatment of Respiratory system diseases	PP 014	2	1	3	Pathology and pharmacology-2	10	25	50	15	100	2
Drug information	PP 015	1	-	1	Pharmacology -2 and Clinical pharmacy -2	10	-	75	15	100	2
Elective course	PE	2	1	3	Registration	10	25	50	15	100	2
Total		14	7	21						800	

18 COURSE DESCRIPTIONS

PC 101 Physical and Inorganic Chemistry
Matter; its properties and measurement, electromagnetic spectrum, atomic structure, chemical bonding and intermolecular forces. Gases, liquids, and solids. Man and his environment and nuclear chemistry.

PC 102 Pharmaceutical 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, mono- and dibasic carboxylic acids and derivatives, amino acids.

PC 203 Pharmaceutical 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).

PC 304 Pharmaceutical Organic Chemistry (3)
Stereochemistry and Stereoisomerism. Organic reaction mechanisms (substitutions, additions, eliminations and condensations). Heterocyclic compounds including monocyclic monoheteroatom and fused bicyclic compounds.

PC 205 Pharmaceutical Analytical Chemistry (1)
Mixtures (suspensions, colloids and solutions), colligative properties of solutions (vapour pressure, osmotic pressure, effects on boiling and freezing points), Analytical chemistry Quantitative analytical chemistry comprises; acid base titrations and buffer solution, precipitimetry and gravimetry.

PC 306 Pharmaceutical Analytical Chemistry (2)
An introduction to statistical analysis, Oxidation-reduction titrations,(electrical properties of redox systems, factors affecting oxidation potential, redox titration curves). Complexometry (importance complexones stability titration curves, application, direct EDTA titrations, masking and demasking, non EDTA titrations)

PC 407 Instrumental Analysis
Spectrophotometric methods of analysis including; ultra-violet, visible and flame photometry, spectrofluorometry, atomic absorption & flame, electrochemistry (potentiometry, conductimetry, polarography), chromatography.

PC 808 Pharmaceutical Analysis and 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, pharmacopeial methods of stability and stability testing of drugs, performance and calibration of instruments used in pharmaceutical analysis, validation of analytical methods and ISO and BSI

PC 509 Medicinal 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.

PC 610 Medicinal Chemistry (2)
Central nervous system depressants, central nervous system stimulants, cardiovascular agents, analgesic agents, steroids and related compounds.

PC E11 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.

PC E12 Advanced Pharmaceutical Analysis -Spectroscopy
Applications of instrumental methods of analysis (ultraviolet and infrared spectroscopy; NMR; mass spectrometry; atomic absorption spectroscopy) to pharmaceutical compounds.

PG 101 Botany and Medicinal Plants
Plant Kingdom; classification and systematic botany of some lower and higher plants with examples of medically active plants; Cytology, plant physiology,. A general introduction to pharmacognosy (cultivation, collection, drying, packing, storage, and adulteration of medicinal plants), and a detailed pharmacognostical study of drugs composed of leaves

PG 202 Pharmacognosy (1)
Detailed pharmacognostical study of drugs composed of flowers, barks, galls, woods, and herbs.

PG 303 Pharmacognosy (2)
Detailed pharmacognostical study of drugs composed of seeds, fruits, rhizomes and roots; animal drugs and unorganized drugs

PG 404 Phytochemistry (1)
Devoted to the study of plants therapeutically active principles; volatile oils, carbohydrates, resins and resin combinations, bitter principles and tannins

PG 505 Phytochemistry (2)
Detailed study of phytochemicals; alkaloids and glycosides, in addition to hallucinating and anticancer drugs. Introduction to chromatography and separation technique.

PG 606 Quality Control of Herbal Drugs
Quality control of herbal drugs including; herbal adulteration, detection of common pollutants in herbal medicine such as pesticide residues, heavy metal, radioactive contaminants, aflatoxins, bacteria and fungi.

PG 807 Phytotherapy
Guidelines for prescribing herbal medicines, drugs affecting digestive system, cardiovascular system, respiratory system, nonspecific enhancement of resistance, urinary

system, rheumatic conditions, nervous system, gynaeocological conditions, cancer, skin diseases, eye diseases, wounds and other injuries.

PG E8 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.

PG E9 Productions and Manufacture of Medicinal Plants
Commercial production of medicinal plants, cultivation, collection, drying, preservation, extraction, quality control, and final packaging of entire or powdered forms or extracts.

PG E10 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.

PT 201 Physical Pharmacy
Principles of physical pharmacy, rheology and the flow of fluids, surface and interfacial phenomena, solutions and their properties, solubility and dissolution rate, disperse systems

PT 202 Pharmacy Orientation
Topic covered: History of pharmacy practice with particular emphasis on Arab impact, roles of the pharmacist, pharmacy organizations, systems of medicine, ethics of pharmacy, system for weights and measures, routes of drug administration, introduction to pharmaceutical dosage forms, types of prescription, and Incompatibilities, pharmaceutical terminology.

