

Ministry of Higher Education and Scientific Research
Scientific supervision and evaluation device
Department of Quality Assurance and Academic accreditation
Department Accreditation



Academic Program and Course Description Guide

2024

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Specification Form For Colleges and Institutions

University: Northern Technical University

Institute: Technical Medical Institute / Mosul

Department: Pharmacy Techniques

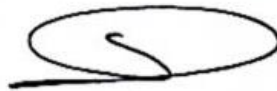
Date of Form Completion: 08/ 1 / 2024



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The Dean

Date: 8/1/2024



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Dean's Assistant For Scientific Affairs

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Assistant Professor
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Date: 8/1/2024

Quality Assurance And University Performance Manager
Assistant Professor Dr. Ali M. Saadi

Date: /8/1/2024

Signature



1-Program vision:

The Department of Pharmacy Technique was established to become a scientific, cultural, and intellectual radiation center, which provides the Iraqi society in particular and the Arab community with efficient technical outputs that meet their needs qualitatively and quantitatively. It consists of specialized branches, equipped with high-quality education requirements (modern laboratories for training students, internet network smart boards specialized technical staff with higher degrees possess scientific skills in their specialization, etc.). It adopts the open education system and distance education.

2-Program message:

The Department aims to prepare administrative-technical staff responsible for managing materials equipped with academic knowledge and practical skills that enable them to convert plans and goals into action and be a link between the director and employees in charge. These staff can translate the plans and goals of the organization and the manager's thoughts into action.

3- Program objectives

o prepare qualified technical staff who can work in the clinical and pharmaceutical pharmacy under the pharmacist's supervision and in the pharmaceutical and chemical industries under the pharmacist or chemist's supervision, whether in government departments or the private sector.

4-Program accreditation:

nothing

5-Other external influences:

nothing

6-Program structure:				
Program Structure	Number of Courses	Study Unit	Percentage	Notes *
University requirements	10	18	16.8	8Basic and2 optional
Institute requirements	5	14	13.1	Basic 5
Department requirements	25	75	70.1	21 Basic and 4 optional
summer training				Basic
Other				

First level modules

الرمز	المعهد ان وجد	عدد الوحدات	عدد الساعات		اسم المقرر		نوع المتطلب
			عملي	نظري	باللغة الإنكليزية	باللغة العربية	
NTU 100	-	2	0	2	Democracy and Human Rights	ديمقراطية وحقوق الانسان	جامعية
NTU 101	-	2	0	2	English language 1	اللغة الإنكليزية 1	
NTU 102	-	2	1	1	Computer 1	الحاسوب 1	
NTU 103	-	2	0	2	Arabic language 1	اللغة العربية 1	
NTU 104	-	2	1	1	Physical Activity	الرياضة (اختياري)	
NTU105	-	2	0	2	French Language	اللغة الفرنسية (اختياري)	
		10			مجموع الوحدات الجامعية المطلوبة		
TIMM 106	-	4	2	2	Physiology	علم وظائف الاعضاء	معهد
TIMM 107	-	4	2	2	Anatomy	التشريح	
TIMM 108	-	2	-	2	Safety in lab. & workshop	سلامة المختبرات والورش	
TIMM 109	-	2	-	2	Medical terminology	المصطلحات الطبية	
		12			مجموع وحدات متطلبات المعهد المطلوبة		

PHT112	.	4	2	2	Principles Pharmacy	مبادئ الصيدلة	قسم
PHT113	.	4	2	2	Basics Of Organic Chemistry	اساسيات الكيمياء العضوية	
PHT114	.	4	2	2	Analytical Chemistry	كيمياء تحليلية	
PHT115	.	4	2	2	Pharmaceuticals Calculation	حسابات صيدلانية	
PHT116	.	4	2	2	Organic Chemistry	كيمياء عضوية	
PHT117	.	4	2	2	Biochemistry	كيمياء حيوية	
PHT118	.	2	-	2	First Aids	اسعافات اولية (اختياري)	
PHT119	.	2	-	2	Psychology	علم النفس (اختياري)	
PHT120	.	4	2	2	Microbiology	احياء مجهرية	
		30			مجموع وحدات متطلبات القسم المطلوبة		
		52			مجموع وحدات المستوى الاول		

Second level modules

الرمز	المعهد ان وجد	عدد الوحدات	عدد الساعات		اسم المقرر		نوع المتطلب
			عملي	نظري	باللغة الإنكليزية	باللغة العربية	
NTU201	NTU 102	2	1	1	Computer 2	الحاسوب 2	جامعية
NTU202	NTU 103	2	0	2	Arabic language 2	اللغة العربية 2	
NTU 203	.	2	0	2	Crimes of the Baath regime in Iraq	جرائم نظام البعث في العراق	
NTU 204	.	2	0	2	Professional Ethics	اخلاقيات المهنة	
		8			مجموع الوحدات الجامعية المطلوبة		
TIMM 202	.	2	-	2	Biostatistics	الإحصاء الحياتي	معهد
		2			مجموع وحدات متطلبات المعهد المطلوبة		
PHT203	.	4	2	2	Pharmaceutics	صيدلانيات	قسم
PHT204	.	2	1	1	Industrial Principles	المبادئ الصناعية	
PHT205	.	4	2	2	Principles Of Pharmaceutical Chemistry	مبادئ الكيمياء الصيدلانية	
PHT206	.	4	2	2	principles Of Drugs	مبادئ الدواء	
PHT207	.	3	2	1	Natural Medicinal Plants and Products	النباتات الطبية والنواتج الطبيعية	
PHT208	.	3	2	1	Basics Of Therapeutic Application	اساسيات تطبيقات علاجية	

PHT209	.	2	0	2	Toxicology	سموم
PHT210	.	2	2	0	Proposal	مشروع بحث
PHT211	.	4	2	2	Pharmaceutical Formulation	مستحضرات صيدلانية
PHT212	.	2	1	1	Industrial Pharmacy	صيدلة صناعية
PHT213	.	4	2	2	Chemistry Pharmaceutical	كيمياء صيدلانية
PHT214	.	4	2	2	Pharmacology	علم الادوية
PHT215	.	3	2	1	Pharmacognacy	عقاقير
PHT216	.	3	2	1	Theraputics Application	تطبيقات علاجية
PHT217	.	1	0	1	Health Community	صحة مجتمع (اختياري)
PHT218	.	1	0	1	Skills Communication	مهارات تواصل (اختياري)
		45			مجموع الوحدات متطلبات القسم المطلوبة	
		55			مجموع وحدات المستوى الثاني	

7- Program description				
Year/level	semester or semester code	Name of the semester	credit Hours	
			theory	practical
2023-2024/ first			32	20
2023-2024/ 2ed			30	25

8- Expected learning outcomes of the programme

Knowledge:

- A1- The student is introduced to the basic principles of pharmacology.
A2- The student can identify medicines and how they work.
A3- The student can prepare prescriptions.
A4- The student gets acquainted with the devices and tools used in the preparation of medicines.
A5- The student can know the benefits of herbs, their toxicity and their effect on the body.
A6- The student can know the doses of medicines and how to give them.

Skills

- B1 – The student prepares different prescriptions and learns how to mix them.
 B2 Prepare various pharmaceutical solutions.
 B3 – Different envelopes are used to prepare prescriptions.
 B4 – Learn how to weigh different amounts of chemicals and medicines to prepare recipes.
 B5 The student writes the different chemical compositions of the drugs.

Value

- C1- The student feels the importance of medicines on human health.
 C2- The student evaluates how medications are dispensed and how they are given.
 C3- The student values the human body and preserving it by using vaccines and medicines correctly.
 C4- The student loves to listen fully to the teacher while he explains the lecture.

9-Teaching and learning strategies

Teaching and learning strategies and methods adopted in the program in general

10-Evaluation methods

The student is evaluated through evaluation forms, daily assessments, interviews, discussion and seminars, in addition to daily, quarterly and final exams

11-The teaching staff

Faculty members

Academic rank	specialization		Special requirements/s kills (if any)		preparation of the teaching staff	
	general	Specialized			lecturer	staff

Ass.prof	Chemistry	Analytical Chemistry			staff
Ass.prof	Biological	microbiology			staff
Ass.prof	Chemistry	Physics chemistry			staff
Ass.prof	Biological	Botany			staff
lecturer	Science of Pharmacy	pharmacology			staff
lecturer	Chemistry	Organic chemistry			
lecturer	Biological	Zoology			staff
lecturer	Chemistry	Inorganic chemistry			staff
lecturer	Chemistry	Physics chemistry			staff
Ass. lecturer	Chemistry	Biochemistry			staff
Ass. Lecturer(2)	Biological	Microbiology			staff
Ass. lecturer	Biological	Zoology			staff
Ass. Lecturer	Biological	Botany			staff
Ass. Lecturer(2)	Chemistry	Physics chemistry			staff
Ass. Lecturer	Linguistics	Language of English as a Foreign Language			staff
Pharmacist. Doctor	Science of Pharmacy	pharmacology			lecturer
Pharmacist	Science of Pharmacy	Clinical pharmacy			lecturer
Pharmacist	Science of Pharmacy	pharmacology			lecturer

12-Professional development

Orienting new faculty members

The new members of the department are developed by introducing teaching methods courses, and they are given a teaching suitability test, as well as holding a training course, seminars and workshops to train them on the approved work contexts.

