



**Ministry of Higher Education and Scientific Research**  
**Northern Technical University**  
**Technical Medical Institute / Kirkuk**  
**Department of Pharmaceutical Technology**



**Academic Program Description Form**  
**Department of Pharmaceutical Technology**  
**2025-2024**

**Technical Medical Institute / Kirkuk**

**Scientific Department: Pharmacy Technology**

**Academic System: Courses**

**Academic or Professional Program Title: Technical Diploma in Pharmacy**

**Final Degree Title: Technical Diploma in Pharmacy**

**Description Date: 10/5/2025**

**File Completion Date: 10/5/2025**



**Signature:**

**Head of Department: Asst. Prof. Dr. Iman Salman Hassan**

**Date:**



**Signature:**

**Scientific Assistant: Asst. Prof. Dr. Ali Najdat Nasrat**

**Date:**

**The file was reviewed by the Quality Assurance and University  
Performance**

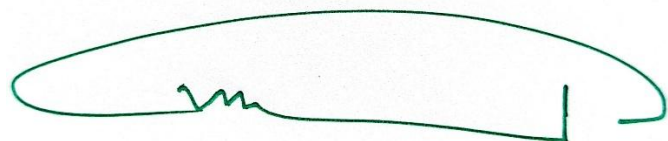
**Division**

**Director of Quality Assurance and University Performance:**

**Asst. Lect. Gul Jamin Medhat Abdullah**

**Date:**

**Signature:**



**Asst. Prof. Dr. Lizan Medhat Mohammed  
Dean**

## **Introduction:**

The educational program is a coordinated and organized package of courses that include procedures and experiences that are organized in the form of study vocabulary, the main purpose of which is to build and refine the skills of graduates, which makes them qualified to meet the requirements of the labor market, which is reviewed and evaluated annually through internal or external audit procedures and programs such as the external examiner program.

The description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that are being acquired for students based on the objectives of the academic program, and the importance of this description is evident because it represents the cornerstone of obtaining program accreditation and is co-written by the teaching staff under the supervision of the scientific committees in the scientific departments.

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous manual in light of the developments and developments of the educational system in Iraq, which included the description of the academic program in its traditional form (annual, quarterly), as well as the adoption of the description of the academic program circulated under the letter of the Department of Studies TM3/2906 on 3/5/2023 with regard to the programs that adopt the Bologna Track as the basis for their work.

In this regard, we can only emphasize the importance of writing the description of academic programs and courses to ensure the smooth functioning of the educational process.

## **Concepts and Terms:**

**Academic Program Description:** The academic program description provides a brief summary of its vision, mission, and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

**Course Description:** Provides a brief summary of the most important course features and the learning outcomes expected of the student to achieve, demonstrating whether they have made the most of the available learning opportunities. It is derived from the program description.

**Program Vision:** An ambitious picture of the future of the academic program to be an advanced, inspiring, stimulating, realistic, and viable program.

**Program Mission:** Briefly outlines the objectives and activities needed to achieve them, as well as outlines the program's development paths and directions.

**Program Objectives:** These are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

**Curriculum Structure:** All courses/subjects included in the academic program according to the approved learning system (semester, yearly, Bologna track), whether they are required (ministry, university, college, and scientific department) with the number of credits.

**Learning Outcomes:** A consistent set of knowledge, skills, and values acquired by the student after the successful completion of the academic program, and must determine the learning outcomes of each course in a way that achieves the goals of the program.

**Teaching and Learning Strategies:** These are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. That is, they describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

## **1. Program Vision**

Excellence in performance and leadership in technical education to meet the requirements of the field of work.

## **2. Program Mission**

Preparing an intermediate technical pharmaceutical staff capable of providing pharmaceutical and medical services that keep pace with scientific progress and increasing the number of intermediate pharmaceutical staff to provide pharmaceutical services at a level that achieves international quality standards approved by health institutions.

### 3. Program Objectives

Graduating qualified technical staff to work in the field of pharmaceuticals and pharmacy under the supervision of the pharmacist and in the field of pharmaceutical and chemical industries, whether in the country or the private sector, and these cadres will be able to work in pharmacies, read medical prescriptions, prepare and dispense medicines, work in stores and stores of medicines in laboratories, and manage the stages of storage, classification and arrangement.

### 4. Program Accreditation

There isn't any

### 5. Other External Influences

### 6. Program Structure

Reviews*	Percentage	Module	Number of Courses	Program Structure
Basic Course		18	9	Enterprise Requirements
			6	College Requirements
			23	Department Requirements
		6	1	Summer Training
				Other

### 7. Program Description. —

#### First Level Courses

نوع المتطلب	Course Code	Course Name	اسم المقرر	Lecture Hours	Practical Hours	عدد الوحدات
جامعية	NTU 100	Democracy and Human Rights	ديمقراطية و حقوق الانسان	2	0	2
	NTU 101	English language 1	اللغة الانكليزية 1	2	0	2
	NTU 102	Computer 1	الحاسوب 1	1	1	2
	NTU 103	Arabic language 1	اللغة العربية 1	2	0	2
	NTU 104	Physical Activity	الرياضة (اختياري)	1	1	2
	NTU105	French Language	اللغة الفرنسية (اختياري)	2	0	2
<b>Total required university units</b>				<b>10</b>		
معهد	TIMM 106	Physiology	علم وظائف الاعضاء	2	2	4
	TIMM 107	Anatomy	التشريح	2	2	4
	TIMM 108	Safety in lab. & workshop	سلامة المختبرات والورش	2	0	2
	TIMM 109	Medical terminology	المصطلحات الطبية	2	0	2
<b>Total units required by the institute</b>				<b>12</b>		
قسم	PHT112	Principles Pharmacy	مبادئ الصيدلة	2	2	4
	PHT113	Basics Of Organic Chemistry	اساسيات الكيمياء العضوية	2	2	4
	PHT114	Analytical Chemistry	كيمياء تحليلية	2	2	4
	PHT115	Pharmaceuticals Calculation	حسابات صيدلانية	2	2	4
	PHT116	Organic Chemistry	كيمياء عضوية	2	2	4
	PHT117	Biochemistry	كيمياء حيائية	2	2	4
	PHT118	First Aid	اسعافات اولية (اختياري)	2	0	2
	PHT119	Psychology	علم النفس (اختياري)	2	0	2
	PHT120	Microbiology	احياء مجهرية	2	2	4
<b>Total units required by the department</b>				<b>30</b>		
<b>Total units, first level</b>				<b>52</b>		

## - Second Level Courses

نوع المتطلب	Course Code	Course Name	اسم المقرر	Lecture Hours	Practical Hours	عدد الوحدات	
جامعية	NTU 201	Computer 2	الحاسوب 2	1	1	2	
	NTU 202	Arabic language 2	اللغة العربية 2	2	0	2	
	NTU 203	Crimes of the Baath regime in Iraq	جرائم نظام البعث في العراق	2	0	2	
	NTU 204	Professional Ethics	اخلاقيات المهنة	2	0	2	
<b>Total required university units</b>				<b>8</b>			
معهد	TIMM 202	Biostatistics	الإحصاء الحياتي	2	0	2	
<b>Total units required by the institute</b>				<b>2</b>			
قسم	PHT203	Pharmaceutics	صيدلانيات	2	2	4	
	PHT204	Industrial Principles	المبادئ الصناعية	1	1	2	
	PHT205	Principles Of Pharmaceutical Chemistry	مبادئ الكيمياء الصيدلانية	2	2	4	
	PHT206	Principles Of Drugs	مبادئ الدواء	2	2	4	
	PHT207	Medicinal Plants and Natural Products	النباتات الطبية والنواتج الطبيعية	1	2	3	
	PHT208	Basics Of Therapeutic Application	اساسيات التطبيقات العلاجية	1	2	3	
	PHT209	Toxicology	سموم	2	0	2	
	PHT210	Proposal	مشروع بحث	0	2	2	
	PHT211	Pharmaceutical Formulation	مشروع بحتمستحضرات صيدلانية	2	2	4	
	PHT212	Industrial Pharmacy	صيدلة صناعية	1	1	2	
	PHT213	Pharmaceutical Chemistry	كيمياء صيدلانية	2	2	4	
	PHT214	Pharmacology	علم الادوية	2	2	4	
	PHT215	Pharmacognacy	عقاقير	1	2	3	
	PHT216	Therapeutics Application	تطبيقات علاجية	1	2	3	
	PHT217	Community Health	صحة مجتمع (اختياري)	1	0	1	
	PHT218	Communication Skills	مهارات التواصل (اختياري)	1	0	1	
	<b>Total units required by the department</b>				<b>45</b>		
	<b>Total units, second level</b>				<b>55</b>		

## 8. Expected learning events for the program

### **Knowledge:**

- Describe the basic principles of medical, pharmaceutical, clinical, and social sciences relevant to the practice of pharmacy.
- Possess the ability to prepare, manufacture, and store medications properly.
- Optimize drug therapy and develop individual health care plans based on evidence-based medicine.
- Practice decision-making independently and in collaboration with the medical team, using research guidelines and skills to ensure the safety and effectiveness of patient care.
- Practice pharmacy as an active member of the health and community care system to promote health and the proper use of medications, and to provide advice on disease prevention and control.
- Practice the profession in a legal, ethical, and professional manner, appreciating the importance of self-development and continuing education.

### **Skills:**

- Apply knowledge, practical and industrial skills of handling, designing, pre-formulation, manufacturing development, packaging, storage and quality assurance of synthetic/natural pharmaceutical preparations including drug delivery system according to GLP, GSP and cGMP guidelines.
- Practice extraction/synthesis and analysis of pharmaceutical potential agents
- Utilize the pharmacokinetics, pharmacodynamics of medicines, pharmacogenetic profile and disease pathophysiology to dispense medication and ensure optimal pharmaceutical care for the patient in compliance with GPP and ethical manner.
- Utilize the management skills in procurement activities, inventory, distribution, pharmaceutical marketing, registration and documentation of interventions in patient's drug therapy and pharmaceutical products.
- Contribute in creating/improving national drug policies, laws and regulations related to the health care systems.

### **Value:**

- Develop life-long learning, in particular an awareness of the need for continuing education, scholarship and professionalism in the field of pharmaceutical practice.
- Demonstrate leadership, time management, critical thinking, problem solving, communication, independent, creativity, innovation, entrepreneurial, delegation and organizational skills
- Assess the requirements of research and resources of Information related to drug discovery, development of pharmaceutical products and pharmaceutical-care practice.

## 9. Teaching and learning strategies

The instructor explains the theoretical material on the blackboard using a slide projector, paper lectures, educational packages, and systematic and summer training in hospitals.

## 10. Evaluation methods

Daily, midterm and final tests, weekly report submission

## 11. Faculty

Table of the number of holders of postgraduate degrees in the Department of Pharmaceutical Technology

8	PhD	1
17	Master's	2
25	The Total	

Table of the number of holders of academic titles in the Department of Pharmaceutical Technology

2	Assistant Professor	1
8	Lecturer	2
15	Assistant Lecturer	3
25	The Total	

### Names of the faculty members of the Department of Pharmacy Technology for the academic year 2024-2025

Observations	Exact Specialization	Scientific Title	Certification	Name	NO.
Head of Department	Maternal and newborn nursing	Assistant Professor	Doctor	Iman Salman Hasan	1
Attributed to the College of Oil and Gas	Chemistry Sciences	Assistant Professor	Doctor	Kalawish Nuri Taher	2
Teaching	Inorganic chemistry	teacher	Doctor	Birgul Suleiman Mustafa	3

Teaching	Medical Microbiology	teacher	Doctor	Yuksel Ezzedine Sweid	4
Teaching	The Law of the Year	teacher	Doctor	Ali Adnan Alwan	5
Eng. Scholarships and Cultural Relations Unit	Biochemistry	teacher	Doctor	Noha Hamza Khader	6
Teaching	Jurisprudence and its Principles	teacher	Doctor	Jamal Fatih Ali	7
Sick leave	Analytical Chemistry	teacher	Doctor	Najwa Musa Latif	8
Eng. Studies and Planning Division	Clinical Diseases	teacher	Master	Ozdan Akram Gharib	9
Teaching	Inorganic chemistry	teacher	Master	Shanay Rajab Hassan	10
Teaching	Mechanical Engineering	Assistant Lecturer	Master	Hassan Mohamed Nouredine	11
Eng. Quality Assurance Division	bioscience	Assistant Lecturer	Master	Kol Jamin Medhat Abdullah	12
Teaching	Molecular Biology	Assistant Lecturer	Master	What any Ahmed Mohammed.	13
Teaching	Life Sciences/Environment	Assistant Lecturer	Master	Zahraa Falah Idan	14
Teaching	Pathological diagnoses	Assistant Lecturer	Master	Ghassan Jalal Aswad	15
Teaching	Science/Environment	Assistant Lecturer	Master	Alwan Qadir Ahmed	16
<b>Department Rapporteur</b>	Physics Sciences	Assistant Lecturer	Master	Asia Qadir Ahmed	17
Eng. Continuing Education Unit	Pathological diagnoses	Assistant Lecturer	Master	Muhammad Khader Bayez	18
Teaching	Arabic/Literature	Assistant Lecturer	Master	Hanan Mohamed Nasser	19
Teaching	Life Sciences/Parasites	Assistant Lecturer	Master	Marwa Abdulkarim Bakr	20
M. Higher Education Fund/Finance	Finance and Banking	Assistant Lecturer	Master	Khudair Ahmed Hamid	21
Teaching	Physics Sciences	Assistant Lecturer	Master	Sadiq Badr Nouri	22
Scientific Affairs	bioscience	Assistant	Master	Omaima	23

Unit		Lecturer		Abdulkarim Mohieddin	
Eng. Quality Assurance Unit	Agricultural Sciences/Horticulture	Assistant Lecturer	Master	Yildirim Fikret Abdurrazak	24
Teaching	Agricultural Science/Irrigation and Irrigation	Assistant Lecturer	Master	Enas Jamil Abdulwahab	25

## Professional development

### Guidance of faculty members

Faculty professional development is a fundamental pillar of ensuring the quality of education and enhancing the outcomes of the Department of Pharmacy Technology. It aims to equip faculty with modern skills and advanced teaching methods, including orientation for new faculty members to acclimate to the department's academic and administrative environment

Faculty orientation includes the following components

#### Initial Orientation Meeting

- Introduction to the department's vision, mission, and objectives
- Review of the department's organizational structure and committee responsibilities
- Introduction to the College and Faculty Handbooks
- Administrative and Academic Support
- Explanation of the assessment system, schedules, and course descriptions
- Introduction to the quality system, reporting and documentation requirements
- Assistance in preparing lectures and using learning management systems.

