

## COURSES OF STUDY FOR B.Sc.:

### Fourth Year

<b>First Semster</b>									
No.	Course	Weekly hours		Examination degree					Examination time
		Lec.	Lab.	periodical	Practical	written	oral	Total	
1	Pharmacy practice and hospital pharmacy	3	3	15	45	70	20	150	3
2	Applied Pharmacognosy (1)	2	2	15	45	70	20	150	2
3	Pharmaceutical Medicinal Chemistry (3)	2	3	15	45	70	20	150	2
4	Industrial Pharmacy (1)	2	3	15	45	70	20	150	2
5	Toxicology, Forensic Chemistry	3	2	15	45	70	20	150	3
6	First aids	1	-	-	-	50	-	50	2
7	Elective course	2	2	-	20	60	20	100	2
	<b>Total</b>	<b>15</b>	<b>15</b>						<b>900</b>

## Second Semester

No.	Course	Weekly hours		Examination degree					Examination time
		Lec.	Lab.	periodical	Practical	written	oral	Total	
1	Clinical pharmacy	3	3	15	45	70	20	150	3
2	Applied Pharmacognosy (2)	2	2	15	45	70	20	150	2
3	Pharmaceutical Medicinal Chemistry (4)	2	3	15	45	70	20	150	2
4	Industrial Pharmacy (2)	2	3	15	45	70	20	150	2
5	Biological assays and Biostatistics	3	2	15	45	70	20	150	3
6	Elective course	2	2	-	30	50	20	100	2
	<b>Total</b>	<b>14</b>	<b>15</b>						<b>850</b>

## **FOURTH YEAR**

### **1. Pharmacy practice and hospital pharmacy (3 hrs lect., 3 hrs pract.):**

#### **1.1. Pharmacy practice:**

Levels of pharmaceutical care, skills of patient counseling, complementary and alternative medicine, differentiation between minor illness and major disease, allergic and drug induced disease, common eye disorders, common ear disorders, seizure disorders, headache and wound management. Patient compliance to therapy, improvement of communication skills with patients and with other members of the health care. Pharmacoeconomic issues as an important factor in pharmacy practice.

#### **1.2. Hospital pharmacy:**

Definition and functions of hospital pharmacy, role of the hospital pharmacist. Abilities required for the hospital pharmacist, organization of the hospital pharmacy departments, responsibilities of the director of pharmaceutical services, the pharmacy procedural manual, facilities of the hospital pharmacy department (location, area, ventilation, ....etc), pharmacy and therapeutic committee, pharmaceutical procurement and control services, in-patients pharmacy services, drug distribution system, formulation for hospital use, preparation and quality assurance and packaging, medication use evaluation (MUE), out-patient services and medication use evaluation (MUE), demonstration of medical devices and diagnostic agents.

## **2. Applied Pharmacognosy-1 (2 hrs lect., 2 hrs pract.):**

Spectroscopy	8	hrs
Production of medicinal plants	7	"
Biosynthesis of natural products	7	"
Tissue culture	6	"

## **3. Pharmaceutical Medicinal Chemistry-3 (2 hrs lect., 3 hrs pract.):**

CNS depressants, CNS stimulants; autonomic nervous system and cardiovascular system.

### **Practical:**

General instructions. HPLC assay. Assay and identity of vitamin C. Assay of benzocaine powder. Assay of propranolol tablets. Assay of fruital syrup. Assay of vitamin B12 amp. Assay of dexamethazone tablets. Assay of chloral hydrate, assay of flaxidil amp. Assay of epinephrine amp.

## **4. Industrial Pharmacy-1 (2 hrs lect., 3 hrs pract.):**

Size reduction, air purification, sterile area, centrifugation, heat flow, evaporation, GMP, tablets, and quality control of tablets.

## **5. Toxicology and Forensic Medicine (3 hrs lect., 2 hrs pract.):**

Classification of poisons and mechanisms of poisoning. Treatment of poisoning. Antidotes and antidotal mechanism. Air born-gases, air pollution. Heavy metals, corrosives. Food poisoning. Animal and plant poisons. Teratology, carcinogens. Insecticides and pesticides. Isolation, separation and identification of poisons. Pharmacology of chemotherapeutic agents. First aid measures: burns, shock, fractures, haemorrhage.

## 6- الاسعاف الأولى:

### تعريف الاسعاف الأولى

المبادئ العامة للاسعافات الأولية

الحروق- أنواعها- اسعافاتها.