Professional development

- 1- Scientific trips or scientific visits.
2. Educational meetings.
- 3 . Assigning him to give lectures.

- 5 . Leisure trips
6. Sports activity
7. Attend scientific debates

4 . Attending seminars. recreational trips

13-Acceptance criterion

- The student's admission criterion is determined according to the central admission plan within the plan of the Ministry and the student's preparatory branch, his grade point average and his desire. After that, the student is interviewed in a special interview at the institute

14- The most important sources of information about the program

- External sources (the Internet)
- Scientific research and its latest developments
- Methodological books

15-Program development plan

One of the future plans is the development of the laboratories of the Department of Pharmacy Technologies, as well as the development of the curriculum by deletion, addition and replacement

Program skills chart

Learning outcomes required from the program												Essential or optional	Course name	Course code	Year/level	
values				skills				Knowledge								
C4	C3	C2	C1	B4	B3	B2	B1	A4	A3	A2	A1					
				*	*	*	*	*	*	*	*	*	Essential	Democracy and Human Rights	NTU 100	2023-2024/1 st .
*	*	*	*	*	*	*	*	*	*	*	*	*	Essential	English language 1	NTU 101	
				*	*	*	*	*	*	*	*	*	Essential	Computer 1	NTU 102	
*	*	*	*	*	*	*	*	*	*	*	*	*	Essential	Arabic language 1	NTU 103	
				*	*	*	*	*	*	*	*	*	optional	Physical Activity	NTU 104	
				*	*	*	*	*	*	*	*	*	Essential	Physiology	TIMM 106	
				*	*	*	*	*	*	*	*	*	Essential	Anatomy	TIMM 107	
				*	*	*	*	*	*	*	*	*	Essential	Safety in lab. & workshop	TIMM 108	
*	*	*	*	*	*	*	*	*	*	*	*	*	Essential	Medical terminology	TIMM 109	
*	*	*	*	*	*	*	*	*	*	*	*	*	Essential	Principles Pharmacy	PHT112	

				*	*	*	*	*	*	*	*	Essential	Basics Of Organic Chemistry	PHT113	
				*	*	*	*	*	*	*	*	Essential	Analytical Chemistry	PHT114	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Pharmaceuticals Calculation	PHT115	
				*	*	*	*	*	*	*	*	Essential	Organic Chemistry	PHT116	
				*	*	*	*	*	*	*	*	Essential	Biochemistry	PHT117	
				*	*	*	*	*	*	*	*	optional	First Aids	PHT118	
				*	*	*	*	*	*	*	*	Essential	Microbiology	PHT120	
				*	*	*	*	*	*	*	*	Essential	Computer 2	NTU201	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Arabic language 2	NTU202	
				*	*	*	*	*	*	*	*	Essential	Crimes of the Baath regime in Iraq	NTU 203	
				*	*	*	*	*	*	*	*	Essential	Professional Ethics	NTU 204	
				*	*	*	*	*	*	*	*	Essential	Biostatistics	TIMM 202	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Pharmaceutics	PHT203	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Industrial Principles	PHT204	

*	*	*	*	*	*	*	*	*	*	*	*	Essential	Principles Of Pharmaceutical Chemistry	PHT205	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	principles Of Drugs	PHT206	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Medicinal Plants Natural and Products	PHT207	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Basics Of Theraputic Application	PHT208	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Toxicology	PHT209	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Proposal	PHT210	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Pharmaceutical Formulation	PHT211	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Industrial Pharmacy	PHT212	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Pharmaceutical Chemistry	PHT213	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Pharmacology	PHT214	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Pharmacognacy	PHT215	
*	*	*	*	*	*	*	*	*	*	*	*	Essential	Theraputics Application	PHT216	
*	*	*	*	*	*	*	*	*	*	*	*	optional	Health Community	PHT217	

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Techniques Department
3. Course title/code	Democracy and Human Rights NTU100
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
<p>1 - Providing students with basic concepts related to democracy and human rights.</p> <p>2- Knowledge of political systems, methods of elections and public freedoms.</p> <p>3- Developing the legal and constitutional culture among students.</p>	
10. Course outcomes and teaching, learning and evaluation methods	
<p>1- Enabling students to understand the concept of democracy and the rights to be implemented in the field of human rights.</p> <p>2- Developing the knowledge aspects of the constitution, the legal state and human rights guarantees.</p>	
<p>B - The skills objectives of the course.</p> <p>Enable students to understand the concept of democracy and the rights to be done in the field of human rights and how to defend these rights. And know the guarantees related to them.</p>	
Teaching and learning methods	
((Theoretical lectures / interactive lectures))	
Evaluation methods	
((Oral tests / written tests / weekly reports / daily attendance / participation and interaction in lectures / semester and final exams))	
C- Emotional and value goals	
Carrying out duties in the workplace with professional motives	
Teaching and learning methods	
((Theoretical lectures / seminars / debate work between students))	
Evaluation methods	
((Oral Tests / Written Tests / Observation / Student Cumulative Record))	
D - Transferable general and qualifying skills (other skills related to employability and personal development).	
Understand the concept of democracy and the rights to be implemented in the field of human rights.	

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Human rights, definition, objectives Human rights in ancient civilizations / Human rights in heavenly laws	Knowledge and application	Theoretical	Tests & Reports
2	2	Human Rights in Contemporary and Modern History (International Recognition of Human Rights since the First World War and the League of the United 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	Knowledge and application	Theoretical	Tests & Reports
3	2	NGOs and human rights (ICRC, Amnesty International, Human Rights Watch, National Human Rights Organizations)	Knowledge and application	Theoretical	Tests & Reports
4	2	Human rights in Iraqi constitutions between theory and reality / the relationship between :human rights and public freedoms In the Universal Declaration of Human -1 .Rights In regional charters and national -2 .constitutions	Knowledge and application	Theoretical	Tests & Reports
5	2	Economic, social and cultural human rights , Civil and political human rights / Modern human rights : Facts in development , Right to clean environment , Right to solidarity , Right to religion	Knowledge and application	Theoretical	Tests & Reports
6	2	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, the role of non-governmental organizations in respecting and protecting human rights / guarantees, respect and protection of human :rights at the international level Role of the United Nations and its .1 specialized agencies in providing safeguards The role of regional organizations (Arab -2 League, European Union, African Union, .(Organization of American States, ASEAN Role of international, regional non- .3 governmental organizations and public opinion in respecting and protecting human rights	Knowledge and application	Theoretical	Tests & Reports

7	2	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	Knowledge and application	Theoretical	Tests & Reports
8	2	Organizing public freedoms from the previousness of equality: the historical development of the concept of equality The modern development of the idea of equality Gender equality- Equality between individuals according to - their beliefs and race to public authorities	Knowledge and application	Theoretical	Tests & Reports
9	2	Freedom of learning , freedom of the press , freedom of assembly Freedom of association, freedom of work Right of ownership	Knowledge and application	Theoretical	Tests & Reports
10	2	Freedom of trade and industry Freedom of security and a sense of security Freedom to go and return Freedom of trade and industry Women's freedom	Knowledge and application	Theoretical	Tests & Reports
11	2	Scientific and technical progress and public freedoms The future of public freedoms	Knowledge and application	Theoretical	Tests & Reports
12	2	The crime of genocide	Knowledge and application	Theoretical	Tests & Reports
13	2	Democracy, its characteristics and types	Knowledge and application	Theoretical	Tests & Reports
14	2	Elections, their definition and types	Knowledge and application	Theoretical	Tests & Reports
15	2	Contemporary political systems	Knowledge and application	Theoretical	Tests & Reports

12. Infrastructure	
Required reading:	Available in free education and institute library
Main references (sources)	Available in free education and institute library
B - Electronic references, Internet sites...	Internet

13. Course development plan
<p>1- Developing curricula appropriate to human rights developments.</p> <p>2- Dividing the article into two parts, the first related to human rights and the second to democracy.</p>