#### Research and Academic Guidance

- Identifying research paths appropriate to their specialization
- Informing them about publishing procedures and submitting research funding
- Encouraging them to participate in scientific conferences and seminars.

#### Cultural and Social Guidance

- Introducing them to the culture and values of the educational institution
- Facilitating their integration into the department's environment through informal meetings.

## 12. Acceptance criteria

1. Student admission criteria are determined by the central admissions

plan established by the Ministry, the student's branch in the preparatory school, their GPA, and their desire. This is followed by a special interview at the institute.

2. Medical examination results: The student must be healthy and fit to study in the department.
3. Desire.

### 13. The most important sources of information about the program

1. Educational resources.
2. External sources (the Internet).
3. Scientific research and its latest developments.
4. Textbooks.
- 5.

مخرجات التعلم المطلوبة من البرنامج												المرحلة الاولى/ صيدلة			
القيم				المهارات				المعرفة				اساسي أم اختياري	اسم المقرر	رمز المقرر	السنة / المستوى
ج 4	ج 3	ج 2	ج1	ب 4	ب3	ب2	ب1	أ4	أ3	أ2	أ1				
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	ديمقراطية	NTU10 0	2023- 2024
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	اللغة الانكليزية 1	NTU10 1	
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	الحاسوب 1	NTU10 2	-2023 2024
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	اللغة العربية 1	NTU10 3	
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اختياري	الرياضة	NTU10 4	-2023 2024
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اختياري	اللغة الفرنسية	NTU10 5	
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	وظائف الاعضاء	TIMM1 06	-2023 2024
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	التشريح	TIMM1 07	
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	سلامة المختبرات والورش	TIMM1 08	-2023 2024
ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	ع	اساسي	المصطلحات الطبية	TIMM1 09	

ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	مبادئ الصيدلة	PHTI11 2	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	اساسيات الكيمياء العضوية	PHTI11 3	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	كيمياء تحليلية	PHTI11 4	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	حسابات صيدلانية	PHTI11 5	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	كيمياء عضوية	PHTI11 6	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	كيمياء حيائية	PHTI11 7	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اختياري	اسعافات اولية اختياري	PHTI11 8	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اختياري	علم النفس اختياري	PHTI11 9	-2023 2024
ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	ے	اساسي	احياء مجهرية	PHTI12 0	-2023 2024

## Sample of teaching assignments for the Pharmacy Technology Department

الملاحظات	مجموع ساعات التكليف	الدراسة المسائية				الدراسة الصباحية				المعهد التقني الطبي			اسم التشكيل		
		عدد ساعات التكليف الإضافية	عدد ساعات التكليف الكلي	النصاب	المواد الدراسية		عدد ساعات التكليف الإضافية	عدد ساعات التكليف الكلي	النصاب	المواد الدراسية		الاختصاص	الشهادة	اللقب العلمي	اسم القسم العلمي
					النظري	العملي				النظري	العملي				الاسم الثلاثي
رئيس القسم / صياحي 4 ساعات و ممسلي 8 ساعات نظري في قسم التمريض	12	8			نصائفة 8=4*2	1	4	4	مكتبية		علوم التمريض	دكتوراه	استاذ مساعد	ايمان سلمان حسن	
مقرر القسم / لثيه ساعتان صياحي وساعتان ممسلي في قسم الميكانيكا/ الإلتياز	11	4			الحاسوب 4=4*1		7	8	مكتبية + حاسوب 4=4*1	حاسوب 1=2*2 ثاني	هندسة	ماجستير	مدرس مساعد	حسن حد نور الدين	
	17					7	17	10	مكتبية + اساسيات 8=4*2	اساسيات كيمياء عضوية 8=4*2 اول	علوم الكيمياء	دكتوراه	مدرس	بركل سليمان مصطفى	
	13					1	13	12	مكتبية + احياء مجهرية 8=4*2	احياء مجهرية 4=2*2 اول	طب وجراحة بيطرية	دكتوراه	مدرس	يوكسل عز الدين سويد	
تربسي في القسم تجاوز الخمسين	24	12			نباتات ونواتج طبية 8=4*2	2	12	10	مكتبية+نباتات ونواتج طبية 8=4*2	نباتات ونواتج طبية 4=4*1 ثاني	علوم الحياة	ماجستير	مدرس مساعد	شن اي احمد حد	
تربسي في القسم تجاوز الخمسين	16					6	16	10	كيمياء تحليلية 8=4*2	كيمياء تحليلية 8=4*2 اول	علوم الكيمياء	ماجستير	مدرس	شادي رجب حسن	
مسؤول وحدة البعثات والعلاقات	10						10	10	مكتبية	جرائم نظام البعث في العراق 5=2*10 ثاني	قانون	دكتوراه	مدرس	علي عدنان علوان	
	29	16			سموم 8=4*2	3	13	10	تطبيقات علاجية 4=2*2 + 4=2*2 مكتبية	سموم 8=4*2 ثاني	تطبيقات مرضية	دكتوراه	مدرس	نهى حمزة خضر	
تكملة نصاب في المسائي	10	3			مدائن 1*3=3 حاسوب		7	10	مكتبية + 4=4*1	اللغة العربية 2=2*1 ثاني	شريعة اسلامية	دكتوراه	مدرس	جمال فلاح علي	
	23	8			اساسيات كيمياء عضوية 8=4*2	1	15	14	مكتبية + احياء مجهرية + 4=2*2 + 4=2*2 صناعات 8=4*2	حاسوب 2=1*2	فيزياء	ماجستير	مدرس مساعد	صالح بدر نوري	
	29	14			صيدليات 6=3*2	1	15	14	صيدليات 6=3*2 + 8=4*2	صيدليات 8=4*2 ثاني	علوم الحياة	ماجستير	مدرس مساعد	مروه عبدالكريم بكر	
	26	14			احياء مجهرية 8=2*4		12	14	كيمياء صيدلانية 8=4*2	كيمياء صيدلانية 4=2*2 ثاني	علوم الحياة	ماجستير	مدرس مساعد	زهراء فلاح عيدان	
	26	12			احياء مجهرية + 8=4*2 + 8=4*2 صيدليات		14	14	نباتات طبية 8=4*2 + كيمياء صيدلانية 8=4*2 + 8=4*2		علوم الفيزياء	ماجستير	مدرس مساعد	اسيا قادر احمد	
	27	12			مدائن كيمياء الصيدلانية 4	1	15	14	نباتات طبية 2=1*2 كيمياء صيدلانية 8=4*2 + 8=4*2	كيمياء صيدلانية 4=2*2 ثاني	طب باطني	ماجستير	مدرس مساعد	غسان جلال اسود	
مسؤول شعبة صندوق التعليم العالي تكملة نصاب في المسائي	23	16			جرائم البعث في العراق 16=8*2	7	10	10	مكتبية	جرائم نظام البعث في العراق (6=3*2) ثاني	ادارة	ماجستير	مدرس مساعد	خضير احمد حميد	
مسؤول وحدة التعليم المستمر	29	12			مدائن الهواء 4=2*2	7	17	10	مدائن الهواء 2=1*2 + 8=4*2	مدائن الهواء 8=4*2 ثاني	طب باطني	ماجستير	مدرس مساعد	هد خضر بايز	
تفرغ جزئي / دكتوراه	15	8			لغة 2*4=8 عربية	1	7	6	مكتبية	اللغة العربية 6=3*2 ثاني	اللغة العربية	ماجستير	مدرس مساعد	حنان حد ناصر	
	9	4			حاسوب 2=1*2		5	14	مكتبية + حاسوب 2=2*1	حاسوب 2=2*1 اول	البرمجيات	ماجستير	مدرس مساعد	عيسى عبدالله	
معاون العلمي	4						4	4	مكتبية + حاسوب 4=4*1		الالكترونيك والاتصالات	دكتوراه	استاذ مساعد	علي نجند نصرت	
مقرر القسم قسم الصحة تكملة النصاب	2						2	10		ثاني 2=1*2 حاسوب	حاسوب	ماجستير	مدرس مساعد	مهدي فاضل	
مسؤولة وحدة التدريب الصيفي تربسي في القسم تجاوز الخمسين	16						16	10	كيمياء تحليلية (8=4*2) و لنباتات الطبية و النواتج الطبيعية	نباتات ونواتج طبية 4=2*2 ثاني	علوم الحياة	ماجستير	بايولوجي اقدم	اميمة عبدالكريم	
تربسي في القسم تجاوز الخمسين	24	16			اساسيات كيمياء 8=4*2		8	8	كيمياء عضوية 8=4*2		علوم الكيمياء	بكالوريوس	ر.مترين قنين اقدم	ميساء صلاح الدين صديق	
مختبر صيدلة	28	12			مدائن الهواء 8=2*2 تطبيقات	4	16	20	مدائن الهواء 8=4*2 تطبيقات علاجية 8=4*2		تقنيات الصيدلة	دبلوم صيدلة	معاون فني	مريم ليمان فاضل	
تربسي في القسم تجاوز الخمسين تكملة نصاب في المسائي	8	4			حاسوب 4=1*4		4	8	حاسوب 4=4*1		علوم حاسبات	ر.مترين قنين اقدم	قنين اقدم	نهال عباس مجيد	

26	يحيى اسماعيل علي	ر.مترين فنيين اقدم	بكالوريوس	الاجتماعيات	حاسوب 4=4*1	8	4	8	4=4*1	قسم النشاطات اللاصفية تكلمة نصاب في المسائي	8
27	هديل هاتف محمود	رئيس كيمياويين	بكالوريوس	علوم الكيمياء	كيمياء تحليلية 2*2=4 تطبيقات علاجية 2*2=4+مبادئ; الدواء	20	24	4			24
28	روزان غالب حميد	م.مهندس زراعي	بكالوريوس	البيستنة والهندسة الحدائق	نباتات طبية 2*2=8	8	8			مسؤولة وحدة العلمية	8
29	علي طارق عمر	مدرب فني	دبلوم تقني	منفي	حاسوب 2*4=8	8	8			وحدة برنامج الحكومي	8
30	اوزكور ابراهيم	مدرب فني اقدم	بكالوريوس	حسابات	حاسوب 2*4=8	8	8		حسابات علي 12=6*2	مركز الحاسبة	20
31	هالة عدنان علي	ر كيمياويين	بكالوريوس	كيمياء	اساسيات تطبيقات العلاجية (2*4=8)+ كيمياء تحليلة 2*4=8	12	16	4			16
32	انتصار احمد هدي علي	مدرب فني	بكالوريوس	اتصالات	حاسوب 4=4*1	8	4		حسابات علي 4=4*1	وحدة الحاضنة تكلمة نصاب في المسائي	8
33	الوه ن فادر احمد	مدرس مساعد	ماجستير	بيئة	كيمياء عضوية 8=4*2 كيمياء تحليلية 2*4=8	14	16	2	اساسيات كيمياء عضوية 2*4=8		24
34	منى هدي نجيب	مدرب فني	بكالوريوس	علوم الحياة	احياء مجهرية 2*4=8 كيمياء عضوية 2*4=8; نباتات	16	24	8		مسؤول لجنة الغيابات	24
35	حنان عبداللطيف هدي	مدرب فني	دبلوم منفي	منفي	حاسوب 1*4=4	8	4		حسابات علي 4=4*1	مكتب العيد تكلمة نصاب في المسائي	8
36	فاطمة محمود مصطفى	مدرب فني	دبلوم منفي	منفي	حاسوب 1*4=4	8	4		حاسوب 4=4*1	مكتب العيد تكلمة نصاب في المسائي	8
37	سوسن عدنان علي	م ر مترين فنيين	بكالوريوس	احصاء	حاسوب 1*4=4	8	4		حاسوب 4=4*1	مخزن الرئيسي تكلمة نصاب في المسائي	8
38	رامي جمال بنينان	مدرب فني	بكالوريوس	زراعة	نباتات طبية = 2*4=8	8	8			متابعة تكلمة نصاب في المسائي	8
39	نمام قدرت عبدالله	مدرب فني	دبلوم	ادارة قانونية	نباتات طبية 2*4=8 تطبيقات علاجية 2*4=8	14	16	2		مكرتارية القسم	16
40	هدد حميد رشيد	مدرب فني	بكالوريوس	اللغة العربية	حاسوب 1*4=4	8	4		حاسوب 4=4*1	متابعتكلمة نصاب في المسائي	8
41	نرمين خالد خزل رشيد	م.مدير فني	دبلوم	أنظمة حاسوب	حاسوب 1*4=4	8	4		حاسوب 4=4*1	القلم السري تكلمة نصاب في المسائي	8
42	احمد عز الدين عبدالله	مدرب فني	دبلوم	ادارة	حاسوب 1*4=4	8	4		حاسوب 4=4*1	ضمان الجودة تكلمة نصاب في المسائي	8
43	فاطمة عباس عبدالله	ر.مهندسين فنيين اقدم	بكالوريوس	حاسوب	حاسوب 1*4=4	8	4		حاسوب 4=4*1	مسؤول شعبة الشؤون الطلبة تكلمة نصاب في المسائي	8
44	حسن اسماعيل رضا	مدرس مساعد	ماجستير	هندسة ميكاتريك	حاسوب 1*4=4		8		حاسوب 4=4*1	مسؤول الخدمات	8
45	سعد احمد محمود	مدرس	دكتوراه	علوم التمريض	تشريح 2*4=8 اول ,		16		تشريح 2*4=8 , تشريح 2*4=4	تعاون مؤسسي/ دائرة صحة كركوك	28
46	مرغوب حسين ياس	مدرس	دكتوراه	علوم التمريض	مبادئ الصيدلة 2*4=8 اول		16		مبادئ الصيدلة 2*4=8	تعاون مؤسسي/ دائرة صحة كركوك/معهد الصحة العالي	28
47	فاطمة كتعان فاتح	مدرس مساعد	ماجستير	كيمياء حياتية	سلامة المختبرات والورش 2*4=8 اول		8		سلامة المختبرات والورش 2*4=8	تعاون مؤسسي/ كلية طب الاسنان	16
48	خلود اياد مجيد	مدرس مساعد	ماجستير	تشريح الاجنة	تطبيقات علاجية 2*4=8 ثاني		8		تطبيقات علاجية 2*4=8	تعاون مؤسسي/ كلية طب الاسنان	24
49	ايلاف مصطفى مظفر	مدرس مساعد	ماجستير	صيدلانية	صيدلة صناعية 2*4=8 ثاني		12		صيدلة صناعية 2*4=8	تعاون مؤسسي/ دائرة صحة كركوك	28
50	ايناس رفعت هدي	مدرس مساعد	ماجستير	احياء مجهرية	مكتبية 2*4=8 احياء مجهرية	14	13		كيمياء 2*4=8 تحليلية	التقنية الصحية والطبية	25
51	حنان فيصل غازي	مدرس مساعد	ماجستير	اللغة الانكليزية	سلامة المختبرات والورش 2*4=8		10	8	سلامة المختبرات والورش 2*4=8	مسؤول وحدة مستودع الرقي تكلمة نصاب في المسائي	16

