وزارة التعليم العالي والبحث العلمي

مفردات المناهج للتخصصات الطبية
قسم تقنيات الصيدلة
المرحلة الثانية
النظام الفصلي

٢٠٢٣-٢٠٢٤

أسم القسم

باللغة العربية : قسم الصيدلة

باللغة الأنكليزية **Department Pharmacy** :

تسمية الخريج :

باللغة العربية : تقني صيدلة

باللغة الأنكليزية **Pharmacy Technican** :

تسمية الشهادة :

باللغة العربية : دبلوم تقني في الصيدلة

باللغة الأنكليزية In Pharmacy Technical Diploma :

وزارة التعليم العالي والبحث العلمي

التخصصات	الطبية
القسم	الصيدلة
الفرع	

الهدف

يهدف القسم الى تخريج ملاكات تقنية مؤهلة تعمل في مجال الصيدلة السريرية والدوائية تحت اشراف الصيدلي وفي مجال الصناعات الصيدلانية والكيمياوية تحت اشراف الصيدلي او الكيمياوي .

توصيف عمل الخريج:-

أن يكون الخريج قادرا على العمل في :-

١. الصيدليات المختلفة ويكون قادرا على قراءة الوصفات الطبية وتحضير وصرف الدواء وكذلك تصنيفه وترتيبه في الصيدلية تحت اشراف الصيدلي .
٢. معامل الادوية حيث يساعد الصيدلي او الكيمياوي في تحضير الادوية والاشراف والمتابعة والمراقبة في الخطوط الانتاجية وتطبيق طرق السيطرة النوعية اثناء انتاج الادوية واجراء التحضيرات المختبرية الخاصة بالفحص او التحليل .
٣. مصانع المستحضرات الطبية والكيمياوية ومستحضرات التجميل والمحاقن باشراف الصيدلي او الكيماوي .
٤. مخازن ومستوصفات الادوية وفي المعامل ومخازن الادوية حيث يكون قادرا على اجراء جميع مراحل التخزين والتصنيف والترتيب .
٥. صيانة وتشغيل الاجهزة الصيدلانية.

Ministry of higher education & scientific research

Aim

The graduate afterward will be able to:

1- work in hospital pharmacies belonging to the ministry of health as well as in public clinics pharmacies in a way that enables him to :

a) dispense the drugs for inpatients in hospitals as well as for outpatients . he can also inform the patient with the necessary information for the correct use of the drug , how to use it , according to the medical prescription also understanding the risks that might arise from drug dispensing abuse , in order to strictly follow the rules and laws concerned .

b) the preparation of different drugs including the knowledge of the weights and volumes prescribed , distinction and conversion methods , and the knowledge of the exact preparation procedures .

c) storage drugs that requires from him to be well informed about drug composition , chemicals , instruments and equipments generally used in pharmacies , as well as the knowledge of the proper hygienic environments necessary to keep all kinds of chemicals and drugs , also to be aware from their expiry dates.

2- Working in drugs factories where he can be able to :

a. Assist the pharmacist in drug preparation in the production lines .
b. Develop the industrial work output in the factories .
c. Work in the research centers in drug factories .

3- Working in medical preparation plants , where he can be able to prepare different kinds of pharmaceutical industries such as cosmetics , tooth pastes , liquid detergents ….etc , under the supervision of a pharmacist , or a senior chemist .

4- Working at the universities and institutes related to their field of specialization , where he can be able to :

a. Participate in giving practical lectures , under the supervision of the senior lecturer in-charge .
b. Assist the students in their seminars , under the supervision of the senior lecturer in-charge .
c. Accompanying the students to different related factories and plants , explaining and responding to their hints and enquiries .

5- Necessary communications :

The job of the graduate at this department necessities proper communication and coordination with the pharmacist or senior chemist in-charge in the same working field, also to supervise and communicate with the working staff in the factory and plant , also to communicate with the pharmacy customers to respond to their needs and give the proper instructions and directions concerning drugs dispensing and preparation procedures . also to communicate with the students , if asked , to work at the teaching institutions .

6- Necessary information's and skills :

The graduate at this department acquires the following information's and skills :

a. General medical information's about human body and related diseases .
b. Information's and skills in the field of drugs and different concerning weighing and balances , as well as the correct use of different instruments .
c. The knowledge of the nature of chemicals and raw materials used in drugs industry and their effect or human body .
d. Getting acquainted with the different industrialization techniques and production lines in factories and the methods of quality control for the products .