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Medical Technical lab. Mosul Medical Technical Institute/ pharmacy techniques Department
3. Course title/code	English Language 1 NTU101
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course 1- Introducing the student to the basics of the English language with regard to the development of the four language skills (speaking, listening, reading and writing). 2 2- Introducing the student to the vocabulary of communication and academic writing English. 3- Developing students' skills to use and practice communication in English.	
10. Course outcomes and teaching, learning and evaluation methods	
A.Cognitive objectives A1- Introduce the student to the basics of the English language in terms of developing the four language skills (speaking, listening, reading and writing).	
B - The skills objectives of the course. B1 - Introducing the student to the vocabulary of communication and academic writing in English.	
Teaching and learning methods ((Theoretical lectures / listening lectures / conversation lectures / interactive lectures / research in libraries and the Internet on specific topics)).	
Evaluation methods ((Oral tests / written tests / weekly reports / daily attendance / participation and interaction in lectures / semester and final exams))	
C- Emotional and value goals C1- Develop students' skills to use and practice communication in English.C6- Training on how to deal with patients who have injuries resulting from traffic collisions and exposure to gunfire.	
Teaching and learning methods	

((Theoretical lectures / seminars / debate work between students / making reports in English))

Evaluation methods

((Oral Tests / Written Tests / Observation / Student Cumulative Record))

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Improving students' discussion skills in English

D2- Raising students' research perceptions in writing reports, research and university theses using the English language

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 1 / Hello	Theoretical	Tests & Discussion
2	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 2 / Your world	Theoretical	practical test
3	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 3 / All about you	Theoretical	Tests & Discussion
4	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 4 / Family and Friends	Theoretical	Test
5	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 5 / The way I live	Theoretical	Tests & Discussion
6	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 6 / Every day	Theoretical	practical test
7	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 7 / My favourite	Theoretical	Tests & Discussion
8	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 8 / Where I live	Theoretical	practical test
9	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 9 / Times past	Theoretical	Tests & Discussion
10	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 10 / We had a great time!	Theoretical	practical test
11	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 11 / I can do that	Theoretical	Tests & Discussion
12	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 12 / Please and Thank you	Theoretical	practical test
13	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 13 / Here and now	Theoretical	practical test

		Skills Work/ Everyday English			
14	2	Grammar/ Vocabulary/ Skills Work/ Everyday English	Unit 14 / It's time to go	Theoretical	practical test
15	2	Review	Review	Theoretical	Discussion

14. Infrastructure

Required reading:	New Headway Plus / Beginner/ John and / Oxford University Press / 2014 Liz Soars
Main references (sources)	<ol style="list-style-type: none"> 1. An A-Z of English Grammar & Usage / Geoffrey Leech / Longman / 1990 2. Common Mistakes in English / T.J. Fitikides / Longman 2002 3. English Grammar in Use / Raymond Murphy / Cambridge University Press 2004
Recommended books and references (scientific journals, reports,...)	Express English / Omer Al- Hourani / Jordan
B - Electronic references, Internet sites...	Express English / Omer Al- Hourani / Jordan

15. Course development plan

- 1- Developing appropriate curricula for university graduates
- 2- Holding seminars and conferences aimed at updating school curricula

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Department
3. Course title/code	Computier1 NTU102
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1- Teaching the student the skills of working on the computer and the use of ready-made	

<p>applications and the principles of the Internet in the field of specialization.</p> <p>2- Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.</p> <p>3. Perform his duties at the workplace for professional motives.</p>
<p>10. Course outcomes and teaching, learning and evaluation methods</p>
<p>AA1- Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.</p>
<p>B - The skills objectives of the course.</p> <p>B1 - Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.</p>
<p>Teaching and learning methods</p> <p>((Theoretical lectures / practical lectures / field visits / solving examples / seminars / summer training))</p>
<p>Evaluation methods</p> <p>((Oral exams / written tests / weekly reports / daily attendance / semester and final exams))</p>
<p>C- Emotional and value goals</p> <p>C1- Perform his duties at the workplace for professional motives.</p>
<p>Teaching and learning methods</p> <p>((Theoretical lectures / practical lectures / field visits / solving examples / seminars / summer training))</p>
<p>Evaluation methods</p> <p>((Oral Tests / Written Tests / Observation / Student Cumulative Record))</p>
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development).</p> <p>D1- Improve their discussion skills.</p> <p>D2- Raising their research perceptions and transferring the student from the stage of teaching to learning.</p>

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
2&1	2	Introduction to the computer / computer system / information technology / types of computers / input units / central processing unit / output units / main memory and its types / data storage in memory / factors affecting computer performance Definition of software and its types / systems	Knowledge and practical application	Practical + Theoretical	Tests & Discussion

		software: operating systems / programming .languages and software systems / applied software			
3	2	Introduction to Windows / its features / operating the device / shutting down the device / using the mouse / windows screen components: taskbar: icons: and .(their types (standard and general	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
4	2	Control Panel / Desktop Control / Screen Saver / Window Colors and Lines / Screen Settings / Adjust Screen Colors / Modify Time and Date / Volume / Change Between Mouse Buttons / Double-Click Speed Control / Change Mouse Pointer / Control Mouse Speed / Install and Uninstall Programs	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
5	2	Minimize and enlarge the window / final closure / temporary closure / move the window / control the capacity of the window / ways to run applications and programs	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
6	2	Order start menu items / delete start menu items / add submenu to start menus / add new button to start menu	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
7	2	Basic System Information / Stop Unwanted Applications Windows explorer window finder / My computer icon / my computer window parts	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
9&8	2	Recycle Bin (delete, retrieve and empty the basket) / My Document icon	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
11&10	2	Definition of files and folders / Identification of files and folders / Properties of files Definition of folders / Create files and folders / Change the name of files and folders / Move file or folder / Copy file or folder / Search for file or folder / Create a shortcut icon for an application or file	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
13&12	2	Calculator / Notepad / WordPad / Use the memo to edit and create the file Paint / Screen components / Create drawings / Select front and background colors / Choose brush font size / Select and select the drawing tool / Save drawing / Make drawing desktop background / Quit Paint Entertainment programs Media player	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
15&14	2	Viruses / Reason for naming / Definition / Ways of spreading the virus / Symptoms of infection with the virus / Protection methods / Types of viruses Computer crimes / theft / hackers	Knowledge and practical application	Practical + Theoretical	Tests & Discussion

16. Infrastructure

Required reading:	Available in the free department and library of the institute
Main references (sources)	Available in the free department and library of the institute
Recommended books and references (scientific journals, reports,...)	Internet

17. Course development plan

- 1- Developing curricula adapted to the labor market
- 2- Holding seminars and scientific conferences aimed at updating the curricula
- 3- Follow-up scientific developments in the field of specialization

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Department
3. Course title/code	Arabic Language 1 NTU103
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical) * Discussions and reports
6. Semester/Year	Semester
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	<ol style="list-style-type: none"> 1- Enabling the student to read correctly. 2- Enabling the student to write correctly and use punctuation marks. 3- The student should acquire the ability to use the Arabic language correctly. 4- Introducing the student to the correct Arabic language words, structures and methods in an interesting way. 5- Accustom the student to sound and clear expressions of his ideas. 6- Helping the student to understand complex structures and mysterious methods.
10. Course outcomes and teaching, learning and evaluation methods	
<p>A- The student should recognize common mistakes in writing Arabic in order to avoid them</p> <p>B - The student should recognize the punctuation marks and use them correctly</p> <p>C - The student should distinguish between the solar lam and the lunar lam, which helps to pronounce it correctly</p> <p>D - The student differentiates between Dhad and Zaa, and this is what helps him to avoid falling into a</p>	

spelling error
E - To distinguish between the verb, the noun and the letter, as this is what his Arabic speech is based on. F- He must be able to write the hamza in its correct position correctly.
B - The skills objectives of the course. B1 – Providing the student with a linguistic wealth that makes him more able to correctly express what he wants. B2- Correcting the student's tongue and preventing it from error
Teaching and learning methods ((Theoretical lectures / listening lectures / conversation lectures / interactive lectures / research in libraries and the Internet on specific topics)).
Evaluation methods ((Oral tests / written tests / weekly reports / daily attendance / participation and interaction in lectures / semester and final exams))
C- Emotional and value goals C1- Thinking, activation and organization development C2- Working to make the student's imagination fertile imagination by highlighting the aesthetics of the language and thus enabling him to express the essence of the soul in a proper way.
Teaching and learning methods ((Theoretical lectures / seminars / conducting debates between students / making reports))
Evaluation methods ((Oral Tests / Written Tests / Observation / Student Cumulative Record))
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- The ability to develop and develop his expressive skills such as poetry and story. D2- The ability to communicate with the outside world properly.