**Curriculum of the Department of Pharmacy Technologies**

**Democracy and Human Rights**

**1. Course Structure**

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Human Rights, Definition, Objectives Human Rights in Ancient</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>1</b>

		<b>Civilizations / Human Rights in the Heavenly Laws</b>			
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Human Rights in Contemporary and Modern History (International Recognition of Human Rights since the First World War and the League of Nations) / Regional Recognition of Human Rights: European Convention on Human Rights 1950, American Convention on Human Rights 1969, African Charter on Human Rights 1981, Arab Charter on Human Rights 1994</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>2</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Non-Governmental Organizations and Human Rights (ICRC, Amnesty International, Human Rights Watch, National Human Rights Organizations)</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>3</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Human Rights in Iraqi Constitutions between Theory and Reality / The Relationship between Human Rights and Public Freedoms: 1- In the Universal Declaration of Human Rights. 2. In regional charters and national constitutions.</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>4</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Economic, Social and Cultural Human Rights , Civil and Political Human Rights / Modern Human Rights: Realities in Development , Right to a Clean Environment , Right to Solidarity , Right to Religion</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>5</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Guarantees of respect and protection of human rights at the national level, Guarantees in the Constitution and laws, Guarantees in the principle of the rule of law, Guarantees in constitutional oversight, Guarantees in freedom of the press and public opinion, Role of NGOs in respect and protection of human rights/ Guarantees, respect and protection of human rights at the international level: 1. Role of the United Nations and</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>6</b>

		<p>its specialized agencies in providing safeguards</p> <p>2- The role of regional organizations (Arab League, European Union, African Union, Organization of American States, ASEAN.</p> <p>3. The role of regional international non-governmental organizations and public opinion in respecting and protecting human rights</p>			
Tests & Reports	theoretical	<p>The General Theory of Freedoms: The Origin of Rights and Freedoms, The Legislator's Position on Public Rights and Freedoms , The Use of the Term Public Freedoms</p>	Knowledge and Application	2	7
Tests & Reports	theoretical	<p>Regulating Public Freedoms from the Perspective of Equality: The Historical Development of the Concept of Equality</p> <p>The Modern Development of the Idea of Equality</p> <p>- Gender equality</p> <p>- Equality of individuals according to their beliefs and race to public authorities</p>	Knowledge and Application	2	8
Tests & Reports	theoretical	<p>Freedom of Learning, Freedom of the Press, Freedom of Assembly</p> <p>Freedom of association, freedom of action</p> <p>Right of ownership</p>	Knowledge and Application	2	9
Tests & Reports	theoretical	<p>Freedom of trade and industry</p> <p>Freedom of security and a sense of reassurance</p> <p>Freedom to go back and forth</p> <p>Freedom of trade and industry</p> <p>Women's Freedom</p>	Knowledge and Application	2	10
Tests & Reports	theoretical	<p>Scientific and Technical Progress and Public Freedoms</p> <p>The Future of Public Freedoms</p>	Knowledge and Application	2	11
Tests & Reports	theoretical	<p>The crime of genocide</p>	Knowledge and Application	2	12
Tests & Reports	theoretical	<p>Democracy, its characteristics and types</p>	Knowledge and Application	2	13
Tests &	theoretical	<p>Elections: Definition and Types</p>	Knowledge	2	14

<b>Reports</b>			<b>and Application</b>		
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Contemporary Political Systems</b>	<b>Knowledge and Application</b>	<b>2</b>	<b>15</b>

<b>English</b>					
<b>2. Course Structure</b>					
<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 1 / Hello</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>1</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Unit 2 / Your world</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>2</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 3 / All about you</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>3</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Unit 4 / Family and Friends</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>4</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 5 / The way I live</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>5</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Unit 6 / Every day</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>6</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 7 / My favourite</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>7</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Unit 8 / Where I live</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>8</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 9 / Times past</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>9</b>
<b>Tests &amp;</b>	<b>theoretical</b>	<b>Unit 10 / We had a great</b>	<b>Grammar/</b>	<b>2</b>	<b>10</b>

<b>Reports</b>		<b>time!</b>	<b>Vocabulary/ Skills Work/ Everyday English</b>		
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 11 / I can do that</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>11</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Unit 12 / Please and Thank you</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>12</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Unit 13 / Here and now</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>13</b>
<b>Tests &amp; Reports</b>	<b>theoretical</b>	<b>Unit 14 / It's time to go</b>	<b>Grammar/ Vocabulary/ Skills Work/ Everyday English</b>	<b>2</b>	<b>14</b>
<b>Discussion</b>	<b>theoretical</b>	<b>Review</b>	<b>Review</b>	<b>2</b>	<b>15</b>

## Computer

### 3. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Introduction to Computer / Computer System / Information Technology / Types of Computers / Input Units / CPU / Output Units / Main Memory and its Types / Data Storage in Memory / Factors Affecting Computer Performance Definition of software and its types / Systems software: operating systems / programming languages and software systems / applied software.</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>1&amp;2</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Introduction to Windows / Features / Device Operation / Device Closure / Use Mouse / Windows Screen Components : Taskbar : Icons : and their</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>3</b>

		<b>Types (Standard and General ).</b>			
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Control Panel / Desktop Control / Screen Saver / Window Colors &amp; Fonts / Screen Settings / Adjust Screen Colors / Adjust Time &amp; Date / Volume / Change Between Mouse Buttons / Double-Click Speed Control / Change Mouse Cursor / Control Mouse Speed / Install &amp; Uninstall Programs</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>4</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Zoom in and out of the window / Final close / Temporary close / Move the window / Control the window capacity / Run apps and programs</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Arrange Start Menu Items / Delete Start Menu Items / Add a Submenu to Start Menu / Add a New Button to Start Menu</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>6</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Platform Info / Turn Off Undesirable Apps Windows Explorer Window Finder / My computer Icon / My computer Window Parts</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>7</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Recycle Bin (Delete, Recover and Empty Basket) / My Document Icon</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>8&amp;9</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Define Files &amp; Folders / Select Files &amp; Folders / Properties Files &amp; Folders Definition &amp; Folders / Create Files &amp; Folders / Change Files &amp; Folders / Move File &amp; Folder / Copy File &amp; Folder / Search for File &amp; Folder / Create a Shortcut Icon for an Application or File</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>10&amp;11</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Calculator / Notepad / Notebook / Use Notepad to edit and create file Painter / Screen Components / Create Graphics / Select Front and Background Colors / Choose Brush Line Size /</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>12&amp;13</b>

		<b>Select and Pick Drawing Tool / Save Drawing / Make Drawing Background for Desktop / Finish Paint Entertainment Media Player Software</b>			
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Viruses / Reason for naming / Definition / Ways of spreading the virus / Symptoms of infection with the virus / Methods of protection / Types of viruses Computer Crimes/Theft/Hackers</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>14&amp;15</b>

### Arabic Language

#### 4. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Introduction to Linguistic Errors – Bound T and Open T</b>	<b>1. Identify the types of linguistic errors. 2. Differentiate between open and tethered</b>	<b>2</b>	<b>1</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Elongated and compartmentalized alphabet writing rules – solar and lunar letters</b>	<b>1. Differentiating between the elongated and the compartmentalized thousand and the places where the two thousand are written 2. Differentiating between solar and lunar letters</b>	<b>2</b>	<b>2</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Al-Dhad and Al-Dhaa</b>	<b>Differentiating between Dhaad and Dhaa</b>	<b>2</b>	<b>3</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Writing Hamza</b>	<b>Enable the student to write the Hamza correctly</b>	<b>2</b>	<b>4</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Punctuation</b>	<b>Recognize punctuation marks and write them in their correct location</b>	<b>2</b>	<b>5</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture</b>	<b>Noun and verb and differentiate between</b>	<b>1. Recognize the noun and verb and</b>	<b>2</b>	<b>6</b>

	<b>Method</b>	<b>them</b>	<b>indicate the sign of each of them</b> <b>2. Differentiate between noun and verb</b> <b>3. Statement of the types of verb</b> <b>4. Differentiating between types of verbs</b>		
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Effects</b>	<b>Identify and differentiate between types of actions</b>	<b>2</b>	<b>7</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Number</b>	<b>Enable the student to write the numbers correctly</b>	<b>2</b>	<b>8</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Common Applications of Language Errors</b>	<b>Recognize and avoid common language mistakes</b>	<b>2</b>	<b>9</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Common Applications of Language Errors</b>	<b>Recognize and avoid common language mistakes</b>	<b>2</b>	<b>10</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Noun and Tanween Meanings of Prepositions</b>	<b>1. Differentiating between noon and noon</b> <b>2. Recognize the meanings of prepositions</b>	<b>2</b>	<b>11</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Formalities of Administrative Discourse</b>	<b>Identify the formal aspects of administrative discourse</b>	<b>2</b>	<b>12</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>The Language of Administrative Discourse</b>	<b>Familiarity with the language of administrative discourse</b>	<b>2</b>	<b>13</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>The Language of Administrative Discourse</b>	<b>Familiarity with the language of administrative discourse</b>	<b>2</b>	<b>14</b>
<b>Oral Test</b>	<b>Discussion Method, Lecture Method</b>	<b>Sample Administrative Correspondence</b>	<b>Identify samples of administrative correspondence</b>	<b>2</b>	<b>15</b>

**Sports**

### 5. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
Tests & Reports	Practical + Theoretical	Sport: its definition, importance and types	Knowledge and Practical Application	2	1
Tests & Reports	Practical + Theoretical	Mechanism of movement of the human body	Knowledge and Practical Application	2	2
Tests & Reports	Practical + Theoretical	Common Sports Injuries	Knowledge and Practical Application	2	3
Tests & Reports	Practical + Theoretical	Basic Basketball Skills	Knowledge and Practical Application	2	4
Tests & Reports	Practical + Theoretical	International Basketball Law	Knowledge and Practical Application	2	5
Tests & Reports	Practical + Theoretical	Basic Skills of Table Tennis and International Law	Knowledge and Practical Application	2	6
Tests & Reports	Practical + Theoretical	Basic Skills of Volleyball and International Law	Knowledge and Practical Application	2	7
Tests & Reports	Practical + Theoretical	Swimming	Knowledge and Practical Application	2	8
Tests & Reports	Practical + Theoretical	Basic Tennis Skills and International Law	Knowledge and Practical Application	2	9
Tests & Reports	Practical + Theoretical	Basic Skills of Handball	Knowledge and Practical Application	2	10
Tests & Reports	Practical + Theoretical	International Law of Handball	Knowledge and Practical Application	2	11
Tests & Reports	Practical + Theoretical	Arena and Field Games (Types, International Law of the Game)	Knowledge and Practical Application	2	12
Tests & Reports	Practical + Theoretical	Basic Skills for Soccer	Knowledge and Practical Application	2	13
Tests & Reports	Practical + Theoretical	Sport Competitions and Competitions Department	Knowledge and Practical Application	2	14
Tests & Reports	Practical + Theoretical	Sports Laws and Legislation	Knowledge and Practical Application	2	15

### Physiology

### 6. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
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test	Lecture and Laboratory	Body systems. Its functions, Blood smear. Blood, Plasma : their functions.	Body systems. Their functions, blood smears. Blood and plasma functions	4	1
test	Lecture & Lab	Anemia deficiency of iron, and Vit., B12, Blood cells, types and function.	Iron and vitamin B12 deficiency anemia, blood cells, their types and functions	4	2
test	Lecture and Laboratory	Blood clotting. its factors and sites. Plasma proteins. its functions.	Blood clotting. Its factors and locations. Plasma proteins and their functions.	4	3
test	Lecture and Laboratory	Cardiovascular system, blood grouping. Erythroblastosis. Heart muscles, physiology of the heart.	Vascular system, blood groups. Red blood cell blasting. Heart muscles. Heart Physiology	4	4
test	Lecture and Laboratory	Blood circulation, blood to body tissues. Blood pressure, pulse	Blood circulation, blood to tissue, blood pressure, pulse	4	5
test	Lecture and Laboratory	Factors affecting heart rate. Respiratory system, structural and function.	Factors that affect heart rate. Respiratory, structure and function.	4	6
test	Lecture and Laboratory	Lung volume, estimation. Spirometer. Hypoxia. Anoxia. its types	Lung size, estimate. Spirometer. Hypoxia. Types	4	7
test	Lecture and Laboratory	Effects of hypoxia respiratory centers. Central and peripheral nervous system	Effects of hypoxia on respiratory centers. Central and peripheral nervous system	4	8
test	Lecture and Laboratory	Nerve. its function & physiology. Autonomic nervous system.	Nerve. His job and his philosophy. Autonomic nervous system	4	9
test	Lecture and Laboratory	Central nervous system. Cerebellum function and body balance.	Central nervous system. Cerebellar function and body balance.	4	10
test	Lecture and Laboratory	Physiology of digestion. steps of digestion. Accessory organs of digestive system. pancreas function.	Physiology of digestion. Digestion steps. Accessory organs of the digestive system. Pancreatic function.	4	11
test	Lecture,	Digestive system. function of each part.	Gastrointestinal function. Function of	4	12

		<b>Non digestive function of the pancreas, diabetes mellitus.</b>	<b>each part. Non-gastroinerive function of the pancreas, diabetes.</b>		
<b>test</b>	<b>Lecture and Laboratory</b>	<b>Urinary tract system function of each part. Urination.</b>	<b>The function of each part of the urinary tract system. Urinating</b>	<b>4</b>	<b>13</b>
<b>test</b>	<b>Lecture and Laboratory</b>	<b>Endocrine system, glands, Function. Function of endocrine hormones</b>	<b>Endocrine system, glands, and their functions. Function of Endocrine Hormones</b>	<b>4</b>	<b>14</b>
<b>test</b>	<b>Lecture, Laboratory</b>	<b>Temperature regulation. Hypothermia. Frostbite Hyperthermia, Heat stroke.</b>	<b>Temperature regulation. Low body temperature. Frostbite, Heat stroke.</b>	<b>4</b>	<b>15</b>