المرحلة الثانية / الفصل الدراسي الاول

ت	المادة	عدد الساعات			عدد الوحدات	نوع المادة	الملاحظات
		ن	ع	مج			
1	المبادئ الصناعية **Industrial principles**	**2**	3	5	5	تخصصية	الانكليزية
2	مبادئ كيمياء صيدلانية **Pharmaceutical Chemistry principles**	**2**	3	5	5	تخصصية	الانكليزية
3	صيدلانيات **Pharmaceuticals**	**2**	3	5	5	تخصصية	الانكليزية
4	مبادئ الدواء principles of drugs	**2**	3	5	5	تخصصية	الانكليزية
5	اساسيات التطبيقات علاجية **Basics of Therapeutics application**	**2**	**2**	**4**	**4**	تخصصية	الانكليزية
6	النباتات الطبية والنواتج الطبيعية **Medical plants and natural products**	**2**	**2**	**4**	**4**	تخصصية	الانكليزية
7	سموم **Toxicology**	**2**	**-**	**2**	**2**	تخصصية	الانكليزية
	مجموع المواد التخصصية	**14**	**16**	**30**	**30**		
8	منهجية بحث methodology	**-**	**2**	**2**	**2**	=	
	مجموع المواد المساعدة	**-**	**2**	**2**	**2**		
	المجموع الكلي	**14**	**18**	**32**	**32**		

المرحلة الثانية / الفصل الدراسي الثاني							
ت	المادة	عدد الساعات			عدد الوحدات	نوع المادة	الملاحظات
		ن	ع	مج			
1	الصيدلة الصناعية **Industrial pharmacy**	**2**	3	5	5	تخصصية	الانكليزية
2	كيمياء صيدلانية **Pharmaceutical Chemistry**	**2**	3	5	5	تخصصية	الانكليزية
3	مستحضرات صيدلانية **Pharmaceutical formulation**	**2**	3	5	5	تخصصية	الانكليزية
4	علم الادوية pharmacology	**2**	3	5	5	تخصصية	الانكليزية
5	التطبيقات علاجية **Therapeutics application**	**2**	**2**	**4**	**4**	تخصصية	الانكليزية
6	عقاقير **Pharmacognacy**	**2**	**2**	**4**	**4**	تخصصية	الانكليزية
7	مجموع المواد التخصصية	**12**	**16**	**28**	**28**		
8	اخلاقيات المهنة **professional ethics**	**2**	-	**2**	**2**		
9	مشروع بحث **proposal**	-	**2**	**2**	**2**	=	
	مجموع المواد المساعدة	2	2	4	4		
	المجموع الكلي	**14**	**18**	**32**			

مجموع الساعات للسنة الدراسية الاولى	**65**
عدد الوحدات للسنة الدراسية الاولى	**65**
مجموع الساعات للسنة الدراسية الثانية	**64**
عدد الوحدات للسنة الدراسية الثانية	**64**
نسبة الساعات النظرية لسنتين	**45 .7 %**
نسبة الساعات العملية لسنتين	**55.8 %**
نسبة الساعات التخصصية لسنتين	**72.8%**
نسبة الساعات المساعدة لسنتين	**11.6%**
نسبة الساعات العامة لسنتين	**3.8%**
عدد ساعات التدريب الصيفي	**320**

مفردات السنة الثانيـــة
الفصل الدراسي الاول

Subject name	Arabic language	مبادئ صناعية	Studied year	No. of hour/week			
	English language	Industrial principles		Theory	Practical	Total	No. of units
Teaching language	English		Second	2	3	5	5

Aims of subject:

Enable the students to understand the pharmaceutical preparations, their dosage forms, quality control of them, steps of preparing the pharmaceutical dosage forms and pharmaceutical factories.

Theoretical subjects	
Week	**Briefs**
1	**Introduction to industrial pharmacy.** 1. **Definition, development processes. 2. Practical compounding, packaging, pharmaceutical department.**
2	**Introduction to pharmaceutical processes, large-scale production, accuracy, economy.** **Reasons behind large-scale production.**
3	**Size reduction, units of pharmaceutical industry, heat transfer, mass transfer.** **Particle size, definition**
4	**Particle size- distribution and analysis.**
5	**Size reduction, energy needed for Size reduction, methods of Size reduction.**
6	**Sieving-mechanical sieving.**
7	**Mixing- types of mixing.**
8	**Types of mixtures**
9	**Liquid and powder mixing, powder presentation.**
10	**Drying.**
11	**Evaporation, factors affecting on evaporation.**
12	**Filtration, properties and factors affecting on filtration.**
13-14	**Extraction, theory of extraction, methods of extraction.**
15	**Semisolid preparations.** **Effervescent preparation**