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Introduction to linguistic errors – Taa Al-Marbouta and Al-Taa Al-Maktaba	1. Identify the types of linguistic errors. 2. Differentiate between open Taa and Taa tethered	Discussion method, lecture method	Oral test
2	2	Rules for writing the elongated and compartment thousand – solar and lunar letters	1. Differentiate between the writing of the extended thousand and the compartment and the positions of the writing of the two thousand 2. Differentiate between solar letters and lunar letters	Discussion method, lecture method	Oral test
3	2	Al-Daad and Al-Zaa	Differentiate between	Discussion	Oral test

			Dhad and Z	method, lecture method	
4	2	Hamza writing	Enable the student to write the hamza correctly	Discussion method, lecture method	Oral test
5	2	Punctuation	Recognize punctuation and write it in the correct location	Discussion method, lecture method	Oral test
6	2	Noun and verb and differentiate between them	1. Recognize the noun and verb and indicate the sign of each 2. Differentiate between noun and verb 3. Indication of the types of verb 4. Differentiate between types of verbs	Discussion method, lecture method	Oral test
7	2	Effects	identify the types of effects and differentiate between them	Discussion method, lecture method	Oral test
8	2	Number	Enable the student to write numbers correctly	Discussion method, lecture method	Oral test
9	2	Applications of common linguistic errors	Recognize and avoid common language errors	Discussion method, lecture method	Oral test
10	2	Applications of common linguistic errors	Recognize and avoid common language errors	Discussion method, lecture method	Oral test
11	2	Noon and Tanween meanings of prepositions	1. Differentiate between Nun and Tanween 2. Recognize the meanings of prepositions	Discussion method, lecture method	Oral test
12	2	Formal aspects of administrative discourse	Identify the formal aspects of administrative discourse	Discussion method, lecture method	Oral test
13	2	The language of administrative discourse	Recognize the language of administrative discourse	Discussion method, lecture method	Oral test
14	2	The language of administrative discourse	Recognize the language of administrative discourse	Discussion method, lecture method	Oral test

15	2	Samples of administrative correspondence	Identify samples of administrative correspondence	Discussion method, lecture method	Oral test
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18. Infrastructure	
Required reading:	Textbooks: General Arabic Language Binding for Technical Universities by (Dr. Safaa Kazem Makki and Dr. Lama Muhammad Younis
Main references (sources)	1- Clear dictation: Abdul Majeed Al-Nuaimi, Daham Al-Kayyal, Dar Al-Mutanabbi Library, Baghdad, 6th edition, 1987 AD. 2- Lessons in language, grammar and spelling for state employees: Ismail Hammoud Atwan and others, Ministry of Education Press No. (3), Baghdad, 2nd edition, 1984. 3- Arabic language for the third intermediate grade: Fatima Nazem Al-Attabi, et al., 1st edition, 2018. 4 - General Arabic language for sections other than specialization: Abdul Qadir Hassan Amin and others, Ministry of Higher Education and Scientific Research, 2nd Edition, 2000. 5- Inspired by Arabic literature: Haval Muhammad Amin, Al-Saadoun Press, Baghdad.
Electronic references, Internet sites...	World Wide Web

19. Course development plan
Correcting the linguistic errors that occurred in the manual to be taught and trying to add a definition to some of the terms contained in the fascicle, especially since the Arabic language fascicle was prepared for non-specialists in the Arabic language, and this leads to making the prescribed vocabulary more accurate and clear.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Department

3. Course title/code	Physical activity NTU104
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Sports discussions and activities
6. Semester/Year	modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course 1- The student should be able to identify the most important types of sports and are the laws and skills of some sports 2- Identify the motor mechanism of the human body and what are the common injuries that occur in the human body. 3. Perform his duties at the workplace for professional motives.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- The student should be able to identify the most important types of sports and what are the laws and skills of some sports	
B - The skills objectives of the course. B1- Identify the motor mechanism of the human body and what are the common injuries that occur in the human body.	
Teaching and learning methods ((Theoretical lectures / practical lectures / field visits / solving examples / seminars))	
Evaluation methods ((Oral exams / written tests / weekly reports / daily attendance / semester and final exams))	
C- Emotional and value goals C1- Perform his duties at the workplace for professional motives.	
Teaching and learning methods ((Theoretical lectures / practical lectures / field visits / solving examples / seminars))	
Evaluation methods ((Oral Tests / Written Tests / Observation / Student Cumulative Record))	
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Improve their discussion skills. D2- Raising their research perceptions and transferring the student from the stage of teaching to learning.	

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Sport definition, importance and types	Knowledge and practical application	theoretical and practical	Tests & Reports

2	2	The mechanism of movement of the human body	Knowledge and practical application	theoretical and practical	Tests & Reports
3	2	Common sports injuries	Knowledge and practical application	theoretical and practical	Tests & Reports
4	2	Basic skills of the game of basketball	Knowledge and practical application	theoretical and practical	Tests & Reports
5	2	International Basketball Law	Knowledge and practical application	theoretical and practical	Tests & Reports
6	2	Basic skills of table tennis and its international law	Knowledge and practical application	theoretical and practical	Tests & Reports
7	2	Basic skills of volleyball and its international law	Knowledge and practical application	theoretical and practical	Tests & Reports
8	2	Swimming sport	Knowledge and practical application	theoretical and practical	Tests & Reports
9	2	Basic skills of tennis and its international law	Knowledge and practical application	theoretical and practical	Tests & Reports
10	2	Basic skills of handball	Knowledge and practical application	theoretical and practical	Tests & Reports
11	2	International Handball Law	Knowledge and practical application	theoretical and practical	Tests & Reports
12	2	Arena and field games (types, international law of the game)	Knowledge and practical application	theoretical and practical	Tests & Reports
13	2	Basic Football Skills	Knowledge and practical application	theoretical and practical	Tests & Reports
14	2	Management of sports competitions and competitions	Knowledge and practical application	theoretical and practical	Tests & Reports
15	2	Sports Laws and Legislations	Knowledge and practical application	theoretical and practical	Tests & Reports

20. Infrastructure	
Required reading:	Available in the free department and library of the institute
Main references (sources)	Available in the free department and library of the institute
Electronic references, Internet sites...	Internet

21. Course development plan
1- Developing curricula adapted to the labor market 2- Holding seminars and scientific conferences aimed at updating the curricula 3- Follow-up scientific developments in the field of specialization

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Medical Technical Institute, Mosul / Department of pharmacy techniques

3. Course title/code	PHYSIOLOGY (TIMM106)
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	60 hours
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
The students must know the importance of human physiology and functions of all human body system.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- know Terms of human body. A2- The students learn Functions of each system. A3- Estimation of lung volume, body temperature, and ECG for patients and healthy.	
B - The skills objectives of the course. B1 - Training students to measure blood pressure and pulse B2 - Training students in the measurement of bleeding time and clotting time. B3 - The student is able to take some tests in emergency cases B4- Training students to measure hemoglobin and blood groups.	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.	
C- Emotional and value goals C1- The student can distinguish the physiological changes of the body C2- Knowledge the types of anemia and its causes C3- Learn how to do ECG and ESR.	
Teaching and learning methods	
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions,	

methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher’s answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Body systems. Its functions, Blood smear. Blood, Plasma : their functions.	Lecture, discussion,	4	Test
2	4	Anemia deficiency of iron, and Vit., B12, Blood cells, types and function.	Lecture, discussions	4	test
3	4	Blood clotting. its factors and sites. Plasma proteins. its functions.	Lecture, discussion,	4	test
4	4	Cardiovascular system, blood grouping. Erythroblastosis. Heart muscles, physiology of the heart.	Lecture, discussion,	4	Test
5	4	Blood circulation, blood to body tissues. Blood pressure, pulse	Lecture, discussion,	4	test
6	4	Factors affecting heart rate. Respiratory system, structural and function.	Lecture, discussion	4	test

7	4	Lung volume, estimation. Spirometer. Hypoxia. Anoxia. its types	Lecture, discussion,	4	test
8	4	Effects of hypoxia respiratory centers. Central and peripheral nervous system	Lecture, discussion,	4	test
9	4	Nerve. its function & physiology. Autonomic nervous system.	Lecture, discussion,	4	test
10	4	Central nervous system. Cerebellum function and body balance.	Lecture, discussion,	4	test
11	4	Physiology of digestion. steps of digestion. Accessory organs of digestive system. pancreas .function	Lecture, discussion,	4	Test
12	4	Digestive system. function of each part. Non digestive function of the pancreas, diabetes mellitus.	Lecture, discussion,	4	test
13	4	Urinary tract system function of each part. Urination.	Lecture, discussion,	4	test
14	4	Endocrine system, glands, Function. Function of endocrine hormones	Lecture, discussion,	4	test
15	4	regulation. Temperature Hypothermia. Frostbite Hyperthermia, Heat stroke.	Lecture, discussion,	4	Test

22. Infrastructure

Required reading:	
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Main references (sources)	1- G. pocock, C. D. Richards and D. A. Richards, <i>Human Physiology</i>. United kingdom: Oxford university press, 2013
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

23. Course development plan

- 1- Access to modern scientific literature
- 2- Participation in relevant scientific conferences
- 3- The teaching and training staff is partially devoted to applying and working in hospitals
- 4- Hosting specialized professors
- 5- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Department
3. Course title/code	Anatomy / TIMM 107
4. Program (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	The student will be able to: <ul style="list-style-type: none"> • Identify the human body's systems. • Identify the relationship between devices.
10. Course outcomes and teaching, learning and evaluation methods	
A. Cognitive objectives:	

A1. Identify the organs of each system of the human body. A2. Identify the location of each organ in the human body.
B - Skills objectives: • Training students on the general anatomical positions of the human body
C- Emotional and Value-Based objectives: • Respecting the patient’s sanctity, customs and traditions.
D - General and qualifying skills: D1- Field visits to gain experience from others. D2- Access to scientific developments in the field of specialization (educational videos). D3- Practical training in hospitals.
Teaching and learning methods
Traditional lecture, Writing reports, Seminar conduct, Practical training in the laboratory, Practical training in the hospital, and End of the course training.
Evaluation methods
Daily written and oral tests, Applied tests, Seminars, Semester and final exams, Commitments to assignments, Attendance and commitment, Feedback (Linking the current topic to the previous topic), Self-evaluation, Reports on scientific developments in the field of specialization, Asking analytical and deductive questions.