### vivisection

### 7. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Hours</b>	<b>The week</b>
<b>test</b>	<b>Lecture, Discussion, Video Presentation , Puppet Training, Live App</b>	<b>Anatomical Positions: Give a description of all the positions of the human body. Superficial anatomy of the heart: Describe the position of the heart by the chest wall and the number of ribs.</b>	<b>4</b>	<b>1</b>
<b>test</b>	<b>Lecture, Discussion, Video Show</b>	<b>Superficial anatomy of the lungs: Describe the position of the lungs by chest wall and number of ribs. Abdominal Surface Anatomy: Drawing the areas of the abdominal surface according to horizontal and vertical lines.</b>	<b>4</b>	<b>2</b>
<b>test</b>	<b>Lecture, Discussion, Video Show</b>	<b>Gastric anatomy: Clarifying the relationship between the stomach and other organs in the abdomen. Anatomy of the liver and spleen: Presentation of the areas of the liver and spleen according to the superficial anatomy of the abdomen.</b>	<b>4</b>	<b>3</b>
<b>test</b>	<b>Lecture, Discussion,</b>	<b>Intestinal anatomy: Clarifying the relationship of the intestine to other organs in the abdomen.</b>	<b>4</b>	<b>4</b>

	<b>Video Presentation , Sculpture Show</b>	<b>Appendix anatomy: Identification of the appendix area in the right iliac region.</b>		
<b>test</b>	<b>Lecture, Discussion, Video Presentation , Sculpture Show</b>	<b>Gallbladder anatomy: Identification of the gallbladder area in the area under the right ribs. Define the uterine area in the suprapubic area.</b>	<b>4</b>	<b>5</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Show , display of models</b>	<b>Skeletal anatomy: Description of the central skeleton: Skull - spine and peripheral bones. Shoulder bones: The width of the shoulder bones on the skeleton, which are the scapula and clavicle.</b>	<b>4</b>	<b>6</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Presentation , Sculpture Show</b>	<b>Arm bones: The width of the arm bones (humerus). Forearm bones: width of the ulna bone and radius bone.</b>	<b>4</b>	<b>7</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Presentation , Sculpture Show</b>	<b>Hand bones: the width of the hand bones, wrist bones, carpal episcopate, and spatula. Pelvic bones: The width of the pelvic bones, which are: ilium, ischemia, and sacrum.</b>	<b>4</b>	<b>8</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Presentation , Sculpture Show</b>	<b>Femur bones: The skeleton width of the femur with the lower and upper limbs. Leg bones: The width of the bones, which are: bones (tibia and fibula) Dislocation of the femur and foot.</b>	<b>4</b>	<b>9</b>
<b>test</b>	<b>Lecture, Discussion, Video Presentation , Sculpture Show</b>	<b>Foot bones: Description of bones, which are: (wrist bone, metatarsal, spalums). Cranial bones: the nomenclature of the bones on all surfaces of the skull.</b>	<b>4</b>	<b>10</b>
<b>test</b>	<b>Lecture, Discussion, Video Presentation , Sculpture Show</b>	<b>Spine bones: Clarification of vertebral types and numbers. Shoulder muscle: View models of all shoulder muscles.</b>	<b>4</b>	<b>11</b>
<b>test</b>	<b>Lecture, Discussion, Video Presentation</b>	<b>Anatomy of the chest wall: Presentation of the types and numbers of ribs and clarification of the sternum. Chest and abdominal muscles: Identify the</b>	<b>4</b>	<b>12</b>

	, Sculpture Show	names of the muscles of the chest wall and abdominal wall.		
test	Lecture, Discussion, Video Presentation, Sculpture Show	Back and gluteal muscles: Width of the back and gluteal muscles. Gastrointestinal anatomy: Presentation of the model of the gastrointestinal organs.	4	13
test	Lecture, Discussion, Video Presentation, Sculpture Show	Anatomy of the cardiocirculatory system: Presentation of the model of organs which is the heart and blood vessels. Respiratory: Clarification of the lungs, trachea, and bronchioles.	4	14
test	Lecture, Discussion, Video Presentation, Sculpture Show	Genitourinary system: Presentation of the kidneys and urinary bladder with uterus and prostate projection. Central nervous system: description of the brain, cerebellum, medulla oblongata and spinal cord.	4	15

### Safety Laboratories & Workshops

#### 8. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
Feedback by asking questions	Discussion Method	Basic equipment to be available in the laboratory (laboratory arrangement)	The student should be familiar with the basic equipment that must be provided in the laboratory.	2	1
Feedback by asking questions	Discussion Method	Safety Precautions When Handling Laboratory Instruments, Chemicals	Student's understanding of safety precautions when handling laboratory instruments /chemicals	2	2
Feedback by asking questions	Discussion Method	Safety precautions when completing laboratory work and storing and preserving materials	Teaching students the mechanism of work and safety precautions when completing laboratory work	2	3

			<b>and storing and preserving materials.</b>		
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Fires and their types. and means of extinguishing it</b>	<b>The student should distinguish between fires, their types and means of extinguishing them.</b>	<b>2</b>	<b>4&amp;5</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Personal Protective Equipment</b>	<b>Students should be familiar with personal protective equipment</b>	<b>2</b>	<b>6</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Chemical hazards and how to deal with them</b>	<b>Students should be familiar with the types of chemical hazards and how to deal with them.</b>	<b>2</b>	<b>7</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Radiation hazards</b>	<b>Students should be familiar with the types of radiation hazards</b>	<b>2</b>	<b>8</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Biological hazards</b>	<b>Students should be familiar with the types of biological hazards.</b>	<b>2</b>	<b>9</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Disposal of laboratory (medical) waste: Use of warning signs in the laboratory</b>	<b>Students should be familiar with the types of laboratory (medical) waste.</b>	<b>2</b>	<b>10&amp;11</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>First Aid in Laboratories</b>	<b>Students should be familiar with the types of accidents and first aid</b>	<b>2</b>	<b>12&amp;13</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Other environmental factors and their impact on safety and health (light, noise, heat and humidity)</b>	<b>The student should be familiar with the physical factors that are harmful to the work environment</b>	<b>2</b>	<b>14</b>
<b>Feedback by asking questions</b>	<b>Discussion Method</b>	<b>Safety in Field Studies</b>	<b>Students should be familiar with the types of field studies</b>	<b>2</b>	<b>15</b>

## Medical Terminology

### 9. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
Oral Test	Lecture - Discussion of Acting by Drawing on the Board, PowerPoint	The first lecture was "Introduction to Medical Terminology"	Introducing students to the importance of the medical terminology course and what it is	2	1
Oral Test	Lecture, discussion, video presentation, and PowerPoint	Second Lecture " Basic Structure of Words"	Recognize the structure of the medical term and its basic parts	2	2
Oral Test	Lecture - Discussion - PowerPoint Presentation , Acting with Couples	The Third Lecture "The Root"	Identifying the root of the word for a medical term	2	3
Oral and Practical Testing	Lecture, discussion, video presentation , and photo presentation	Fourth Lecture " The Introductory"	Identify syllables that are added to the beginnings of the medical term	2	4
Practical and Oral Testing	Lecture, discussion, video and photo presentation	The Fifth Lecture "After"	Identify syllables that are added to the ends of the medical term	2	5
Practical test	Lecture, Discussion, Lecture Video Show	Sixth Lecture "Rules of Mobile Linkage"	Learn how to link medical terms	2	6
Practical and Oral Testing	Lecture, Discussion, Slideshow	Seventh Lecture " Forms of Linkage"	Identify the types of linking of medical terms	2	7
Practical test	Lecture, discussion, video and photo presentation	Eighth Lecture " Medical Terminology and Pathology"	Identify the most important medical terms and pathology concepts	2	8
Practical test	Lecture, discussion,	Lecture Nine: " Terminology of the	Identify the most important medical	2	9

	<b>video and photo presentation</b>	<b>Cardiovascular System" "Terminology of the Nervous System"</b>	<b>terms related to the heart, circulation and nervous system, its constituent parts and the most common diseases</b>		
<b>Practical test</b>	<b>Lecture, discussion, video and photo presentation</b>	<b>Tenth Lecture " Gastrointestinal Terminology Urinary System Terminology "</b>	<b>Identify the most important medical terms related to the digestive and urinary systems, its constituent parts and the most common diseases</b>	<b>2</b>	<b>10</b>
<b>Practical test</b>	<b>Lecture, discussion, video and photo presentation</b>	<b>Eleventh Lecture " Terminology of Blood and Lymphatic System"</b>	<b>Identify the most important medical terms related to blood and the lymphatic system, its constituent parts and the most common diseases</b>	<b>2</b>	<b>11</b>
<b>Practical test</b>	<b>Lecture, discussion, video and photo presentation</b>	<b>Lecture 12 "Respiratory Terminology"</b>	<b>Identify the most important medical terms related to the respiratory system, its constituent parts and the most common diseases</b>	<b>2</b>	<b>12</b>
<b>Practical test</b>	<b>Lecture, discussion, video and photo presentation</b>	<b>Thirteenth Lecture "Teeth and Face and Jaws"</b>	<b>Identify the most important medical terms for teeth and maxillofacial</b>	<b>2</b>	<b>13</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation of Photo Videos</b>	<b>Fourteenth Lecture "Terminology of Situations and Trends"</b>	<b>Identify the most important medical terms related to situations and trends</b>	<b>2</b>	<b>14</b>
<b>Practical and Oral Testing</b>	<b>Lecture, discussion, video and photo presentation</b>	<b>Fifteenth Lecture "Musculoskeletal Terminology"</b>	<b>Identify the most important medical terms related to the musculoskeletal system, its constituent parts and the most common diseases</b>	<b>2</b>	<b>15</b>

## Principles of Pharmacy

### 10. Course Structure

<b>Evaluation</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Outputs</b>	<b>Hours</b>	<b>The week</b>
test	Lecture, Discussion, Presentation	Science of pharmacy, definitions ----- Practical : General term in practical pharmaceutics	Introduce students to the basic concepts of pharmacology ----- Basic Practical Pharmacology Terminology	4	1
test	Lecture, Discussion, Presentation	Weight and measures ----- Practical : roman numerals	Weights and Measurements ----- Practical side Roman numerals discussion	4	2
Practical test	Lecture, Discussion, Presentation	Pharmaceutical dosage forms , aromatic water ----- Practical : Seminar	Pharmaceutical Formulas and Aromatic Water ----- Practical side Introductory Talk	4	3
test	Lecture, Discussion, Presentation	Medical prescription ----- Practical : Routes of Administration	Prescription ----- Practical side Methods of administering the drug	4	4
test	Lecture, Discussion, Presentation	Pharmaceutical technique ----- Practical : Practical : Discussion	Pharmaceutical Technology ----- Practical side discussion	4	5
Practical test	Lecture, Discussion, Presentation	Solubility, solute and solvent ----- Practical : Seminar	Solubility, Solvent and Solvent ----- Practical side Introductory Talk	4	6
test	Lecture, Discussion, Presentation	Drug formulation ----- Practical : Cosolvent	Drug formulations ----- Practical side Solubility aids	4	7
Practical test	Lecture,	Drug stability	Drug stability	4	8

	<b>Discussion, Presentation</b>	<b>----- Practical : Discussion</b>	<b>----- Practical side discussion</b>		
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Drug preservation ----- Practical : Seminar</b>	<b>Pharmacological therapeutic cases ----- Practical side Introductory Talk</b>	<b>4</b>	<b>9</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Quantities and measurements ,Patient instruction . ----- Practical abbreviations</b>	<b>Qualitative and quantitative measures and patient advice ----- Practical Aspect Abbreviations</b>	<b>4</b>	<b>10</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Master formula ,scaled formula ----- Practical : Discussion</b>	<b>Required Preparatory Formulas -----Practical side discussion</b>	<b>4</b>	<b>11</b>
<b>Practical test</b>	<b>Lecture, Discussion, width Presentation</b>	<b>Solubility and concentration . ----- Practical : Seminar</b>	<b>Solubility and concentration -----The practical aspect is an introductory interview.</b>	<b>4</b>	<b>12</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>solutions ----- Practical Calculations</b>	<b>Lotions ----- Practical side calculations</b>	<b>4</b>	<b>13</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Vehicles ----- Practical Practical : Discussion</b>	<b>Active Ingredient Carriers ----- Practical side discussion</b>	<b>4</b>	<b>14</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Suspensions ----- Practical : Seminar</b>	<b>Pendants ----- Practical side Introductory Talk</b>	<b>4</b>	<b>15</b>

**Fundamentals of Organic Chemistry**

## 11. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture and Laboratory	Introduction to Organic Chemistry, Organic Compounds Found in Nature and Organic Compound Pollution	Introduction to organic chemistry, organic compounds present in nature, pollution with organic compounds		1
test	Lecture & Lab	Hybridization Methods	Hybridization methane, Ethylene, Acetylene,	4	2
test	Lecture and Laboratory	Classification, reactions, nomenclature and properties of hydrocarbons	Hydrocarbons Classification alkane, alkenes, benzene example, Reaction, Nomenclature, properties	4	3
test	Lecture and Laboratory	Examples of alkane compounds, their nomenclature, reactions, and properties	Alkynes, Example, Nomenclature, Properties, Reaction	4	4
test	Lecture and Laboratory	Aromatic compounds and their nomenclature, polycyclic compounds and electrophilic compensation for cyclic compounds	Aromatic compound, Names, Polycyclic aromatic compound, Electrophilic aromatic substitutions	4	5
test	Lecture and Laboratory	Preparation of phenolic compounds, their reactions and properties	Phenols, Synthesis, Reaction, Properties	4	6
test	Lecture and Laboratory	Alcohols: Classification, Reactions and Properties	Alcohols, Classification and properties, Reactions	4	7
test	Lecture and Laboratory	Aldehyde compounds, classification, properties and reactions	Aldehyde's, Classification and properties, Reactions	4	8
test	Lecture and Laboratory	Ketone compounds, their properties and interactions	Ketones, Classification and properties, Reactions	4	9
test	Lecture and Laboratory	Carboxylic acid compounds, classification, reactions	Carboxylic acid, Classification and properties, Reactions	4	10