الجروح- أنواعها- اسعافاتها.

النزيف- - أنواعه- مضاعفاته- اسعافاته.

التشنج- أنواعه- أعراضه- اسعافاته.

الاغماء- أنواعه- أعراضه- اسعافاته.

التسمم- أنواعه- اسعافاته.

الصدمة- أسبابها- علاماتها- اسعافاتها.

انسداد التنفس- أسبابه- طرق التنفس الصناعي.

الصيدلية المنزلية.

التداخلات الغذائية والدوائية.

انعاش القلب والتنفس بعد توقف وظيفتها المفاجئة.

العض والسع و اللدغ.

## **Second term:**

### **1. Clinical pharmacy (3 hrs lect., 3 hrs pract.):**

Introduction including definition, activities, responsibilities of the clinical pharmacist, patient medication record taking, drug information resources, clinical pharmacokinetics and therapeutic drug monitoring, drug interactions with (drugs, food, disease,...) evaluation of laboratory reports & factors altering, normal laboratory data, fluid and electrolyte therapy and acid-base balance, parenteral and enteral nutrition. Therapeutics including the pathophysiology and treatment of some diseases as cancer, dislipidemia, pain and drugs used in lactation and pregnancy, inflammatory bowel diseases, hepatitis, viral and drug induced cirrhoses,. Variation in drug response will be taught concerning patients with acute and chronic renal disease, pediatric, neonatal and geriatric therapy.

### **2. Applied Pharmacognosy-2(28 hrs):**

<b>Item</b>	<b>Hours</b>
Quality control of herbal drugs and their extracts	"10"
Rational phytotherapy	"14"
GIT	
Respiratory	
Liver	
Urinary tract	
Herbal interaction	"4"

### **3. Pharmaceutical Medicinal Chemistry-4 (2 hrs lect., 3 hrs pract.):**

Peptide and steroidal hormones, prostaglandins, vitamins and local anesthetics.

#### **Practical:**

General instructions. HPLC assay. Assay and identity of vitamin C. Assay of benzocaine powder. Assay of propranolol tablets. Assay of fruit syrup. Assay of vitamin B12 amp. Assay of dexamethasone tablets.

Assay of chloral hydrate, assay of flaxidil amp. Assay of epinephrine amp.

#### **4. Industrial Pharmacy-2:**

Drying, mixing. Flow of powder, size analysis, filtration, extraction, crystallization, and emulsification.

#### **5. Biostatistics and Biological Assay of Drugs:**

Types of bioassays: international standards and units. Assays of agonists, assays of antagonists. Bioassays and screening of cardiac glycosides, antiarrhythmic drugs, anticoagulants, pharmacology. Bioassays of hormones and vitamins. Antifertility agents. Antimicrobial bioassays. Screening of drugs, autonomic drugs, analgesics, tranquilizers, antihistaminics, antiinflammatory, antidiabetics, hypotensives. Biostatistics: Methods used in graphical presentation, kinds of averages, measures of variability, validity of the mean, coefficient of variation, confidence limits, tests of significance, correlation coefficient.

## المقررات الاختيارية:

- 1- موضوعات مختارة فى الصيدلانيات (قسم الصيدلانيات).
- 2- موضوعات مختارة فى العقاقير والتقنية الحيوية (قسم العقاقير).
- 3- موضوعات مختارة فى التصنيع الدوائى (قسم الصيدلة الصناعية).
- 4- موضوعات مختارة فى تصميم الأدوية (قسم الكيمياء الطبية).
- 5- الطرق المستحدثة لتحضير الخامات الدوائية وتنقيتها (قسم الكيمياء العضوية الصيدلانية).
- 6- الرقابة وتوكيد الجودة (قسم الكيمياء التحليلية الصيدلانية).
- 7- الصيدلة الإكلينيكية (قسم الصيدلانيات والفارماكولوجى).



1- الرقابة وتوكيد الجودة (مقرر اختياري في الكيمياء التحليلية):

Drug analysis and quality control: Validation of analytical methods, compendial specification of drugs, drug products and pharmaceutical excipients, test for identification, testing for purity and limit tests for impurity and contaminants. assessment of potency of drug products of various pharmaceutical forms, quantitative spectroscopy in drug analysis, chromatographic methods, electrochemical methods, stability of pure and dosage forms.