PT 403 Pharmaceutical Dosage Forms (1)
Includes, pharmaceutical calculation, pharmaceutical solutions, colloids and macromolecular system, coarse dispersions, suspensions and emulsions. Formulation, preparation and evaluation of solid forms, micromeritics, powders and granules, tablets, coating, hard capsules, soft capsules and microencapsulation

PT 404 Pharmacy 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.

PT 505 Pharmaceutical Dosage Forms (2)
Formulation, preparation and evaluation of semisolids and related dosage forms, transdermals, topical Drugs and Suppositories.; Parentral medications, ophthalmic preparations

PT 506 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

PT 607 Pharmaceutical Technology
Heat transfer, evaporation, drying, extraction, crystallization, filtration, centrifugation and distillation; Mixing, emulsification, homogenization, size reduction, size separation, size enlargements, materials for plant constructions, packaging materials, good manufacturing practice, flow of fluids, mass transfer, safety measures and validation

PT 608 Community Pharmacy Practice
Concept and techniques of pharmaceutical care, the pharmacy profession, professional communication, patient counseling, problem solving skills, role of the pharmacist in management of symptoms of certain disease of cardiovascular system, GIT, kidney, respiratory tract, eye, skin and certain rheumatic and metabolic disease.

PT 609 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 bioequivalence, absolute and relative bioavailability, assessment of bioavailability and correlation between in vitro dissolution and in vivo absorption.

PT E10 Quality Assurances and GMP
Quality control and assurance organization, analytical control, inspection control, documentation, environmental control, GMP regulations, statistical quality control.

PT E11 Applied Industrial Pharmacy
Good manufacturing practice regulations and quality assurance with emphasis on process validation and sampling techniques.

PT E12 Good Manufacturing practices
Concepts, objectives and applicability, general provisions, organization and personal, Building and facilities, materials, equipment, production and process controls, packing and labeling, control, distribution, laboratory controls, records and reports, returned and salvaged drug products, repacking , inspections and recalls

PT E13 Cosmetic Preparations
Definition and concepts, classification, hair preparation, bath preparation, fragrance preparation, make-up preparation, nail lacquers, shaving preparations, after-shave preparations, skin care, anal hygiene products, antiperspirants and deodorants, quality control tests and evaluation of cosmetic products.

PM 401 General Microbiology and Immunology
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.

PM 502 Clinical Microbiology
Topic covered include: Bacteriology; gram positive bacteria, the mycobacterium group, Gram negative bacteria, Chlamydia and Rickettsiae. Mycology: Ringworm, Moniliasis, 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

PB 703 Pharmaceutical Biotechnology
Introduction, biology of industrial micro-organisms, biophysical and biochemical processes, introduction to tissue culture and genetic engineering techniques. Techniques for the improvement of the economically important plants and animals and for the development of micro-organisms to act on the environment. Manipulation of living organisms, especially at the molecular genetic level, to produce new products, such as hormones, vaccines or monoclonal antibodies.
production of pharmaceuticals by microorganisms. Gene therapy.

PM 704 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.

PM E5 Biological Standardization
Assays of hormones, sera, vaccines, toxins, antitoxins, antibiotics and vitamins.

PM E6 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 antibiotics, bacterial resistance t

PO 701 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 and autacoids.

PO 802 Pharmacology (2)
Drugs affecting the central nervous system, the gastrointestinal system, the blood and blood forming elements, as well as the drugs acting locally; the course deals with the chemotherapy of microbial diseases, neoplastic diseases and parasitic infestation and the study of hormones and hormone antagonists.

PO 803 Drug Interactions
Mechanism of drug interaction, significance of drug-drug interaction, management of drug-drug interaction, drug interaction of antibiotics, antiarhythmics, anticoagulants, anticonvulsants, barbiturates, beta-agonists and antagonists, calcium channel antagonists, sulfonamides, drug-food interaction, drug-smoking interaction, drug-environment interaction.

PO 904 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.
therapeutic regimens for important prevalent diseases, including non-pharmacological approaches, pharmacotherapeutic requirements for treatment of pediatric and geriatric patients, and for pregnant and lactating mothers, immuno-compromised patients, patients with reduced organ function, and those with multi-morbidities, importance of form and route of administration, dialysis procedures, characteristics of certain therapeutic regimens, particularly with regard to anti-infective therapy, oncological therapy, and supportive therapy, anticoagulant therapy, immuno- and gene therapy and therapy of patients in intensive care

PO 905 Therapeutics (1)

PO 906 Clinical Pharmacology
General principles of pharmacotherapy, principles of pharmacotherapy in special patients, impact of drug interactions on therapeutics, pharmacotherapy for infectious diseases, cardiovascular disorders, respiratory disorders, gastrointestinal tract disorders and neurological and psychiatric disorders.