		<b>and preparations</b>			
test	Lecture and Laboratory	Ester compounds, their reactions and properties	Ester, Reaction and Properties	4	11
test	Lecture,	Ether compounds Nomenclature, Preparation, Reactions and Properties	Ether , Nomenclature and properties	4	12
test	Lecture and Laboratory	Nuclear magnetic resonance spectroscopy and infrared spectrum	I.R. and UV. spectroscopy.	4	13
test	Lecture and Laboratory		Hetero cyclic	4	14
test	Lecture, Laboratory	Stereochemistry	Stereochemistry.	4	15

## Analytical Chemistry

### 11- Course Structure

Evaluation Method	Method of education	Unit Name/Topic	Required Learning Outcomes	Hours	The week
Daily Exam, Semester Exam, Scientific Reports	1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies	Introduction of analytical chemistry	Introduction to Analytical Chemistry	4	1
Daily Exam, Semester Exam, Scientific Reports	1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.	The student's knowledge of the principles of analytical chemistry: strong and weak electrolytes, weights and their units of measurement	4	2
Daily Exam, Semester Exam, Scientific Reports	1. Method of Delivering Lectures 2. Student groups 3. Workshops	The evaluation of analytical data: Definition of terms.	Knowledge of the estimation of analytical data and knowledge of some important	4	3

	<b>4. Reports and studies</b>		<b>terms in analytical chemistry</b>		
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>An introduction to gravimetric analysis: precipitation methods; gravimetric factor</b>	<b>Knowledge of quantitative gravimetric analysis methods, sedimentation methods and gravimetric coefficient</b>	<b>4</b>	<b>4</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents.</b>	<b>Knowledge of the applications of quantitative analysis and the types of inorganic and organic precipitating factors</b>	<b>4</b>	<b>5</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>An introduction to volumetric methods of analysis:</b>	<b>Knowledge of volumetric analysis methods</b>	<b>4</b>	<b>6</b>
		<b>Volumetric calculations; acid-base equilibria and pH calculations.</b>	<b>Knowledge of volumetric calculations and chemical equilibrium between acid and base and how to calculate pH</b>	<b>4</b>	<b>7</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops</b>	<b>Buffer solutions:</b>	<b>Study of buffer solutions</b>	<b>4</b>	<b>8</b>

	<b>4. Reports and studies</b>				
		<b>Theory of neutralization titrations of simple system.</b>	<b>Theoretical Study of Equalization Clearances of Simple Systems</b>	<b>4</b>	<b>9</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>Theory of neutralization titrations of complex system</b>	<b>Aspect Study of Tie Drills for Complex Systems</b>	<b>4</b>	<b>10</b>
		<b>Precipitation titrations.</b>	<b>Sedimentation Drains</b>	<b>4</b>	<b>11</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>Calculation of pH in complex system; Volumetric methods based on complex system.</b>	<b>Methods of calculating the pH of complex systems: volumetric methods adopted Complex systems</b>	<b>4</b>	<b>12</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>Equilibria in oxidation-reduction system; theory of oxidation-reduction titrations.</b>	<b>Chemical Equilibrium: Redox Discharges</b>	<b>4</b>	<b>13</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>Spectrophotometric analysis: An introduction to optical methods of analysis</b>	<b>Introduction to Spectrochemical Analysis Methods</b>	<b>4</b>	<b>14</b>
<b>Daily Exam, Semester Exam, Scientific Reports</b>	<b>1. Method of Delivering Lectures 2. Student groups 3. Workshops 4. Reports and studies</b>	<b>Beer-limber's law-calibration curve.</b>	<b>Curves of Pierre Lambert's Law</b>	<b>4</b>	<b>15</b>

## Organic Chemistry

### 12. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture and Laboratory	Introduction to organic chemistry, organic compounds present in nature, pollution with organic compounds	Introduction to Organic Chemistry	4	1
test	Lecture and Laboratory	Hybridization methane, Ethylene, Acetylene,	Hybridization of Levatian Compounds	4	2
test	Lecture and Laboratory	Hydrocarbons Classification alkane, alkenes, benzene example, Reaction, Nomenclature, properties	Classification of hydrocarbon alkanes, kines,.....	4	3
test	Lecture and Laboratory	Alkynes, Example, Nomenclature, Properties, Reaction	Examples of Kinat and Their Interaction	4	4
test	Lecture and Laboratory	Aromatic compound, Names, Polycyclic aromatic compound, Electrophilic aromatic substitutions	Aromatic compounds and their reactions	4	5
test	Lecture and Laboratory	Phenols, Synthesis, Reaction, Properties	Phenolic compounds, their reactions and properties	4	6
test	Lecture and Laboratory	Alcohols, Classification and properties, Reactions	Alcoholic compounds and their properties	4	7
test	Lecture and Laboratory	Aldehyde's, Classification and properties, Reactions	Aldehyde compounds, classification, properties and reactions	4	8
test	Lecture and Laboratory	Ketones, Classification and properties, Reactions	Ketone compounds, their properties and interactions	4	9

test	Lecture and Laboratory	Carboxylic acid , Classification and properties , Reactions	Carboxylic acid compounds, classification, reactions and preparations	4	10
test	Lecture and Laboratory	Ester, Reaction and Properties	Ester compounds, their reactions and properties	4	11
test	Lecture,	Ether , Nomenclature and properties	Ether compounds Nomenclature, Preparation, Reactions and Properties	4	12
test	Lecture and Laboratory	I.R. and UV. spectroscopy.	Nuclear magnetic resonance spectroscopy and infrared spectrum	4	13
test	Lecture and Laboratory	Hetero cyclic	Heterocyclic compounds	4	14
test	Lecture, Laboratory	Stereochemistry.	Stereochemistry	4	15

## Biochemistry

### 13. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture and Laboratory	Introduction to biochemistry and its role in medicine and ways of using devices	Introduction to Biochemistry and its role in medicine and used the device	4	1
test	Lecture & Lab	Identification of the acidic function in the body, the types of fluids in the body, and the devices used for diagnosis.	pH, water, buffers and devices used for diagenesis	4	2
test	Lecture and Laboratory	Continuation of the previous lecture Study of acid-base balance in body diseases and disorders and types of	Continuation of the lecture acid base balance and its disorders.	4	3

		<b>insulating systems in the body</b>			
test	Lecture and Laboratory	<b>Introduction to Carbohydrates and Metabolism</b>	<b>Carbohydrates structure and metabolism</b>	4	4
test	Lecture and Laboratory	<b>Classification of carbohydrates, their composition, functions, and the mechanics of metabolism</b>	<b>Classification of carbohydrate, Structure, Function ,Metabolism of carbohydrate</b>	4	5
test	Lecture and Laboratory	<b>Introduction to Fats, Composition and Classifications</b>	<b>Introduction of Lipids, classified and structure</b>	4	6
test	Lecture and Laboratory	<b>Lipid Functions and Fat Metabolism</b>	<b>Function ,Metabolism of Lipids.</b>	4	7
test	Lecture and Laboratory	<b>Study the structure and function of proteins in the body</b>	<b>Structure and function of proteins</b>	4	8
test	Lecture and Laboratory	<b>Explanation of the structure, functions and catabolism of amino acids</b>	<b>Structure , function and metabolism of amino acids</b>	4	9
test	Lecture and Laboratory	<b>Synthesis of DNA and protein</b>	<b>nucleic acid and protein synthesis</b>	4	10
test	Lecture and Laboratory	<b>DNA, RNA and protein synthesis</b>	<b>DNA structure and replication, RNA structure and replication, Translation and protein synthesis</b>	4	11
test	Lecture and Laboratory	<b>Enzymes and Enzyme Kinetics</b>	<b>Enzymes and enzymes kinetics</b>	4	12
test	Lecture and Laboratory	<b>Mechanism of action, structure, functions and regulation of enzymes</b>	<b>Mechanism of enzyme action, structure and functions, Enzyme kinetic and regulation</b>	4	13
test	Lecture and Laboratory	<b>Hormones of their types, characteristics and functions</b>	<b>Hormones and Types ,properties, function</b>	4	14
test	Lecture, Laboratory	<b>Vitamins of their types, properties and functions</b>	<b>vitamins Types ,properties, function</b>	4	15

## First Aid

### 14. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
test	Theoretical lecture	First aid	definition, paramedic, fundamental of first aid, wound, .bleeding	2	1
test	Theoretical lecture	Burns	- types of fracture aid- artificial respiration	2	2
test	Theoretical lecture	Biological factors	- types-their effects on workers in Lab.- diseases	2	3
test	Theoretical lecture	Physical factors	- types-their effects on workers in Lab.- diseases	2	4
test	Theoretical lecture	Chemical factors	- types-their effects on workers in Lab.- diseases	2	5
test	Theoretical lecture	Wounds	Type, aid and treatment	2	6
test	Theoretical lecture	Bleeding	Type, aid and treatment	2	7
test	Theoretical lecture	Trauma	Type, aid and treatment	2	8
test	Theoretical lecture	Fractures	Type, aid and treatment	2	9
test	Theoretical lecture	Fracture first aid	Type, aid and treatment	2	10
test	Theoretical lecture	Spinal fractures	Type, aid and treatment	2	11
test	Theoretical lecture	Accident ambulance	Type, aid and treatment	2	12
test	Theoretical lecture	Insect bites	Type, aid and treatment	2	13
test	Theoretical lecture	Insect bites aid	Type, aid and treatment	2	14
test	Theoretical lecture	Review	-	2	15

## Microscopic

### 15. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
Tests and assignments	Blended Learning	History of microbiology  Classification of microorganism, bacterial shape.	History of Microbiology  Classification of microorganisms and bacterial form.	4	1
Tests and assignments	Blended Learning	Anatomy of the bacterial cell, cell wall, flagella, plasma membrane, ribosomes, endospores	Bacterial cell anatomy, cell wall, flagella, plasma membrane, ribosomes, endospores	4	2
Tests and assignments	Blended Learning	Bacterial physiology and metabolism growth, Division, nutrition and other requirements like oxygen	Bacterial physiology, metabolism, growth, division, nutrition and other requirements such as oxygen	4	3
Tests and assignments	Blended Learning	Sterilization and disinfection. Types of sterilization, preservative (The control of microbial growth), Immunization	Sterilization and disinfection. Types of sterilization, preservatives (antimicrobial growth), immunization	4	4
Tests and assignments	Blended Learning	Pathogenicity of bacteria, Stages of infection	Pathogenicity of bacteria, stages of infection	4	5
Tests and assignments	Blended Learning	development of the disease, Virulence factor of bacteria Antibiotics, Mechanisms of antimicrobial action, Combination of antibiotic therapy, synergism, antagonism, indifferences.	disease progression, virulence factor for bacteria, antibiotics, mechanisms of action of antimicrobials, combination of  Antibiotic therapy, synergy, and hostility,	4	6
Tests and assignments	Blended Learning	Bacterial groups and their diseases. Gram-positive cocci	Bacterial groups and their diseases. Gram-positive cocci	4	7

		<b>Staphylococcus aureus S. epidermidis, Streptococcus pyogenes, Strept. Pneumonia.</b>	<b>Staphylococcus aureus S. epidermis, Streptococcus pyogenes, Streptococcus. Pneumonia.</b>		
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>gram-positive bacilli Corynebacterium diphtheria. Mycobacterium tuberculosis, Clostridium perregrines. Clostridium tetani</b>	<b>Gram-positive bacilli sphenoid diphtheria. Mycobacterium tuberculosis, Clostridium perigreens, Clostridium titani</b>	<b>4</b>	<b>8</b>
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>Gram negative bacilli, E. coli. Salmonella spp. Shigella spp. Vibrio cholera.</b>	<b>Gram-negative bacilli, Escherichia coli. Salmonella Prosecution. The Shigella is the prosecution. Vibrio cholera</b>	<b>4</b>	<b>9</b>
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>Viruses, morphology, replication, Eukaryotic cell, Some humane pathogenic viruses Hepatitis B virus, Rhinoviruses, HIV, Rabies, measles..</b>	<b>Viruses, their morphology, reproduction, eukaryotic cells, some human pathogenic viruses, hepatitis B virus, rhinoviruses, HIV, rabies, measles.</b>	<b>4</b>	<b>10</b>
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>Eukaryotic cell, cell components, cell division in Eukaryotes, mitosis, meiosis.</b>	<b>Eukaryotic cell, cell components, cell division in eukaryotes, mitosis, meiosis</b>	<b>4</b>	<b>11</b>
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>Trichomonas vaginalis), Blood parasite (Trypanosoma gambiense, Plasmodium) Tissue parasite (cutaneous leishmaniasis, Toxoplasma</b>	<b>(Trichomonas vagina), blood parasite (Trypanosoma gambia, Plasmodium) Tissue parasite (cutaneous leishmaniasis, Toxoplasma)</b>	<b>4</b>	<b>12</b>
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>General characteristic, medical classification of fungi, T. rubrum. Aspergillus C. albicans, fungus drug</b>	<b>General characteristics, medical classification of fungi, T. rubrum.</b>	<b>4</b>	<b>13</b>

		<b>contamination</b>	<b>Aspergillus C. albicans, Drug Contamination with Fungi</b>		
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>Parasitic Helminths (worms), general characteristics, blood tapeworms (Schistosoma mansoni), Intestinal tapeworms (Taenia Spp), Intestinal roundworms (Ascaris lumbricoides, Enterobius vermicularis)</b>	<b>Parasitic worms (worms), general characteristics, bloodworms (Schistosomiasis mansoni), intestinal tapeworms (Taenia spp), intestinal worms (Ascaris lumbricoides, Enterobius vermicularis)</b>	<b>4</b>	<b>14</b>
<b>Tests and assignments</b>	<b>Blended Learning</b>	<b>Seminar</b>	<b>Seminar</b>	<b>4</b>	<b>15</b>

<b>Computer2</b>					
<b>16. Course Intent</b>					
<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Word Processor Features / Word Running / Basic Elements of Word Window / Flipping Language / Paragraph Definition / Merging and Splitting Paragraph / Defining (Shading) Text.</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>1&amp;2</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>New / Open Stock File / Close Document / Save New Document / Save Already Existing Document / Preview Before Printing / Close Document / Quit Word</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>3</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Clipboard: Cut/Copy/Paste/Copy Formatting Font: Change Font / Font Size / Zoom in and Out / Clear Formatting / Change Font Color / Highlight Text Color / Low Text / High Text / Change Character</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	