11. Course Structure				
Week	Hours	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4	Anatomical Directions: Explain all directions of the human body. Surface anatomy of the heart: Describe the position of the heart according to the chest wall and the number of the rib .	Lecture, discussion, presentation of videos	test
2	4	Surface Anatomy of lungs: Describe the position of the lungs according to the chest wall and the number of the rib. Anatomy of the abdomen surface: Drawing the regions of the abdominal surface according to the	Lecture, discussion, presentation of videos	test

		horizontally & vertically lines .		
3	4	Anatomy of stomach: Demonstration the relation of the stomach to the other organs to the abdomen. Anatomy of the liver & spleen: Explain the regions of liver & spleen according to the sur face anatomy of abdomen .	Lecture, discussion, presentation of videos	test
4	4	Anatomy of Intestine: Demonstration the relation of the Intestine to the other organs to the abdomen. Anatomy of the Appendix: Determine the region of the appendix at the right iliac region .	Lecture, discussion, presentation of videos, Display models	Test
5	4	Anatomy of the gall bladder: Determine the region of gall bladder at the right sub – costal region. Define the region of the uterus at the supra – pubic region .	Lecture, discussion, presentation of videos, Display models	practical test
6	4	Anatomy of the skeleton: Describe the center skeleton: Skull – vertebral column & the peripheral. Bones of the shoulder: Show the bones of the shoulder on the skeleton which are the scapula and the clavicle.	Lecture, discussion, presentation videos, Display models	practical test
7	4	Bones of the arm: Show the bones of the arm (Humarus). Bones of the forearm: Show the bones of Ulna and Radius.	Lecture, discussion, presentation videos, Display models	practical test
8	4	Bones of the hand: Demonstrate the bones of the hand: (carpal bones and meta carpal and phalangus). Bones of the pelvis: Define the bones of the pelvis which are: (Iliac and Ischemic and sacrum).	Lecture, discussion, presentation videos, Display models	practical test
9	4	Bones of the thigh: Demonstrate of the skeleton the femur bone with the lower and upper ends. Bones of the leg: Show the bones which are: (Tibia & fibula), and extration to the femur and the foot .	Lecture, discussion, presentation videos, Display models	practical test
10	4	Bones of the foot: Describe the bones which are :(Tarsal &	Lecture, discussion, presentation videos, Display	practical test

		metatarsal & phalanges). Bones of the skull: Name the numbers of the bones on all at surfaces of the skull .	models	
11	4	Bones of vertebral column: Show the student the types of the vertebrae column and the numbers. Muscle of the shoulder: Show them on the model all the muscles of the shoulder.	Lecture, discussion, presentation videos, Display models	practical test
12	4	Anatomy of the chest wall: Give the types and numbers of the ribs and explain the sternum. Muscles of the chest & abdomen: Give the name of the muscles of the chest wall and abdominal wall.	Lecture, discussion, presentation videos, Display models	practical test
13	4	Muscles of the back & gluteal region: Show the student muscles of the back and gluteal muscles. Anatomy of the digestive system: Show the organs of the digestive system .	Lecture, discussion, presentation videos, Display models	practical test
14	4	Anatomy of the cardio-muscular system: Show them the model of the organs which is the heart and big vessels. Respiratory system: Demonstrate the lungs and bronchus and bronchi..	Lecture, discussion, presentation videos, Display models	practical test
15	4	The uro-genetal system: Show the kidney and urinary bladder with exaltation to the uterus & prostate. The central nervous system: Describe the brain – cerebellum – medulla oblongata and the spinal cord.	Lecture, discussion, presentation videos, Display models	practical test

24. Infrastructure

Required reading:	Anatomy
Main references (sources)	1- مبادئ علم التشريح لطلبة معاهد المهن الصحية، الدكتور عبد الرحمن محمود، الرحيم / وزارة الصحة 1983

Recommended books and references (scientific journals, reports,...)	Atlas of anatomy (Grantes) / 1998. Kingham anatomy – Oxford – London / 1987 .
B - Electronic references, Internet sites...	

25. Course development plan

Access to modern scientific literature through:

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Department
3. Course title/code	Safety of laboratories and workshops TIMM 108
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	30 hours
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course Aim of subject General aims: Knowledge of public security and safety procedures.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- General safety precautions in laboratories. A2- Knowledge of safety papers for chemicals and the signals that must be respected in laboratories bonds .	

A3- Identify the types of fires and means of extinguishing them. A4- first aid
B - The skills objectives of the course. B1 – Know the precautions when dealing with chemicals, tools and laboratory equipment. B2 - Know the safety precautions when storing and preserving chemicals. B3 - Handling firefighting equipment. B4 - Safety precautions after completing work in the laboratory.
Teaching and learning methods
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.
Evaluation methods
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher’s answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.
C- Emotional and value goals C1- Use and clean laboratory equipment. C2- The meaning of the signs that must be respected in laboratories and workshops. C3- The meaning of occupational health and its requirements. C4- Able to perform first aid.
Teaching and learning methods
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.
Evaluation methods
Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher’s answers) and deductive and deductive questions.
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Field visits to gain experience from others. D2- Access to scientific developments in the field of specialization (educational videos). D3- Practical training in hospitals.

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Safety in laboratories and workshops.	Lecture	2	Test
2	2	Laboratory and types of laboratories	Lecture	2	test
3	2	General safety precautions in chemical laboratories	Lecture	2	test
4	2	Personal protection tools	Lecture	2	Test
5	2	The importance of laboratories and precautions when dealing with chemicals, tools, and laboratory equipment	Lecture	2	test
6	2	Safety papers for chemicals and signals that must be respected in laboratories	Lecture	2	test
7	2	Occupational health	Lecture	2	test
8	2	Safety precautions when storing and preserving chemicals	Lecture	2	test
9	2	Types and shapes of warehouses, risks and injuries in chemical	Lecture	2	test

		laboratories			
10	2	Types of fires and means of extinguishing them	Lecture	2	test
11	2	Fire classification	Lecture	2	Test
12	2	Fire extinguishing equipment	Lecture	2	test
13	2	first aid	Lecture	2	test
14	2	Safety precautions after completing work in the laboratory	Lecture	2	test
15	2	A set of comprehensive questions for the subject	Lecture	2	Test

5-Infrastructure

Required reading:	
Main references (sources)	<p>1. ادارة الامن والسلامة في المعامل والمختبرات - د. ليلى عبدالله الخطيب الرياض 2018</p> <p>2. السلامة في المختبرات الكيميائية - المملكة العربية السعودية - المؤسسة العامة للتعليم الفني والتدريب المهني – 2009</p> <p>3. معايير ومتطلبات السلامة والجودة في المختبرات - احمد السروري - 2014</p>
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	https://www.noor-book.com/tag/%D9%82%D9%88%D8%A7%D8%B9%D8%AF-

	%D8%A7%D9%84%D8%B3%D9%84%D8%A7%D9%85%D8%A9-%D9%81%D9%8A-%D8%A7%D9%84%D9%85%D8%AE%D8%AA%D8%A8%D8%B1#google_vignette
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6- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/Department	Mosul Medical Technical Institute/ pharmacy techniques, Department
3. Course title/code	Medical Terminology (109)
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of study hour (total)	30 hour
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
<ol style="list-style-type: none"> 1- Teaching and training the student on how to pronounce letters correctly. 2- Teaching and training the student on how to communicate with others. 3- Teaching and training the student to know the tenses and their structure. 4- Teaching and training the student to know how to make a question and a negation. 5- Teaching and training the student on how to use punctuation and definition tools. 6- Teaching and training the student on how to know information about himself and others as well. 	
Course outcomes and teaching, learning and evaluation methods	
A. Cognitive objectives	
A1- Identify tenses (present simple, past simple, and future simple) .	