PO 007 Therapeutics (2)

PO E9 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

PB 401 Biochemistry (1)
Subcellular organelles and membranes. Biological and biochemical properties of proteins, nucleic acids, carbohydrates, lipids, porphyrins and enzymes. Biological oxidations, and related biochemical processes.

PB 502 Biochemistry (2)
Metabolic map, regulation of metabolism, metabolism of carbohydrates, metabolism of lipids, nitrogen metabolism, integration of metabolism.

PB 803 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.

MD 101 Biophysics
Cell membrane structure, method of transport, channel types, receptors. Application of action potential, electrocardiogram and electroencephalogram identification and waves elucidation.

MD 102 Cell Biology
The cell theory, membranous organelles, non-membranous organelles, the cell inclusions, the nucleus, cell growth and proliferation, apoptosis, apoptosis and cancer, apoptosis and AIDS, apoptosis and organ transplants, cellular aging.

MD 203 Histology
Cytology, various tissues (epithelial, connective, muscular and nervous), heart, blood vessels, lymphatic organs, skin and its appendages, systems (digestive and associated glands, respiratory, urinary, reproductive, central nervous system), endocrine glands and eye.

MD 304 Anatomy
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

MD 305 Physiology
Introduction (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

MD 406 Parasitology
Introduction, protozoology; amoebae; ciliate; flagellates; blood and tissue sporozoa. Medical helminthology; nematodes; cestodes; trematodes, and arthropods

MD 507 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, vascular and haematological disorders, disease of urinary, pulmonary and digestive systems.

MD 608 Pathology
The study of the etiology, 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.

MD 609 First AID
Basic Life Support, bleeding, shock, medical emergencies, poisoning, bones and joints, soft tissue injuries, rescue and transportation

MD 710 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

PP 701 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

PP 702 Clinical Pharmacy (1)
Definition and concepts, case history, patient management approach, patient history taking, clinical problem solving. Topics of discussion include, clinical drug-interactions, adverse drug reactions, drugs interference and clinical laboratory data.

PP 703 Hospital Pharmacy
Organisation 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.

PP 704 Controlled Drug Delivery
Controlled and Modulated release drug delivery systems, theory, methods.
eg. Microcapsules – Bioadhesives.

PP 805 Clinical Pharmacy (2)
Clinical pharmacy in obstetrics, gynaecology, neonates, paediatrics, geriatrics, blood disease and CNS disease. Nutritional deficiencies, energy and nutritional needs, enteral and parenteral nutrition

PP 806 Drug Marketing
Marketing analysis, orientation to decision making, management of new product venture, advertising distribution, marketing information system.

PP 907 Clinical Pharmacokinetics
Introduction, applied clinical pharmacokinetics, therapeutic drug monitoring, mono and multi-exponential pharmacokinetics, Non-compartmental pharmacokinetics and moment analysis. Drug distribution and drug clearance mechanisms, IV infusion kinetics and kinetics following extra-vascular dosing, metabolite kinetics, multiple dose kinetics, non-linear pharmacokinetics, dosage regimen design, dosage individualization of drugs of low therapeutic index, especially in patients with compromised renal and hepatic function.

PP 908 Oncology
Cancer etiology, risk factors, prognosis, types of tumors, systems affected, treatment, adjuvant therapy, patients factors and patient's support measures.

PP 909 Clinical 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. Fluid and electrolyte therapy and acid-base balance.

PP 010 Treatment of Dermatological and Reproductive Disease
Most popular skin diseases, types, bacterial, viral and fungal diseases, differentiation.

PP 011 Treatment of Pediatrics Disease
Nutritional requirements in neonates and infants, Nutritional disorders, neonatology, infectious diseases in pediatrics, congenital heart diseases, endocrine disorders, neurological disorders, pediatric emergencies.

PP 012 Treatment of Cardiovascular Disease
Diseases comprising the cardiovascular system, symptoms, prognosis drugs, selection, patients advice with hospital setting practice.

PP 013 Gastroenterology
GIT diseases, epidemiological aspects, symptoms, treatment, patient advice, case reports.

PP 014 Treatment of Respiratory System Disease
Infections, occupational, immunological diseases. Assessment of respiratory efficiency treatment, O_2 supply with case study reports.

PP 015 Drug information
Drug information and poison information centres, drug-drug interactions, drug-food interactions, drug disease interactions, and intravenous incompatibilities. Use of the Internet for drug and research information.

MS 101 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.

CS 101 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.

EN 101 English Language
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.

EN 302 Medical Terminology
Train the students to understand medical and pharmaceutical terminologies, medical abbreviations, medical idioms, suffixes and prefixes.

HU 201 Human rights

HU 302 Psychology
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.

HU 903 Sociology
Culture ethnicity, ethnocentrism, prejudice, race and stereotype subculture, skills of communication (verbal and non verbal)