		<b>Status / Underline Style / Effects / Character Spacing</b> <b>Paragraph: Numeric Census / Bullet Count / Create a bulleted list to an existing text / Bullet Cancellation / Indentation / Paragraph Spacing / Line Spacing / Text Orientation / Alignment / Borders and Shading</b> <b>Styles: Normal / No Spacing / Heading 1 / Heading 2 / Subheading / Change Styles / Show Preview / Disable Related Styles / Options</b> <b>Edit: Search / Jump to / Replace / Select</b>			
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Pages: blank page/cover page/page breaker</b> <b>Table : Insert Table / Draw Table / Convert Text to Table / Excel Data Sheet / Quick Tables / Table Styles / Draw Table</b> <b>Borders Illustrations : Picture / Clip Art / Prepared Shapes / Smart Art Drawing / Chart</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Header &amp; Footer: Header / Footer / Page Number</b> <b>Text: Text Box / Decorative Text Word Art / Signature Line / Date &amp; Time / Object / Equation / Symbol .</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>6</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Attributes: Themes/Colors/Fonts/Effects .</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>7</b>
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Themes : Themes / Colors / Fonts / Effects</b> <b>Page Setup: Margins / Page Size / Trend</b> <b>Background of the page : watermark / color of the page / border of the page</b> <b>Order: Position/Bring Forward/Send to Background/Wrap Text/Align/Group/Rotate.</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>8&amp;9</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Table of Contents / Add Text / Update Table</b> <b>Footnotes: Insert a footnote / Insert a concluding comment / Next footnote / Show notes</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>10&amp;11</b>

		<b>References &amp; Citation : Insert Citation / Manage Sources / Style Captions: Insert Caption Index: Insert Index / Mark for Entry / Update Index</b>			
<b>Quizzes and Discussion</b>	<b>Practical + Theoretical</b>	<b>Creation : Envelopes / Labels Proofreading: Spelling &amp; Grammar Checking/Research/Thesaurus/Translation/Translation Screen Hint/Language Assignment/Word Count Comments: New Comment / Deleted / Previous / Next Tracking: Track changes/balloons/tag finished/show tags/review pane Changes: Accept/Reject/Previous/Next Protection: Document Protection Document Views: Print Layout / Full-Screen Reading / Web Layout / Outline / Draft Show &amp; Hide: Ruler/Gridlines/Document Map/Thumbnail Zoom : 100% / one page / two pages / page width Frame: New Frame/All Order/Split/Switch Tyre Microsoft office word help</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>12&amp;13</b>
<b>Tests &amp; Reports</b>	<b>Practical + Theoretical</b>	<b>Networks &amp; Types / Network Forms / Network Protocols / Internet &amp; its Development / Internet &amp; Intranet / Firewalls / Some Basic Internet Concepts / Internet Connection / Internet Browser Opening / Internet Browsing Window Components / Browser Icons / Web Addresses / Browser Usage / Change Start Page / Toolbars / Closing Browser &amp; Disconnecting Internet / History / Saving Favorite Pages / Search Engines / How to Search for Information on the Web / Copying Text and Images to Any Application / Downloading Files from the Internet / Preparing for Printing /Print</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>14&amp;15</b>

## Arabic Language 2

### 1. Course Structure

Evaluation Method	Method of education	Unit Name/Topic	Required Learning Outcomes	Hours	The week
Quizzes and Discussion	theoretical	- The beginner and the news	Knowledge and Practical Application	2	1
Quizzes and Discussion	theoretical	- Verb, Subject and Object	Knowledge and Practical Application	2	2
Quizzes and Discussion	theoretical	- Necessary action and transgressive action	Knowledge and Practical Application	2	3
Quizzes and Discussion	theoretical	- Pronouns	Knowledge and Practical Application	2	4
Quizzes and Discussion	theoretical	Original Diacritics	Knowledge and Practical Application	2	5
Quizzes and Discussion	theoretical	- Sub-Diacritics	Knowledge and Practical Application	2	6
Quizzes and Discussion	theoretical	- The Five Verbs	Knowledge and Practical Application	2	7
Quizzes and Discussion	theoretical	- Conjunctions and their meanings	Knowledge and Practical Application	2	8
Quizzes and Discussion	theoretical	- Number and Count	Knowledge and Practical Application	2	9
Quizzes and Discussion	theoretical	- Hamzat Al , Wasl	Knowledge and Practical Application	2	10

<b>Discussion</b>			<b>Practical Application</b>		
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>- Hamza al-Qatim</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>11</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>- Superpositions</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>12</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>- Noon and Noon</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>13</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>- Administrative Letter</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>14</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>- Some common mistakes</b>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>15</b>

### **Crimes of the Baath regime in Iraq**

#### **17. Course Structure**

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- Crimes of the Baath regime according to the law of the Iraqi Supreme Criminal Court in 2005</li> <li>- The Concept of Crimes and Their Categories</li> <li>- Definition of crime in language and terminology</li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>1</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- Crime Categories</li> <li>- Crimes of the Baath regime according to the 2005 Iraqi Supreme Criminal Court Law</li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>2</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- Types of International Crimes</li> <li>- Decisions issued by the</li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>3</b>

		<b>Supreme Criminal Court</b>			
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Psychosocial crimes and their effects.</b></li> <li>- <b>Psychological Crimes</b></li> <li>- <b>Mechanisms of Psychological Crimes</b></li> <li>- <b>Effects of Psychological Crimes</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>4</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Social crimes</b></li> <li>- <b>Militarization of society</b></li> <li>- <b>The Baath regime's position on religion</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Violations of Iraqi laws</b></li> <li>- <b>Images of human rights violations and crimes of the PA</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>6</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Some decisions of the political and military violations of the Baath regime</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>7</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Prisons and detention places for the Baath regime</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>8</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Environmental Crimes of the Baath Regime in Iraq</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>9</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>War and Radioactive Pollution and Mine Explosion</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>10</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Destruction of Cities and Villages</b></li> <li>- <b>Scorched earth policy</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>11</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Draining the marshes</b></li> <li>- <b>Bulldozing palm groves, trees and crops</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>12</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Mass grave crimes</b></li> <li>- <b>Corporal in mass graves</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>13</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Mass graves and genocide committed by the Baathist regime</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>14</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<ul style="list-style-type: none"> <li>- <b>Chronological Classification of Genocide Cemeteries in Iraq</b></li> </ul>	<b>Knowledge and Practical Application</b>	<b>2</b>	<b>15</b>

## Ethics

## 18. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Ethics.</b>	<b>Introducing the student to the concept of ethics</b>	<b>2</b>	<b>1</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Work and Profession.</b>	<b>Definition of the student Difference between work and profession</b>	<b>2</b>	<b>2</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Professional ethics.</b>	<b>Understanding the Student's Ethics</b>	<b>2</b>	<b>3</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Values and ethics.</b>	<b>Introducing the student to the values and ethics of the profession</b>	<b>2</b>	<b>45&amp;</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Patterns of unethical behavior in the profession.</b>	<b>Introducing students to patterns of unethical behavior Administrative Corruption + Bribery + Fraud at Work</b>	<b>2</b>	<b>6&amp;7</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Means and methods of consolidating professional ethics.</b>	<b>Understanding the means of establishing values</b>	<b>2</b>	<b>8</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>Ethics of practicing medical professions: Characteristics and duties of a medical technician.</b>	<b>Introducing the student to the duties of the medical staff</b>	<b>2</b>	<b>9</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>1. Patient's rights.</b>	<b>Introducing the student to the patient's rights</b>	<b>2</b>	<b>10</b>
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>2. The relationship of the medical technologist with the community and his responsibility towards the</b>	<b>Introducing the student to the role of the medical technologist in</b>	<b>2</b>	<b>11&amp; 12</b>

		<b>environment and public safety.</b>	<b>the community</b>		
<b>Duties Quizzes Reports</b>	<b>Theoretical Lectures Group Discussions</b>	<b>3. Professional relations (the relationship of the medical technician with his colleagues in the health institution).</b>	<b>Clarify the relationship of the medical technologist with co- workers and his subordinates</b>	<b>2</b>	<b>13&amp; 14</b>
<b>Duties</b>	<b>Theoretical Lectures Group Discussions</b>	<b>4. The ethics of teaching and learning on patients.</b>	<b>Understand and clarify the ethics of teaching and learning to patients</b>	<b>2</b>	<b>15</b>

### Life Statistics

#### 19. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Hours</b>	<b>The week</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>Definition of Statistics. Data Collection Methods, Presentation and Description of Statistical Data, Preparation of a Questionnaire Form (Unclassified Data).</b>	<b>2</b>	<b>1</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>Representation of "Classified" Frequencies Table view "Tables of iterative distributions"</b>	<b>2</b>	<b>2</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>Graph Presentation – Histogram, Histogram, Histopoly.</b>	<b>2</b>	<b>3</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>Measures of centrality, arithmetic mean.</b>	<b>2</b>	<b>4</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>The mediator, the method.</b>	<b>2</b>	<b>5</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>Introduction to the Theory of Specimens "Their Meaning and Reasons for Their Choice"</b>	<b>2</b>	<b>6</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group Discussion</b>	<b>Life statistics, ratio and rate, mortality statistics.</b>	<b>2</b>	<b>7</b>
<b>test</b>	<b>Traditional Lecture, Seminars, Group</b>	<b>Fertility statistics.</b>	<b>2</b>	<b>8</b>

	<b>Discussion</b>			
test	Traditional Lecture, Seminars, Group Discussion	Disease statistics, life tables	2	9
test	Traditional Lecture, Seminars, Group Discussion	Definition of Health Statistics and its Sources.	2	10
test	Traditional Lecture, Seminars, Group Discussion	Fields Handled by Health Statistics.	2	11
test	Traditional Lecture, Seminars, Group Discussion	Counting the causes of death (medical certificate, cause, death, death certificate)	2	12
test	Traditional Lecture, Seminars, Group Discussion	Statistics of Health Institutions	2	13
test	Traditional Lecture, Seminars, Group Discussion	Rates and Allowances for Hospitals and Patients, Days of Treatment, Length of Stay (Average Days of Stay)	2	14
test	Traditional Lecture, Seminars, Group Discussion	Household occupancy rate, income rate	2	15

## Pharmacists

### 20. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
Quizzes and Discussion	theoretical	Introduction. Medical. Prescription. Definition, part of the prescription	Lecture & Discussion	4	1
Quizzes and Discussion	theoretical	Solution, definition, benefits of the solution. Analyse. Stability. Coloring and flavor	Lecture & Discussion	4	2
Quizzes and Discussion	theoretical	Ointment, definition, use, use, use, preparation methods, types, classification by method of preparation.	Lecture & Discussion	4	3
Quizzes and Discussion	theoretical	Definition of gel, its use, its use, methods of preparation, types,	Lecture & Discussion	4	4

		<b>classification according to the method of preparation.</b>			
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Types of eye ointment with examples</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Suppositories, their definition, use, use, examples</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>6</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Suppositories Rules, Types, Displacement Value</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>7</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Rules of suppositories examples with arithmetic.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>8</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Classification of suppositories, types, uses, method of preparation, lubrication of the mold</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>9</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Capsules, Definition, Use.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>10</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Therapeutic capsules.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>11</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Medicinal tablets, their types, methods of preparation and granulation.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>12</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Binders for medical tablets, disassembled materials, colorants, examples.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>13</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Standardization of Medical Tablets</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>14</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Pigments - Definition, Uses, Classification with Examples</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>15</b>

<b>Industrial Principles</b>					
<b>21. Course Structure</b>					
<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Introduction to industrial</b>	<b>Industrial Production</b>	<b>4</b>	<b>1</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of</b>	<b>Large and small scale</b>	<b>Small and large production</b>	<b>4</b>	<b>2</b>

	<b>educational videos and films</b>				
<b>test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Practical size</b>	<b>Granular size</b>	<b>4</b>	<b>3</b>
<b>test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Size reduction</b>	<b>Granular reduction</b>	<b>4</b>	<b>4</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>sieving..</b>	<b>Palm</b>	<b>4</b>	<b>5</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Mixing</b>	<b>melding</b>	<b>4</b>	<b>6</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Type of mixture.</b>	<b>Types of mixtures</b>	<b>4</b>	<b>7</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Liquid mixture.</b>	<b>Fluid Blending</b>	<b>4</b>	<b>8</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Solid mixture</b>	<b>Mixing Steel</b>	<b>4</b>	<b>9</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Evaporation</b>	<b>Fumigation</b>	<b>4</b>	<b>10</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Filtration.</b>	<b>Nomination</b>	<b>4</b>	<b>11</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of</b>	<b>Extraction.</b>	<b>Reclamation</b>	<b>4</b>	<b>12</b>

	<b>educational videos and films</b>				
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Drying</b>	<b>Drying</b>	<b>4</b>	<b>13</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Packaging</b>	<b>Packing</b>	<b>4</b>	<b>14</b>
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Revision.</b>	<b>Review</b>	<b>4</b>	<b>15</b>

## Principles of Pharmaceutical Chemistry

### 22. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Definition: Introduction to Pharmacopoeia, Inorganic Pharmacopoeias, Organic Pharmacopoeia</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>1</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Physical, chemical and biological properties of the human body</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>2</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Study of the physical and chemical properties and pharmacological activity of analgesic agents</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>3</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Study of the physical and chemical properties and pharmacological activity of analgesic agents</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>4</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Sedative-hypnotic medications</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Sedative-hypnotic medications</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>6</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Choliner, anticonvulsant, antiepileptic drugs</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>7</b>
<b>Quizzes and Discussion</b>	<b>theoretical</b>	<b>Choliner, anticonvulsant, antiepileptic drugs</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>8</b>

Quizzes and Discussion	theoretical	Central nervous system stimulants	Lecture & Discussion	4	9
Quizzes and Discussion	theoretical	Central nervous system stimulants	Lecture & Discussion	4	10
Quizzes and Discussion	theoretical	Cardiovascular medications	Lecture & Discussion	4	11
Quizzes and Discussion	theoretical	Cardiovascular medications	Lecture & Discussion	4	12
Quizzes and Discussion	theoretical	Anti-Infective Medications	Lecture & Discussion	4	13
Quizzes and Discussion	theoretical	Topical medications, antifungals, antibacterial	Lecture & Discussion	4	14
Quizzes and Discussion	theoretical	Topical medications, antifungals, antibacterial	Lecture & Discussion	4	15