<p>A2- Learn how to pronounce correctly .</p> <p>A3- Learn how to provide a personal biography for an individual.</p> <p>A4- Focus on grammar.</p> <p>A5- Clear vocabulary approach.</p> <p>A6- Work on integrated skills.</p>
<p>B - The skills objectives of the course.</p> <p>B1- Training in identifying correct sentences from incorrect sentences and explaining the reason.</p> <p>B2 - Training students on how to tell the time.</p> <p>B3 - Training on some countries, nationalities, and languages.</p> <p>B4 - Training on introduction, getting to know each other, and bidding farewell.</p>
<p>Teaching and learning methods</p> <p>Traditional lecture, writing reports, conducting seminars, systematic training in the classroom, and the use of technology in modern education, self-learning, feedback, deductive and analytical thinking questions, systematic training in laboratories.</p>
<p>Evaluation methods</p> <p>Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher’s answers, and ask analytical and deductive questions.</p>
<p>C- Emotional and value goals</p> <p>C1- Training on how to deal with incorrect sentences.</p> <p>C2- Training on how to improve your skills to use the English language more effectively and perform well in your studies.</p> <p>C3- Training on how to proceed at work and communicate in English in your free time. .</p> <p>C4- Training on how to deal with native speakers.</p> <p>C5- Training on how to benefit from acquired skills.</p> <p>C6- Instilling a love of knowledge in the student by encouraging him to learn.</p>
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development).</p> <p>D1-Encouraging reading of texts in English.</p> <p>D2- Access to scientific developments in the field of specialization (educational videos).</p>

11. Course Structure

Week	Hours	Required learning outcomes	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Introducing students to the importance of the medical terminology course and its nature	Introduction To Medical Terminology	Lecture, discussion, pairs of students to conduct dialogues, representation by drawing on the blackboard, PowerPoint	Oral Test
2	2	Identify the structure of the medical term and its basic parts	Basic Word Structure	Lecture, discussion, video presentation, and PowerPoint	Oral Test
3	2	Identify the root word of the medical term	Root	Lecture, discussion, PowerPoint presentation, acting pairs	Oral Test
4	2	Identify the syllables that are added to the beginnings of a medical term	The Prefix	Lecture, discussion, video presentation, and pair acting	Oral and Practical Test
5	2	Identify the syllables that are added to the ends of a medical term	The Suffix	Lecture, discussion, video and photo presentation	Practical and Oral Test
6	2	Learn how to connect medical terms	Rules For Combining Vowels	Lecture, discussion, video and photo presentation	Practical Test
7	2	Identify the types of	Combining Form	Lecture, discussion, slide	Practical and Oral Test

		association related to medical terms		show	
8	2	Learn about the most important medical terms and concepts of pathology	Medical terminology and pathology	Lecture, discussion, video and photo presentation	Practical Test
9	2	Identify the most important medical terms related to the heart, circulatory, and nervous systems, its component parts, and the most important common diseases	Terms of Cardiovascular system Terms of Nervous system	Lecture, discussion, showing videos and photo	Practical Test
10	2	Identify the most important medical terms related to the digestive and urinary systems, their component parts, and the most common diseases	Terms of Digestive system Terms of Urinary system	Lecture, discussion, presentation of videos and photos	Practical Test

11	2	Identify the most important medical terms related to the blood and lymphatic system, its component parts, and the most important common diseases	Terms of Blood and Lymphatic system	Lecture, discussion, presentation of videos and photos	Practical Test
12	2	Identify the most important medical terms related to the respiratory system, its component parts, and the most common diseases	Terms of Respiratory system	Lecture, discussion, presentation of videos and photos	Practical Test
13	2	Identify the most important medical terms related to teeth, face and jaws	Terms Of Teeth And Oral Facial Regio	Lecture, discussion, presentation of videos and photos	Practical Test
14	2	Identify the most important medical terms related to conditions	Positional and directional terms	Lecture, discussion, presentation of radiological videos and films	Practical Test

		and trends			
15	2	Identify the most important medical terms related to the musculoskeletal system, its component parts, and the most common diseases	Musculoskeletal System	Lecture, discussion, presentation of videos and photos	Practical and Oral Test

5-Infrastructure	
Main references (sources)	1-Gyls, B. A., & Wedding, M. E. (2017). Medical terminology systems: a body systems approach. FA Davis.
Recommended books and references (scientific journals, reports,...)	Henderson, B., & Dorsey, J. L. (2019). Medical terminology for dummies. John Wiley & Sons.
B - Electronic references, Internet sites...	

6- Course development plan
<p>Access to modern scientific literature</p> <ol style="list-style-type: none"> 1- Access to modern scientific literature. 2- Participation in relevant scientific conferences. 3- Devoting the teaching and training staff to apply and work in places to apply what has been learned. 4- Hosting specialized professors. 5- Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Techniques Department
3. Course title/code	Principles Of pharmaceutics (PHT112)
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60 hours
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
1- Teaching and training the student to understand principle of pharmaceutics 2- Teaching and training the student to understand pharmacy science and historical review 3- Teaching and training the student to know drug classifications 4- Teaching and training students to know drugs and sources 5- Teaching and training the student to know drug route of administrations .	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identify the drugs pharmaceutics . A2- Identify how drugs calculation method . A3- Identifying the pathway of administered drugs in the body and drug formulation.	
B - The skills objectives of the course. B1 – know how different drugs preparation B2 – know the routes of drug stability for long time . B3 – know the drugs classification .	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student	

answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.

C- Emotional and value goals

C1- Training on how to deal with drugs and there classification.

C2- Training on how to deal with the suitable routes of drug administration.

C3- Training on how to deal with drug pharmacokinetics and pharmacodynamics.

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Summer training in hospitals .

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Science of pharmacy, definitions	Describe the Science of pharmacy, definitions	Lecture, discussion, presentation	Test

		----- Practical : General term in practical pharmaceuticals	----- Describe the General term in practical pharmaceuticals		
2	4	Weight and measures ----- Practical : Discussion	How drugs Weight and measures ----- Discuss the previous lab	Lecture, discussion, presentation	Test
3	4	Pharmaceutical dosage forms , aromatic water ----- Practical : Seminar	How Pharmaceutical dosage forms , aromatic water ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
4	4	Medical prescription ----- Practical : Routes of Administration	How Medical prescription ----- Advantages and disadvantages of routes of the administration	Lecture, discussion, presentation	Test
5	4	Pharmaceutical technique ----- Practical : Practical : Discussion	Pharmaceutical technique ----- Discuss the previous lab	Lecture, discussion, presentation	Test
6	4	Solubility, solute and solvent ----- Practical : Seminar	Describe the Solubility, solute and solvent ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
7	4	Drug formulation ----- Practical Cosolvent	Describe the Drug formulation ----- Describe the Cosolvent Effects	Lecture, discussion, presentation	Test
8	4	Drug stability ----- Practical : Discussion	Describe the Drug stability -----	Lecture, discussion, presentation	Test

			Discuss the previous lab		
9	4	Drug preservation ----- Practical : Seminar	Describe the Drug preservation ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
10	4	Quantities and measurements ,Patient instruction . ----- Practical Practical abbreviations	Describe Quantities and measurements ,Patient instruction . ----- Describe the Practical abbreviations	Lecture, discussion, presentation	Test
11	4	Master formula ,scaled formula ----- Practical : Discussion	Describe Master formula ,scaled formula ----- Discuss the previous lab	Lecture, discussion, presentation	Test
12	4	Solubility and concentration . ----- Practical : Seminar	Describe Solubility and concentration . ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
13	4	solutions ----- Practical Calculations	Describe solutions dosage form ----- Describe the Practical Calculations	Lecture, discussion, presentation	Test
14	4	Vehicles : ----- Practical Practical : Discussion	Describe the Vehicles ----- Discuss the previous lab	Lecture, discussion, presentation	Test
15	4	Suspensions ----- Practical : Seminar	Describe the Suspensions dosage form -----	Lecture, discussion, presentation	Test practical

			Practical presentation the previous lab		
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6-Infrastructure	
Required reading:	
Main references (sources)	References: 1 pharmaceutical calculations 13th edition Howard C . Ansel 2 Introduction to pharmaceutical calculations 4th Edition Judith A Rees , Ian Smith and Jennie Watson .
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

7- Course development plan
<p>Access to modern scientific literature</p> <ol style="list-style-type: none"> 1- Participation in relevant scientific conferences 2- Hosting specialized professors 3- Academic pairing with corresponding , departments institutes and other universities

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/pharmacy Techniques Department
3. Course title/code	Basics Of Organic Chemistry PH113
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities

6. Semester/Year	Modules
7. Number of hours tuition (total)	60 HOURS
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1- Teaching and training students on how to prepare chemical compounds.	
2- Teaching and training students to use chemicals safely and participate in developing products and protecting the environment and health from harmful chemicals.	
3- Teaching and training students on the types of chemicals and how to deal with them.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identify the structure of organic chemicals.	
A2- Learn how to distinguish between types of organic chemicals.	
A3- Learn how to manufacture, create and present new products to society, as they are used in food, cosmetics, pharmaceutical, fuel, petroleum and plastic industries	
B - The skills objectives of the course.	
B1 - Training in preparing organic chemicals.	
B2 - Training students on how to distinguish between types of chemicals.	
B3 - Training students on occupational safety procedures in the laboratory.	
B4 - Training on first aid in the event of any accidents occurring inside the laboratory.	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.	
C- Emotional and value goals	
C1- That the student be able to prepare some solutions.	
C2-Distinguishing between different chemicals	
C3- Use scientific tools and equipment and handle them well	
C4- Detection of important chemical substances and compounds.	
Teaching and learning methods	
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.	
Evaluation methods	