practical subjects	
Week	**Briefs**
1	**Industrial pharmacy definition and department industrial pharmacy, size**
2	**reduction.**
3-4	**Classification of mills and crushers.**
5	**Size reduction; definition, mechanism, methods.**
6	**Size separation.**
7-8	**Mixing.**
9	**Extraction Definition, methods of extraction.**
10	**Drying.**
11	**Evaporation.**
12-13	**Filtration.**
14-15	**Effervescent preparation, methods and preparation of effervescent granules.**
	Semisolid preparations

Subject name	**Arabic language**	اساسيات كيمياء صيدلانية	**Studied year**	**No. Of Hours/ week**			
	English language	**Pharmaceutical chemistry principles**		Theory	Practical	Total	No. units
Technical Language		**English**	**second**	**2**	**3**	5	5

Objective of the subject:

After the completion of this article the student will be able to:
1- Diagnosis of various types of pharmaceutical compounds based on the qualities chemical Alvezao.
2 - to know the relationship between the chemical composition of the drugs pharmaceutical and medical effectiveness and reliability
3 - Understanding the compatibility and mechanical to receive drugs medical effectiveness.
4 - Understanding the relationship between the chemical composition and the effectiveness of the drugs.
5 - Understanding chemical reactions for prescription drugs with each other (drug interactions)

Theoretical

Weeks	Details
1-2	**Physicochemical Properties In Relation To Biological Action**{drug distribution , drug-receptor interaction ,acid base properties }
3-4-5	**Anti-infective Agents**{alcohol and related compounds, phenols and their derivatives, oxidizing agents, halogens containing compounds, dyes, antifungal agents, synthetic antibacterial agents(quinolones, nitrofurans, methenamine), urinary analgesics }
6-7-8	**Analgesics** {opioids, nonsteroidal anti-inflammatory drugs, triptans}

9-10	**Central Nervous System Depressants**{anxiolytic, sedatives and hypnotics agents }
11-12	**Central Nervous System Stimulants** {analeptics, methylxanthines, psychomotor stimulants, antidepressants }
13	**Adrenergic Agents** {sympathomimetic agents, adrenergic receptor antagonists}
14-15	**Cholinergic Drugs And Related Agents** {cholinergic agonists, cholinergic receptor antagonist, neuromuscular blocking agents}

Practical

Weeks	Practical
1-2	Solution, preparation of solution percentage, parts-per million, Dilution and concentration, Normality, Milli equivalent
3	Preparation of salicylic acid
4	Recrystallization of salicylic acid
5	Synthesis of aspirin
6	Recrystallization of aspirin
7	Assay of aspirin (known sample)
8	Assay of aspirin (unknown sample)
9	Assay of ferrous sulfate (known sample)
10	Assay of ferrous sulfate (unknown sample)
11	The Enzymes, factor effect of enzymes activity
12	Synthesis of hexamine
13	Preparation of nitrobenzene
14	Preparation of aniline
15	Preparation of acetanilide

Subject	***Class***	**Hours**			
صيدلانيات **Pharmaceuticals**	***Second***	**Theory**	**Practical**	**Total**	No.of units
		2	**3**	**5**	5

Theoretical subject

Week	**Subject**
1	Introduction , Medical prescription Definition , parts of prescription
2	Solutions , definition , benefit of solutions Dissolution , Stability , Coloring and flavoring
3	Tinctures , definition , uses , classification with examples
4-5	Semisolid preparations; Ointments, creams, pasts and GEL.
6	Eye ointment , types with examples
7	Solid preparations; suppositories, capsules and tablets.