## Principles of Medication

### 23. Course Structure

Evaluation	Method of education	Unit Name / Topic	Required Outputs	Hours	The week
test	Lecture, Discussion, Presentation	General aspects of Drugs Pharmacology Name and classification ----- Practical : General term in practical pharmacology	Introduce students to the basic concepts of pharmacology ----- Practical Basic Pharmacology Terminology	4	1
test	Lecture, Discussion, Presentation	Pharmacodynamics Drugs-receptor ----- Practical : Discussion	Mechanism of action of the drug receptor ----- Practical side discussion	4	2
Practical test	Lecture, Discussion, Presentation	Pharmacokinetics ----- Practical : Seminar	Pharmacokinetics ----- Practical side Introductory Talk	4	3
test	Lecture, Discussion, Presentation	Routes of Administration ----- Practical : Routes of Administration	Methods of administering the drug (theoretical aspect) ----- Practical side Methods of administering the drug	4	4
test	Lecture,	AN S Neurotransmitters	Automatic Machine	4	5

	<b>Discussion, Presentation</b>	<b>receptors ----- Practical : Practical : Discussion</b>	<b>Vectors and Receptors ----- Practical side discussion</b>		
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Cholinergic drugs Direct ,indirect ----- Practical : Seminar</b>	<b>Direct and indirect medications of the Jar Amidi device ----- Practical side Introductory Talk</b>	<b>4</b>	<b>6</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Anticholinergic drugs , Ganglionic blocking drugs, Neuromuscular blocking drugs ----- Practical : Effect of Sympathetic , drugs parasympathetic</b>	<b>Antiparasympathetic and anti- parasympathetic drugs that block the nerve ganglia and the muscular nerve ----- Practical side Effects of Sympathetic Medications and Sympathetic Neighbors</b>	<b>4</b>	<b>7</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Adrenergic drugs ----- Practical : Discussion</b>	<b>Sympathetic System Medications ----- Practical side discussion</b>	<b>4</b>	<b>8</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Adrenergic antagonist <math>\alpha</math> ,<math>\beta</math> blocker ----- Practical : Seminar</b>	<b>Alpha and Beta Closures ----- Practical side Introductory Talk</b>	<b>4</b>	<b>9</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>C N S Depressant drugs, Alcohol - Sedative hypnotics Benzodiazepine Barbiturate, ----- Practical Drugs antagonism</b>	<b>Central nervous system inhibitors Alcohol, sedatives and hypnotics ----- Practical Aspect of Drug Antagonism</b>	<b>4</b>	<b>10</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Anticonvulsant ,Antidepressants ----- Practical : Discussion</b>	<b>Antiepileptics and antidepressants -----Practical side discussion</b>	<b>4</b>	<b>11</b>
<b>Practical test</b>	<b>Lecture, Discussion, width Presentation</b>	<b>C N S Stimulant drugs. ----- Practical : Seminar</b>	<b>Central nervous system stimulants -----The practical aspect is an introductory</b>	<b>4</b>	<b>12</b>

			interview.		
Practical test	Lecture, Discussion, Presentation	Analgic : Narcotin or Opioid - ----- Practical Evaluation of analgesics	Analgesics Poppy ----- Practical side Evaluation of analgesics	4	13
test	Lecture, Discussion, Presentation	Analgesics : NSAIDs ----- Practical Practical : Discussion	Non-steroidal anti-inflammatory analgesics ----- Practical side discussion	4	14
Practical test	Lecture, Discussion, Presentation	Anesthetics , General ,Local anesthetics ----- Practical : Seminar	General and topical anesthesia drugs ----- Practical side Introductory Talk	4	15

### Medicinal plants and natural products

#### 24. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture, Discussion, Presentation	Introduction and definition of Medicinal plants and natural products.	Introduction and introduction to medicinal plants and natural products.	4	1
test	Lecture, Discussion, Presentation	Collection and preparation of medicinal plants, methods of collection, drying and storage and conditions of storage.	Collection and preparation of medicinal plants, methods of collection and drying, methods of drying and storage and storage conditions.	4	2
test	Lecture, Discussion, Presentation	Classification of medicinal plants: 1. Chemical classification 2. Biological classification 3. Alpha-beta classification 4. Pharmacological classification 5. Taxonomical classification	Classification of medicinal plants: 1. Chemical Classification 2. Biological classification 3. Alpha beta classification 4. Drug Classification 5. Taxonomy	4	3
test	Lecture, Discussion, Presentation	Evaluation of medicinal plants which includes: 1. Physical evaluation 2. Chemical evaluation 3. Pharmacological evaluation 4. Sensory evaluation	Evaluation of medicinal plants which includes: 1. Physical Assessment 2. Chemical Evaluation 3. Pharmacological Evaluation 4. Sensory Assessment 5.	4	4

		<b>5. Microscopic evaluation 6. Chromatography</b>	<b>Microscopic evaluation 6. Chromatography</b>		
test	Lecture, Discussion, Presentation	Carbohydrates and drugs containing carbohydrates a. Introduction about medicinal plants which contain carbohydrates	Carbohydrates and medications that contain carbohydrates. B. Introduction to Medicinal Plants Containing Carbohydrates.	4	5
test	Lecture, Discussion, Presentation	b. Classification of carbohydrates. c. Synthesis of carbohydrates in plants.	b. Carbohydrate classification c. Composition of carbohydrates in plants.	4	6
test	Lecture, Discussion, Presentation	d. Medicinal plants which contain carbohydrates and their medical uses. e. Preparation, purification and isolation of carbohydrates from the plants.	D. Medicinal plants that contain carbohydrates and their medicinal uses. E. Preparation, purification and isolation of carbohydrates from plants.	4	7
test	Lecture, Discussion, Presentation	f. Mucilage and gums	Glue and gel	4	8
test	theoretical	The glycosides and the plants containing glycosides a. Definition of glycosides b. Extraction, isolation and purification of glycosides.	Glycosides and a plant that contains glycosides. c. Definition of glycosides d. Extraction, isolation and purification of glycosides.	4	9
test	Lecture, Discussion, Presentation	c. Classification of glycosides d. Examples for drugs belonging to each class of glycosides and their medical uses.	c. Classification of glycosides d. Examples of drugs belonging to each class of glycosides and their medical uses.	4	10
test	Lecture, Discussion, Presentation	alkaloids: a. Their definition and properties. b. Classification of alkaloids.	Examples of raw materials belong to alkaloids with medicinal uses.	4	11
test	Lecture, Discussion, Presentation	Examples for crude drugs belong to alkaloids with medicinal uses.	<b>Volatile Oils:</b> b. Definition of volatile oils	4	12
test	Lecture, Discussion, Presentation	<b>Volatile oils:</b> a. Definition of volatile oils	c. General characteristics of volatile oils. Methods of preparing	4	13

			<b>them.</b>		
test	Lecture, Discussion, with Presentation	General properties of volatile oils.	Classification of volatile with examples of medic containing volatile oil General and Medical Uses	4	14
test	Lecture, Discussion, Presentation	Classification of volatile oils with examples for drugs containing volatile oils.	Introduction and introduction to medicinal plants and natural products.	4	15

## Fundamentals of therapeutic applications

### 25. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture, Discussion, Video Show	Drugs acting on the GIT (Gastrointestinal Tract) System Antacids Anti- Cholinergics	Introducing students to drugs that affect the digestive system	3	1
Practical test	Lecture, Discussion, Video Show	Drugs acting on the GIT (Gastrointestinal Tract) System H2 Antagonist Proton-Pump Inhibitors	Identifying Medications That Affect the Digestive System Part II	3	2
test	Lecture, Discussion, Video Show	Drugs acting on the GIT (Gastrointestinal Tract) System Anti – Diarrheal Drugs Laxative Drugs	Identifying Medications That Affect the Digestive System Part III	3	3
test	Lecture, Discussion, Video Show	<b>Antispasmodics</b> Antiemetic Nausea and Vomiting	Identifying Drugs That Affect the Digestive System Part IV	3	4
Practical test	Lecture, Discussion, Video Show	(Diuretics) Osmotic Carbonic anhydrase inhibitor Loop	Identifying Diuretic Drugs	3	5
Practical test	Lecture, Discussion, Video Show	(Diuretics) Part 2 Thiazide Potassium Sparing	Identifying Administered Drugs Part Two	3	6

Practical test	Lecture, Discussion, Video Show	Drug act on the Respiratory System (Bronchodilator)	Identifying Medications Affecting the Respiratory System	3	7
Practical test	Lecture, Discussion, Video Show	Drug act on the Respiratory System (Anti Asthmatic drug)	Identifying Drugs Affecting the Respiratory System Part Two	3	8
Practical test	Lecture, Discussion, Video Show	Antiseptics And Disinfectants	Sterilizers and disinfectants	3	9
Practical test	Lecture, Discussion, Video Show	Drug act on the Cardiovascular System (Anti Hypertensive drug)	Drugs affecting the cardiovascular system Pressure medications	3	10
Practical test	Lecture, Discussion, Video Show	Drug act on the Cardiovascular System (Anti Anginal drug)	Drugs affecting the cardiovascular system Angina drugs	3	11
Practical test	Lecture, Discussion, Video Show	Drug acting on the Cardiovascular System (Anti-arrhythmic Drugs) (Cardio tonic Drugs)	Drugs affecting the cardiovascular system Medications for arrhythmias	3	12
Practical test	Lecture, Discussion, Video Show	Antibiotics (Penicillin)	Antibiotics C1	3	13
Practical test	Lecture, Discussion, Video Show	Antibiotics (Cephalosporin)	Antibiotics C2	3	14
Practical test	Lecture, Discussion, Video Show	Anti-bacterial Drugs Sulphonamides + Cotrimoxazole	Antibiotics C3	3	15
Practical test	Lecture, Discussion, Video Show	Antibiotics Quinolones	Antibiotics C4	3	16
Practical test	Lecture, Discussion, Video Show	Antibiotics Aminoglycoside	Antibiotics C5	3	17

## Toxins

### 26. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
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test	Lecture, Discussion,	Introducing students to the toxicology	Introduction to Toxicology	2	1
test	Lecture, Discussion,	Division of toxicology	Toxicology Departments	2	2
test	Lecture, Discussion,	Major factors that influence toxicity	Main factors that cause poisoning	2	3
test	Lecture, Discussion,	Units used to measure chemicals in the environment	Standard Units for Accounting for Climate Chemicals	2	4
test	Lecture, Discussion,	How does the toxicity develop	How poisoning develops	2	5
test	Lecture, Discussion,	Physical examination	Physical examinations for poisoning cases	2	6
test	Lecture, Discussion,	Toxicokinetics	Toxin kinetics	2	7
test	Lecture, Discussion,	Aspirin	Aspirin	2	8
test	Lecture, Discussion	Barbiturates	-----	2	9
test	Lecture, Discussion	Antidepressants	Antidepressants	2	10
test	Lecture, Discussion,	Anticholinergic agents	-----	2	11
test	Lecture, Discussion,	Carbon dioxide poisoning	Carbon dioxide poisoning	2	12
test	Lecture, Discussion,	Cyanide poisoning	Cyanide poisoning	2	13
test	Lecture, Discussion,	Carbon monoxide poisoning	Carbon monoxide poisoning	2	14
test	Lecture, Discussion,	Nicotine poisoning	Poisoning	2	15

Pharmaceuticals					
27. Course Structure					
Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
Quizzes and Discussion	Lecture, discussion, presentation of educational videos and films	Topical Spray Solution	Lecture & Discussion	4	1
Quizzes and	Lecture,	Cataplasma	Lecture & Discussion	4	2

<b>Discussion</b>	<b>discussion, presentation of educational videos and films</b>	<b>(compresses) definition, uses, examples</b>			
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Medical injections: Definition and uses.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>3</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Medical injections are their types and classification with examples.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>4</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Eye drops: definition, uses, and examples.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Nasal drops: definition, uses, and examples.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>6</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Ear drops, definition, uses, examples.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>7</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Pregnant.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>8</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Alcohols, defined by their types and examples.</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>9</b>
<b>Quizzes and Discussion</b>	<b>Lecture, discussion, presentation of</b>	<b>Collodian define it and methods of preparation with</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>10</b>

	educational videos and films	examples.			
Quizzes and Discussion	Lecture, discussion, presentation of educational videos and films	Incompatibility, definition, types of incompatibility with examples.	Lecture & Discussion	4	11
Quizzes and Discussion	Lecture, discussion, presentation of educational videos and films	The phenomenon of incompatibility, general methods of treating incompatibility.	Lecture & Discussion	4	12
Quizzes and Discussion	Lecture, discussion, presentation of educational videos and films	Alkali incompatibility and material incompatibility with sodium salicylate, sodium benzoate and other reactants.	Lecture & Discussion	4	13
Quizzes and Discussion	Lecture, discussion, presentation of educational videos and films	Carbon dioxide formation as a result of incompatibility with examples.	Lecture & Discussion	4	14
Quizzes and Discussion	Lecture, discussion, presentation of educational videos and films	Calculations	Lecture & Discussion	4	15

## Industrial Pharmacy

### 1. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture, discussion, presentation of educational videos and films	Machine	Machines	2	1
Practical	Lecture, discussion,	Granulation	Endearing	2	2

test	presentation of educational videos and films				
test	Lecture, discussion, presentation of educational videos and films	Tablets , diluents and other	Grains – dilution and other things	2	3
test	Lecture, discussion, presentation of educational videos and films	Capsules	Capsules	2	4
Practical test	Lecture, discussion, presentation of educational videos and films	Emulsions..	emulsions	2	5
Practical test	Lecture, discussion, presentation of educational videos and films	Semisolids materials	Semi-Solid Materials	2	6
Practical test	Lecture, discussion, presentation of educational videos and films	Suspension.	Pendants	2	7
Practical test	Lecture, discussion, presentation of educational videos and films	Suppositories.	Suppositories	2	8
Practical test	Lecture, discussion, presentation of educational videos and films	Liquid dosage form.	Liquid Dosage Form	2	9
Practical test	Lecture, discussion, presentation of educational videos and films	Backaging use in industrial pharmacy.	Packaging in the pharmaceutical industry	2	10
Practical test	Lecture, discussion, presentation of educational videos and films	Cosmetics.	Cosmetics	2	11
Practical test	Lecture, discussion, presentation of educational videos and films	Antibiotics, methods quality control.	Antibiotics and Methods of Qualitative Control	2	12
Practical test	Lecture, discussion, presentation of educational videos and films	Methods of isolation of antibiotics	Methods of Isolation of Antibiotics	2	13
Practical test	Lecture, discussion, presentation of educational videos and	Methods of production of antibiotics .	Methods of antibiotic production	2	14