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction to organic chemistry, organic compounds present in nature, pollution with organic compounds	Lecture, discussion,	Theoretical and practical	Test
2	4	Hybridization methane, Ethylene, Acetylene	Lecture, discussions	Theoretical and practical	test
3	4	Hydrocarbons Classification alkane, alkenes, benzene example, Reaction, Nomenclature, properties	Lecture, discussion,	Theoretical and practical	test
4	4	Alkynes, Example, Nomenclature, Properties, Reaction	Lecture, discussion,	Theoretical and practical	Test
5	4	Aromatic compound, Names, Polycyclic aromatic compound, Electrophilic aromatic substitutions	Lecture, discussion,	Theoretical and practical	test
6	4	Phenols, Synthesis, Reaction, Properties	Lecture, discussion	Theoretical and practical	test
7	4	Alcohols, Classification and properties, Reactions	Lecture, discussion,	Theoretical and practical	test
8	4	Aldehyde's, Classification and properties, Reactions	Lecture, discussion,	Theoretical and practical	test
9	4	Ketones, Classification and properties, Reactions	Lecture, discussion,	Theoretical and practical	test
10	4	Carboxylic acid, Classification and properties, Reactions	Lecture, discussion,	Theoretical and practical	test

11	4	Ester, Reaction and Properties	Lecture, discussion,	Theoretical and practical	Test
12	4	Ether , Nomenclature and properties	Lecture, discussion,	Theoretical and practical	test
13	4	I.R. and UV. spectroscopy	Lecture, discussion,	Theoretical and practical	test
14	4	Hetero cyclic	Lecture, discussion,	Theoretical and practical	test
15	4	Stereochemistry	Lecture, discussion,	Theoretical and practical	Test

4-Infrastructure	
Required reading:	
Main references (sources)	1-Organic chemistry, 6thEd , Morrison & Boyd, Prentice Hall of India, 19/2/2016.
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	2-Advanced Organic Chemistry. Reactions and Synthesis, Ed4(Part B), Carey F., Sundberg R. , Kluwer 2000. 3-Organic chemistry, Ed5 , Carey F.A, MGH 2004.

5- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- -Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy techniques Department
3. Course title/code	Analytical chemistry PHT114
4. Programme (s) to which it contributes	Diploma pharmacy techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60 Hours
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
Aim of subject	
General aims:	
It give an general idea about compound and able to student to make different experiment and chemical reaction .	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identify the Atom, Element, Isotopes. A2- Identify the Matter, Chemical bonds . A3- Identifying the Express of concentration.	
B - The skills objectives of the course. B1 – How to use and clean laboratory equipment. B2 - How to act with different chemical reagents. B3 - How to prepare different concentration solution. B4 - How to use the laboratory instrument.	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.	

<p>C- Emotional and value goals</p> <p>C1- Use and clean laboratory equipment.</p> <p>C2- Can able to act with different chemical reagents.</p> <p>C3- Can able to prepare different concentration solution.</p> <p>C4- Can able to use the laboratory instrument.</p>
<p>Teaching and learning methods</p>
<p>Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.</p>
<p>Evaluation methods</p>
<p>Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.</p>
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development).</p> <p>D1- Field visits to gain experience from others.</p> <p>D2- Access to scientific developments in the field of specialization (educational videos).</p> <p>D3- Practical training in hospitals.</p>

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction of analytical chemistry	Knowledge and practical application,	Theoretical and practical	Test
2	4	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.	Knowledge and practical application,	Theoretical and practical	test
3	4	The evaluation of analytical data: Definition of terms.	Knowledge and practical application,	Theoretical and practical	test

4	4	An introduction to gravimetric analysis: precipitation methods; gravimetric factor	Knowledge and practical application,	Theoretical and practical	Test
5	4	The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents.	Knowledge and practical application,	Theoretical and practical	test
6	4	An introduction to volumetric methods of analysis:	Knowledge and practical application,	Theoretical and practical	test
7	4	Volumetric calculations; acid-base equilibrium and pH calculations.	Knowledge and practical application,	Theoretical and practical	test
8	4	Buffer solutions:	Knowledge and practical application,	Theoretical and practical	test
9	4	Theory of neutralization titrations of simple system.	Knowledge and practical application,	Theoretical and practical	test
10	4	Theory of neutralization titrations of complex system	Knowledge and practical application,	Theoretical and practical	test
11	4	Precipitation titrations.	Knowledge and practical application,	Theoretical and practical	Test
12	4	Calculation of pH in complex system; Volumetric methods based on complex system.	Knowledge and practical application,	Theoretical and practical	test
13	4	Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units.	Knowledge and practical application,	Theoretical and practical	test
14	4	The evaluation of analytical data:	Knowledge	Theoretical	test

		Definition of terms.	and practical application,	and practical	
15	4	An introduction to gravimetric analysis: precipitation methods; gravimetric factor	Knowledge and practical application,	Theoretical and practical	Test

5-Infrastructure	
Required reading:	
Main references (sources)	<p>4. Fundamentals of Analytical Chemistry - Douglas A.Skoog – Donald M.West - 3rd Edition,1976</p> <p>5. أسس الكيمياء التحليلية – أ.د. محمد مجدي عبدالله واصل – جمهورية مصر العربية</p> <p>6. المختصر في حل مسائل الكيمياء التحليلية الكمية - أ.د. منذر سليم عبد اللطيف 2016 -</p>
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	https://books-library.net/c-analytical-chemistry-best-download#google_vignette

6- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION pharmaceutical calculation (PHT112)

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Techniques Department

3. Course title/code	Pharmaceuticals Calculation (PHT115)
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
<p>1- Teaching and training the student to understand principle of pharmaceutical calculation</p> <p>2- Teaching and training the student to understand pharmacy science and calculation and historical review</p> <p>3- Teaching and training the student to know drug classifications</p> <p>4- Teaching and training students to know drugs and sources</p> <p>5- Teaching and training the student to know drug route of administrations .</p>	
10. Course outcomes and teaching, learning and evaluation methods	
<p>A1- Identify the drugs pharmaceutical calculation .</p> <p>A2- Identify how drugs calculation method .</p> <p>A3- Identifying the pathway of administered drugs in the body and drug formulation.</p>	
<p>B - The skills objectives of the course.</p> <p>B1 – know how different drugs preparation</p> <p>B2 – know the routes of drug stability for long time .</p> <p>B3 – know the drugs classification .</p>	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher’s answers, reports on scientific	

developments in the field of specialization, and asks analytical and deductive questions.
C- Emotional and value goals C1- Training on how to deal with drugs and dosage calculation and their classification. C2- Training on how to deal with the suitable routes of drug administration. C3- Training on how to deal with drug pharmacokinetics and pharmacodynamics.
Teaching and learning methods
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, and summer training.
Evaluation methods
Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher. The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Field visits to gain experience from others. D2- Access to scientific developments in the field of specialization (educational videos). D3- Summer training in hospitals .

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	emulsions ----- Practical : General term in practical pharmaceuticals	Describe the emulsions ----- Describe the General term in practical pharmaceuticals	Lecture, discussion, presentation	Test
2	4	Ophthalmic products	How drugs used as	Lecture, discussion,	Test

		----- Practical : Discussion	Ophthalmic products ----- Discuss the previous lab	presentation	
3	4	Nasal products ----- Practical : Seminar	how to use Nasal products ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
4	4	Otic products ----- Practical : Routes of Administration	How to use Otic products ----- Advantages and disadvantages of routes of the administration	Lecture, discussion, presentation	Test
5	4	Mouth washes ----- Practical : Practical : Discussion	Mouth washes ----- Discuss the previous lab	Lecture, discussion, presentation	Test
6	4	Gargles ----- Practical : Seminar	Describe the Gargles ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
7	4	Rectal products ----- Practical Cosolvent	Describe the Rectal products ----- Describe the Cosolvent Effects	Lecture, discussion, presentation	Test
8	4	Vaginal products ----- Practical : Discussion	Describe the Vaginal products ----- Discuss the previous lab	Lecture, discussion, presentation	Test
9	4	Topical solutions -----	Describe the Topical solutions	Lecture, discussion,	Test practical