	Suppositories , definition , using , benefit , examples
8 & 9	Suppository bases , types , displacement value , examples with Calculation
10	Classification of Suppositories , types , uses , Method of preparation , Lubrication of the mould
11 & 12	Capsules , definition , types , therapeutic uses
13 & 14	Medical tablets , types , Methods of preparation , granulation & granulating agent , Binders , disintegrating agent Colouring & flavoring agents , examples
15	Standardization of Medical tablets

Practical Subjects

Week	**Subject**
1	Weights & Volumes used in the pharmacy Lab . the measuring containers used in the lab
2	Isotonic Solution of Sodium chloride glucose Saline Solution
3	Strong Solution of Iodine Weak Solution of Iodine Aqueous Iodine Solution Solution of Balsam of tolue
4	Tinctures , Belladonna tincture , concentrated camphor tincture
5	Simple ointment Paraffin ointment
6	Ointment of wool Alcohol , hydrous ointment
7	Zinc & castor oil ointment , Salicylic acid ointment
8	Boric acid ointment , hydrocortison ointment Rose water ointment
9	Hydro cortisone eye ointment , Sulfa – Cetamide eye ointment
10	Suppositories , (Tannic acid , Resorcinol & Zinc oxide) Suppository
11	Chloral hydrate Suppository , phenol supp.
12	Glycerine Suppository B.P , gelato – glycerine Supp. BP
13	Capsules , parts of capsules , Method of preparation , (Demonstration)
14	Medical tablets , Method of preparation of pot. Bromide , Aspirin , flavoured Sod. Bicarbonate as Lozenges
15	Examination

Subject	**Class**	**Hours**			**No. of Unit**
مبادئ الدواء Principles of drugs	**Second year**	**Theory**	**Practical**	**Total**	**5**
		2	**3**	**5**	

Teaching language is English			

General aims : Covering the basic pharmacology curriculum: drugs and their effect on the body

Specific objectives: Knowledge of the basics of pharmacology, knowledge of the mechanism of action of medicine in the body, its drug uses, and side effects.

Theoretical subjects

Week	Subject
1	-General aspects of pharmacology -General definitions –Drug- Dose -Methods & drugs administration Naming & drugs Classification
2 3	Drug- dynamics Pharmacodynamics interaction between receptors and the drugs Pharmacokinetice :- Absorption – Distribution – Metabolism Excretion
4 5	Drugs acting on gastrointestinal tract:- Drugs used for treatment of peptic ulcer - Antidiarrheal- cathartics and laxatives-Antiemetics
6 7 8	Drugs acting on cardiovascular disorders Cardiac glycosides Digitalis – Antiarrhythmic drugs -Anti angina drugs -Anti hypertention drugs - Diuretics drugs -Vasodilators - Drug effect hemostasis -Anticoagulant
9 10	Drugs used to treat metabolic disorder hyperglycemia Insulin Oral hypoglycemic agents Adrenal steroids Thyroid hormones antithyroid drugs Vasopressin and oxytocin
11 12	Anterior pituitary gonadotropins And sex hormones – Oral contraceptive pills -Drugs used in gout treatment

13-14-15	Drugs acting on autonomic nervous system cholinergic and anti-cholinergic drugs Adrenergic and anti adrenergic drugs

Practical Subjects

Week	Subject
1 2 3	Route of drugs administration oral route 1/V , 1/M , 1/P , S.C Discussion Seminars
4 5 6	Absorption and excretion of drugs (Iodine and Salicylate) Discussions Seminars
7 8 9	Drugs antagonism Morphine and Nalorphine Curare – Physostigmine Discussions Seminars
10 11 12	Effects of parasympathetic Drug on glandular secretions Discussions Seminars
13 14 15	Evaluation of analgesics Discussion Seminars

ject name	Arabic language	تطبيقات علاجية	Studied year	No. of hour/week			
	English language	Basics of therapeutic application		Theory	Practical	Total	No. of units
Teaching language	English		Second	2	2	4	4

Aims of subject:

Enable the students to correlate between the basic and scientific principles and practical applications in hospitals, factories, and private pharmacy. Understanding usage of drugs according to the trade name, methods of dispensing and registering, ordering, storage conditions, expire date, dealing with the expired drugs and how to write the information about dispensing drugs

Theoretical Practical subjects

Week	Brief
1-3	Drugs affecting gastrointestinal system, antacid, carminative, emetics and antiemetic, laxative and antidiarrheal drugs.
4	Visit to private or official pharmacy, report about the present drugs
5-6	Drugs affecting urinary tract system, diuretic, nactural enuresis.
7	Visit to library of institute with report about diuretics.
8-10	Drugs affecting cardiovascular system, antianginal drugs, antihypertensive and hypotensive drugs, vasodilator and vasoconstrictor drugs
11-	Searching the medical sites in internet
12-15	Drugs affecting the respiratory system, blockers, bronchodilators, respiratory stimulant and anticonvulsants.