	<b>films</b>				
<b>Practical test</b>	<b>Lecture, discussion, presentation of educational videos and films</b>	<b>Revision.</b>	<b>Review</b>	<b>2</b>	<b>15</b>

<b>Pharmaceutical Chemistry</b>					
<b>2. Course Structure</b>					
<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Antibiotics Penicillin, Cephalosporins, Chloramphenicol, Tetracycline, Macrolides</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>1</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Antibiotics Penicillin, Cephalosporins, Chloramphenicol, Tetracycline, Macrolides</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>2</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Medications that affect the central nervous system Central nervous system inhibitor, central nervous system stimulant</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>3</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Medications that affect the central nervous system Central nervous system inhibitor, central nervous system stimulant</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>4</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Involuntary medications, choline agents, anticholinergic agents</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>5</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Involuntary medications, choline agents, anticholinergic agents</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>6</b>
<b>Quizzes</b>	<b>Lecture, Discussion,</b>	<b>Diuretic drugs,</b>	<b>Lecture &amp;</b>	<b>4</b>	<b>7</b>

<b>and Discussion</b>	<b>Presentation</b>	<b>hydrogenic and osmotic factors, and heterocyclic compounds</b>	<b>Discussion</b>		
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Diuretic drugs, hydrogenic and osmotic factors, and heterocyclic compounds</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>8</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Low Blood Sugar Medications and Medications</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>9</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Low Blood Sugar Medications and Medications</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>10</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Vitamins, Water Soluble Vitamin, Fat Soluble Vitamin</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>11</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Vitamins, Water Soluble Vitamin, Fat Soluble Vitamin</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>12</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Enzymes</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>13</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Sterols, bile salts, sex hormones, adrenal cortex hormones</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>14</b>
<b>Quizzes and Discussion</b>	<b>Lecture, Discussion, Presentation</b>	<b>Sterol, bile salts, Sex hormones, adrenal cortex hormones</b>	<b>Lecture &amp; Discussion</b>	<b>4</b>	<b>15</b>

## Pharmacology

### 3. Course Structure

<b>Evaluation</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Outputs</b>	<b>Hours</b>	<b>The week</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Drugs act on Respiratory system, ,Bronchodilators, ,Antihistamine ,Expectorants Anti-tussive ,Cold prepration ----- ----- Practical :Dose-Response Relationship</b>	<b>Introducing Medications Affecting the Respiratory System ----- Practical Aspect : Dosage Relationship to Effect</b>	<b>4</b>	<b>1</b>

test	Lecture, Discussion, Presentation	Drugs act on GIT , Anti ulcer Antacid Antidiarrheal ,Laxative Anti-emetic Practical : Discussion	Introduction to Gastrointestinal Medications Practical side discussion	4	2
Practical test	Lecture, Discussion, Presentation	Diuretics ,classification ,mode of action ----- Practical : Seminar	Generators: Types and Methods of Work ----- Practical side Introductory Talk	4	3
test	Lecture, Discussion, Presentation	Cardio Vascular Drugs Cardiac Glycosides ,Vasodilators,Antiangina 1,Antiarrhythmic drugs Practical :pharmacokinetics concepts t $\frac{1}{2}$ ,bioavailability	Cardiovascular System Medications (Part One) Practical side Concepts of drug kinetics	4	4
test	Lecture, Discussion, Presentation	Antihypertensive drugs , Drugs affect hemostasis ,Anticoagulant ----- Practical : Practical : Discussion	Cardiovascular System Medications (Part Two) ----- Practical side discussion	4	5
Practical test	Lecture, Discussion, Presentation	Chemotherapy Antibiotic :Mechanism of action ----- Practical : Seminar	Antibiotics Mechanism of Action ----- Practical side Introductory Talk	4	6
test	Lecture, Discussion, Presentation	Antibiotic: Inhibition of cell wall ,cell membrane ----- Practical Dose calculation	Antibiotics acting on the cell wall ----- Practical side Dosage calculations	4	7
test	Lecture, Discussion, Presentation	Antibiotic: Inhibition of proteins, nucleic acid synthesis ----- Practical : Discussion	Antibiotics that inhibit the synthesis of proteins and nucleic acids -----	4	8

			<b>Practical Aspect Discussion</b>		
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Antiviral ,Antifungal, Antiamebiasis Antiparasitic , Anthelmintic, Antituberculosis and Disinfectan Practical : Semina</b>	<b>Antimicrobials ----- Practical side Introductory Talk</b>	<b>4</b>	<b>9</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>General principle of Drugs interaction ----- Practical Drugs interaction</b>	<b>General Concepts of Drug Interactions ----- Practical side Drug interactions</b>	<b>4</b>	<b>10</b>
<b>test</b>	<b>Lecture, Discussion, Presentation Presentation</b>	<b>Hormonal drugs :Insulin and Antidiabetic agents ----- Practical : Discussion</b>	<b>Anti-diabetic medications ----- Practical Aspect Discussion</b>	<b>4</b>	<b>11</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>- Adrenal steroids ,Thyroid and antithyroid ----- Practical : Seminar</b>	<b>Adrenal, thyroid and antithyroid medications ----- Practical Aspect Presentation Dialogue</b>	<b>4</b>	<b>12</b>
<b>Practical test</b>	<b>Lecture, Discussion, width Presentation</b>	<b>- Anterior Pituitary ,Growth hormonrs ,gonadotropin ,sex hormones,,oxytocin Vasopressin Practical Nicotine poisoning</b>	<b>Pituitary hormones, posterior sternum, and sex hormones - The practical aspect of netcotine poisoning</b>	<b>4</b>	<b>13</b>
<b>Practical test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Contraception Practical Practical : Discussion</b>	<b>contraceptives ----- Practical side discussion</b>	<b>4</b>	<b>14</b>
<b>test</b>	<b>Lecture, Discussion, Presentation</b>	<b>Poison and antidotes Practical : Seminar</b>	<b>Poisoning and antidote Practical side Introductory Talk</b>	<b>4</b>	<b>15</b>

## Drugs

### 4. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture, Discussion, Presentation	Lipids: c. Definition of lipids d. Types of lipids.	Fats: c. Definition of fats d. Types of fats.	4	1
test	Lecture, Discussion, Presentation	c. Comparison between fixed oils and waxes d. Methods of preparation and isolation of lipids	C- Comparison between fats, fixed oils and candles. D. Methods of preparation and isolation of lipids	4	2
test	Lecture, Discussion, Presentation	e. Example for each type of lipids and their pharmaceutical and medical uses	E. An example of each type of fat and its pharmaceutical and medical uses	4	3
test	Lecture, Discussion, Presentation	Resins and balsams: a. Definition of resins and balsams.	Resins and Conditioners: a. Definition of resins and conditioners.	4	4
test	Lecture, Discussion, Presentation	b. Plants containing resins and balsams.	b. Plants containing resins and balsams.	4	5
test	Lecture, Discussion, Presentation	Tannins: a. Definition of tannins b. Their properties	Tannins: A. Definition of tannins b. Their characteristics.	4	6
test	Lecture, Discussion, Presentation	c. Classification of tannins.	c. Classification of tannins.	4	7
test	Lecture, Discussion, Presentation	d. Examples for drugs belong to each class of tannins.	d. Examples of medicines belonging to each category of tannins.	4	8
test	theoretical	Chromatography: a. Definition. b. Uses. c. Phases d. Types of chromatography	Chromatography: a. Definition. b. Uses. C. Stages D. Types of Chromatography	4	9
test	Lecture, Discussion, Presentation	antibiotics: a. Definition of antibiotics b. Their classification	Antibiotics: a. Definition of antibiotics. B. Classification	4	10

		examples for each class c. Antituberculosis d. Antifungal antibiotics. e. Anthelmintics.	them with examples in each category c. Anti-tuberculosis d. Antifungal antibiotics. e. Anthelmintic.		
test	Lecture, Discussion, Presentation	Hormonal drugs: a. Definition of glands. b. Definition of hormones. c. Types of hormones	Hormonal medications A. Definition of glands. b. Definition of hormones. C. Types of Hormones	4	11
test	Lecture, Discussion, Presentation Presentation	d. Extraction of hormones from glands e. Storage of hormones. f. Types of glands and hormones with their medical uses.	d. Extraction of hormones from glands Storage of hormones. . Types of glands, hormones, and their medical uses.	4	12
test	Lecture, Discussion, Presentation	Vitamins: a. Definition of vitamins b. Types of vitamins c. Examples for water-soluble vitamins with their natural sources.	Vitamins: a. Definition of vitamins B. Types of Vitamins c. Examples of water-soluble vitamins with their natural sources.	4	13
test	Lecture, Discussion, width Presentation	d. The uses of water-soluble vitamins. e. Examples for fat-soluble vitamins with their natural sources. f. Uses of fat-soluble vitamins	D. Uses of water-soluble vitamins. E. Examples of Fat-Soluble Vitamins with its natural sources. F. Uses of Fat-Soluble Vitamins	4	14
test	Lecture, Discussion, Presentation	The poisonous plants a. Their types. Examples for poisonous plants	Poisonous plants a. Their types. b. Examples of poisonous plants.	4	15

## Therapeutic Applications

### 5. Course Structure

Evaluation Method	Method of education	Unit Name / Topic	Required Learning Outcomes	Hours	The week
test	Lecture, Discussion,	Drugs acting on the GIT	Introducing students to drugs	3	1

	Video Show	(Gastrointestinal Tract) System Antacids Anti- Cholinergics	that affect the digestive system		
Practical test	Lecture, Discussion, Video Show	Drugs acting on the GIT (Gastrointestinal Tract) System H2 Antagonist Proton-Pump Inhibitors	Identifying Medications That Affect the Digestive System Part II	3	2
test	Lecture, Discussion, Video Show	Drugs acting on the GIT (Gastrointestinal Tract) System Anti – Diarrheal Drugs Laxative Drugs	Identifying Medications That Affect the Digestive System Part III	3	3
test	Lecture, Discussion, Video Show	Antispasmodics Antiemetic Nausea and Vomiting	Identifying Drugs That Affect the Digestive System Part IV	3	4
Practical test	Lecture, Discussion, Video Show	(Diuretics) Osmotic Carbonic anhydrase inhibitor Loop	Identifying Diuretic Drugs	3	5
Practical test	Lecture, Discussion, Video Show	(Diuretics) Part 2 Thiazide Potassium Sparing	Identifying Administered Drugs Part Two	3	6
Practical test	Lecture, Discussion, Video Show	Drug act on the Respiratory System (Bronchodilator)	Identifying Medications Affecting the Respiratory System	3	7
Practical test	Lecture, Discussion, Video Show	Drug act on the Respiratory System (Anti Asthmatic drug)	Identifying Drugs Affecting the Respiratory System Part Two	3	8
Practical test	Lecture, Discussion, Video Show	Antiseptics  And Disinfectants	Sterilizers and disinfectants	3	9
Practical test	Lecture, Discussion, Video Show	Drug act on the Cardiovascular System (Anti Hypertensive drug)	Drugs affecting the cardiovascular system Pressure medications	3	10
Practical test	Lecture, Discussion,	Drug act on the Cardiovascular System	Drugs affecting the cardiovascular	3	11

	<b>Video Show</b>	<b>(Anti Anginal drug)</b>	<b>system Angina drugs</b>		
<b>Practical test</b>	<b>Lecture, Discussion, Video Show</b>	<b>Drug acting on the Cardiovascular System (Anti-arrhythmic Drugs) (Cardio tonic Drugs)</b>	<b>Drugs affecting the cardiovascular system Medications for arrhythmias</b>	<b>3</b>	<b>12</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Show</b>	<b>Antibiotics (Penicillin)</b>	<b>Antibiotics C1</b>	<b>3</b>	<b>13</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Show</b>	<b>Antibiotics (Cephalosporin)</b>	<b>Antibiotics C2</b>	<b>3</b>	<b>14</b>
<b>Practical test</b>	<b>Lecture, Discussion, Video Show</b>	<b>Anti-bacterial Drugs Sulphonamides + Cotrimoxazole</b>	<b>Antibiotics C3</b>	<b>3</b>	<b>15</b>

## Community Health

### 6. Course Structure

<b>Evaluation Method</b>	<b>Method of education</b>	<b>Unit Name / Topic</b>	<b>Required Learning Outcomes</b>	<b>Hours</b>	<b>The week</b>
<b>test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Family assessment</b>	<b>Assessing the state of the family and the community</b>	<b>2</b>	<b>1</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Health education</b>	<b>Health Education</b>	<b>2</b>	<b>2</b>
<b>test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Maternal and child Health</b>	<b>Maternity and child care</b>	<b>2</b>	<b>3</b>
<b>test</b>	<b>Lecture, discussion, video and film screening</b>	<b>School health</b>	<b>School Health Services</b>	<b>2</b>	<b>4</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Occupational health program..</b>	<b>Occupational Health</b>	<b>2</b>	<b>5</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Epidemiology</b>	<b>Epidemiology</b>	<b>2</b>	<b>6</b>
<b>Practical test</b>	<b>Lecture,</b>	<b>Communicable diseases.</b>	<b>Communicable</b>	<b>2</b>	<b>7</b>

	<b>discussion, video and film screening</b>		<b>diseases</b>		
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Primary health care.</b>	<b>Primary Health Care</b>	<b>2</b>	<b>8</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Enviroment.</b>	<b>environment</b>	<b>2</b>	<b>9</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Healthy water</b>	<b>Healthy Water</b>	<b>2</b>	<b>10</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Air pollution.</b>	<b>air pollution</b>	<b>2</b>	<b>11</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Waste</b>	<b>wastes</b>	<b>2</b>	<b>12</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Healthy housing</b>	<b>Healthy Housing</b>	<b>2</b>	<b>13</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Rural health.</b>	<b>Rural Health</b>	<b>2</b>	<b>14</b>
<b>Practical test</b>	<b>Lecture, discussion, video and film screening</b>	<b>Revision.</b>	<b>Review</b>	<b>2</b>	<b>15</b>