Practical subjects

Week	Brief
1-3	Drugs affecting gastrointestinal system, antacid, carminative, emetics and antiemetic, laxative and antidiarrheal drugs.
4	Visit to private or official pharmacy, report about the present drugs
5-6	Drugs affecting urinary tract system, diuretic, nactural enuresis.
7	Visit to library of institute with report about diuretics.
8-10	Drugs affecting cardiovascular system, antianginal drugs, antihypertensive and hypotensive drugs, vasodilator and vasoconstrictor drugs
11-	Searching the medical sites in internet
12-15	Drugs affecting the respiratory system, blockers, bronchodilators, respiratory stimulant and anticonvulsants.

Subject name	Arabic language	نباتات طبية ونواتج طبيعية	Studied year	No. of hour/week			
	English language	Medical planta and natural products		Theory	Practical	Total	No. of units
Teaching language	English		Second	2	2	4	4

Aims of subject:

Enable the students to identify different groups of crude drugs, determine their active ingredients, methods of preparations and uses. The students will be able to know and understand the medicinal plant classes, identify their active constituents, methods of extractions, uses, toxicity and indications.

Theoretical subjects	
Week	**Briefs**
1-3	**Collection and preparation of medicinal plants, methods of collection, drying and methods of drying, storage and conditions of storage.**
4-5	**Classification of medicinal plants:** **1. Chemical classification 2. Biological classification** **3. Alpha-beta classification 4. Pharmacological classification** **5. Taxonomical classification**
6- 10	**Evaluation of medicinal plants which includes:** **1. Physical evaluation 2.Chemical evaluation 3. Pharmacological evaluation** **4. Sensory evaluation 5. Microscopic evaluation 6. Chromatography**
11-12	**Carbohydrates and drug containing carbohydrates.** a. **Introduction about the medicinal plants which contain carbohydrates.** b. **Classification of carbohydrates.** c. **Synthesis of carbohydrates in plants.** d. **Medicinal plants which contain carbohydrates and their medical uses.** e. **Preparation, purification and isolation of carbohydrates from the plants.** f. **Mucilage and gums**
13-14	**The glycosides and the plant containing glycosides.** a. **Definition of glycosides.** b. **Extraction, isolation and purification of glycosides.** c. **Classification of glycosides.** d. **Examples for drugs belong to each class of glycosides and their medical uses.**
15	**The poisonous plants:** **a. Their types. b. Examples for poisonous plants.**

practical subjects

Week	Briefs
1	**Microscope: definition of microscope. b. Types of microscope**
2	**Microscopic evaluation of drugs.** **Plant cell: a. Cell wall. b. Tests for cellulose c. Test for lignin**
3-4	**cell contents:**
5-6-7	**a. Starch granules. b. Types and shapes of starch granules.** **c. Microscopic study for starch grains. d. Chemo microscopic tests for starch grain**
8	**Tissues sclerenchyma. a. Microscopic study for fibers.** **The vessels. a. Microscopic study for vessels .**
9	**Carbohydrates:**
10-13	a. **General test for carbohydrates.** b. **Tests for reducing sugars.** c. **Tests for distinguishing between monosaccharide and disaccharides.** d. **Tests for distinguishing between ketone and aldehyde.**

14 15	**Hydrolysis of sucrose and starch.** **Chemical tests for identification of isolated materials from plants.** **.**

Subject name	Arabic language	سموم	Studied year	No. of hour/week			
	English language	Toxicology		Theory	Practical	Total	No. of units
Teaching language	English		Second	2	-	2	2

Aims of subject:

Enable the students to understand the principles of Toxicology, mechanism of poisons actions and treatment of poisoning.

Theoretical subjects	
Week	**Briefs**
1	**Introduction to toxicology, terms and classification of toxic materials**
2	**Principles of toxicology.**
3	**Mechanism of toxicology, principles of treatment of poisoning, types of antidotes.**
4	**Disposition of toxicants, absorption, distribution, biotransformation and excretion**
5	**Toxic agents, pesticides, heavy metals, solvent and vapors.**
6	**Drugs poisoning, NSAIDS, barbiturates, benzodiazepam.**
7	**Antidepressant, nicotine, alcohol poisoning**
8	**Cyanide, CO and CO2 poisoning.**
9	**Anticholinergic drugs poisoning.**
10	**Radiations and radioactive materials.**
11	**Environmental toxicology, air pollution, smoke, smog.**
12	**Foods poisoning, bacterial poisoning, aflatoxin and mushroom.**
13	**Occupational toxicology.**
14	**Drugs toxicity during pregnancy.**
15	**Chemicals carcinogenesis.**