		Practical : Seminar	----- Practical presentation the previous lab	presentation	
10	4	Topical tinctures . ----- Practical Practical abbreviations	Describe the Topical tinctures . ----- Describe the Practical abbreviations	Lecture, discussion, presentation	Test
11	4	Solid dosage forms ----- Practical : Discussion	Describe Solid dosage forms ----- Discuss the previous lab	Lecture, discussion, presentation	Test
12	4	Pharmaceutical powders ----- Practical : Seminar	Describe the Pharmaceutical powders . ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
13	4	Granules ----- Practical Calculations	Describe the Granules ----- Describe the Practical Calculations	Lecture, discussion, presentation	Test
14	4	Problems encountered powder formulation ----- Practical Practical : Discussion	Describe the Problems encountered powder formulation ----- Discuss the previous lab	Lecture, discussion, presentation	Test
15	4	Effervescent granules ----- Practical : Seminar	Describe the Effervescent granules -----	Lecture, discussion, presentation	Test practical

			Practical presentation the previous lab		
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26. Infrastructure	
Required reading:	
Main references (sources)	References: 1 pharmaceutical calculations 13 th edition Howard C . Ansel 2 Introduction to pharmaceutical calculations 4th Edition Judith A Rees , Ian Smith and Jennie Watson .
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

27. Course development plan
Access to modern scientific literature 1- Participation in relevant scientific conferences 2- Hosting specialized professors 3- Academic pairing with corresponding , departments institutes and other universities

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/pharmacy Techniques Department
3. Course title/code	organic chemistry PHT116
4. Programme (s) to which it contributes	Diploma pharmacy Techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1- Teaching and training students on how to prepare chemical compounds.	
2- Teaching and training students to use chemicals safely and participate in developing products and protecting the environment and health from harmful chemicals.	
3- Teaching and training students on the types of chemicals and how to deal with them.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identify the structure of organic chemicals.	
A2- Learn how to distinguish between types of organic chemicals.	
A3- Learn how to manufacture, create and present new products to society, as they are used in food, cosmetics, pharmaceutical, fuel, petroleum and plastic industries	
B - The skills objectives of the course.	
B1 - Training in preparing organic chemicals.	
B2 - Training students on how to distinguish between types of chemicals.	
B3 - Training students on occupational safety procedures in the laboratory.	
B4 - Training on first aid in the event of any accidents occurring inside the laboratory.	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific	

developments in the field of specialization, and asks analytical and deductive questions.

C- Emotional and value goals

C1- That the student be able to prepare some solutions.

C2-Distinguishing between different chemicals

C3- Use scientific tools and equipment and handle them well

C4- Detection of important chemical substances and compounds.

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction to organic chemistry, organic compounds present in nature, pollution with organic compounds	Lecture, discussion,	Theoretical and practical	Test
2	4	Hybridization methane, Ethylene, Acetylene	Lecture, discussions	Theoretical and practical	test
3	4	Hydrocarbons Classification alkane, alkenes, benzene example, Reaction, Nomenclature, properties	Lecture, discussion,	Theoretical and practical	test
4	4	Alkynes, Example, Nomenclature, Properties, Reaction	Lecture, discussion,	Theoretical and practical	Test

5	4	Aromatic compound , Names, Polycyclic aromatic compound , Electrophilic aromatic substitutions	Lecture, discussion,	Theoretic al and practical	test
6	4	Phenols , Synthesis ,Reaction , Properties	Lecture, discussion	Theoretic al and practical	test
7	4	Alcohols , Classification and properties , Reactions	Lecture, discussion,	Theoretic al and practical	test
8	4	Aldehyde's , Classification and properties , Reactions	Lecture, discussion,	Theoretic al and practical	test
9	4	Ketones , Classification and properties , Reactions	Lecture, discussion,	Theoretic al and practical	test
10	4	Carboxylic acid , Classification and properties , Reactions	Lecture, discussion,	Theoretic al and practical	test
11	4	Ester, Reaction and Properties	Lecture, discussion,	Theoretic al and practical	Test
12	4	Ether , Nomenclature and properties	Lecture, discussion,	Theoretic al and practical	test
13	4	I.R. and UV. spectroscopy	Lecture, discussion,	Theoretic al and practical	test
14	4	Hetero cyclic	Lecture, discussion,	Theoretic al and practical	test
15	4	Stereochemistry	Lecture, discussion,	Theoretic al and practical	Test

5-Infrastructure	
Required reading:	
Main references (sources)	1-Organic chemistry, 6thEd , Morrison & Boyd, Prentice Hall of India, 19/2/2016.
Recommended books and references (scientific journals, reports,...)	

B - Electronic references, Internet sites...	2-Advanced Organic Chemistry. Reactions and Synthesis, Ed4(Part B), Carey F., Sundberg R. , Kluwer 2000. 3-Organic chemistry, Ed5 , Carey F.A, MGH 2004.
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6- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy Techniques Department
3. Course title/code	Biochemistry PH117
4. Programme (s) to which it contributes	Diploma pharmacy Techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	1-Teaching and training the student on how to use the spectrophotometer and the centrifuge. 2-Teaching and training students to conduct chemical analyzes used in the laboratory to diagnose diseases. 3- Teaching and training students to recognize and differentiate between types of laboratory

tests to develop their monitoring and observation skills in addition to the skills of recording and interpreting results.

4- Teaching and training the student to conduct analyzes to reveal the effectiveness of the body's organs in performing their various functions and the chemicals present in body fluids, especially blood. All of these substances are in fixed proportions, and any difference in these proportions has a satisfactory significance.

10. Course outcomes and teaching, learning and evaluation methods

A1- Learn about conducting studies on blood, urine, and other body fluids..

A2- Learn how to distinguish between types of tests to detect the percentage of elements present in the body..

A3- Identifying the how to take samples from patient .

B - The skills objectives of the course.

B1- Training on methods of conducting chemical tests, such as examining carbohydrates, enzyme activity, and examining urine and mineral elements.

B2 - Training students on how to distinguish between each examination and how to diagnose examination results.

B3 - Training students on how to use a spectrophotometer and a centrifuge to examine samples.

B4 - Training on the skill of handling samples

Teaching and learning methods

Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.

Evaluation methods

Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.

C- Emotional and value goals

C1- That the student be able to diagnose diseases

C2- Significance in understanding the expectations and future complications of the disease after the diagnosis has been made.

C3- Therapeutic in monitoring the extent of the patient's response to treatment

C4- Preventive in conducting health surveys of people to detect disease.

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher’s answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction to Biochemistry and its role in medicine and used the device	Lecture, discussion,	Theoretic al and practical	Test
2	4	pH, water, buffers and devices used for diagenesis	Lecture, discussions	Theoretic al and practical	Test
3	4	Continuation of the lecture acid base balance and its disorders.	Lecture, discussion,	Theoretic al and practical	Test
4	4	Carbohydrates structure and metabolism	Lecture, discussion,	Theoretic al and practical	Test
5	4	Classification of carbohydrate, Structure, Function ,Metabolism of	Lecture, discussion,	Theoretic al and practical	Test

		carbohydrate			
6	4	Introduction of Lipids, classified and structure	Lecture, discussion	Theoretical and practical	Test
7	4	Function ,Metabolism of Lipids.	Lecture, discussion,	Theoretical and practical	Test
8	4	Structure and function of proteins	Lecture, discussion,	Theoretical and practical	test
9	4	Structure , function and metabolism of amino acids	Lecture, discussion,	Theoretical and practical	test
10	4	nucleic acid and protein synthesis	Lecture, discussion,	Theoretical and practical	test
11	4	DNA structure and replication, RNA structure and replication, Translation and protein synthesis	Lecture, discussion,	Theoretical and practical	Test
12	4	Enzymes and enzymes kinetics	Lecture, discussion,	Theoretical and practical	test
13	4	Mechanism of enzyme structure and action, functions· Enzyme kinetic and regulation	Lecture, discussion,	Theoretical and practical	test
14	4	Hormones and Types ,properties, function	Lecture, discussion,	Theoretical and practical	test
15	4	vitamins Types ,properties, function	Lecture, discussion,	Theoretical and practical	Test

5-Infrastructure

Required reading:	
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Main references (sources)	1-Modern experimental Biochemistry [3 ed], Rodney F. Boyer, Prentice Hall 2000. 4-Medical Biochemistry Baynes [2 ed], John W. Baynes & Marek H. Dominiczak , Mosby 2004.
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	3-Marks Basic Medical Biochemistry: A Clinical Approach, Michael Liederman and Alisa peet, MD/ 2017. 4-Fundamentals of Clinical Biochemistry: fundamentals & Quick Review, Ms. Sushma uttam kanukale , .2019

6- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Techniques Department
3. Course title/code	PHT118 FIRST AID
4. Programme (s) to which it contributes	Diploma Pharmacy Techniques
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules

7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
<p>11- Teaching and training the student on how to provide first aid when an accident occurs.</p> <p>2- Teaching and training the student on the proper and immediate treatment of the injured person.</p> <p>3- Giving the student the correct instructions regarding first aid when an accident occurs in a laboratory.</p>	
10. Course outcomes and teaching, learning and evaluation methods	
Cognitive objectives -	
.A1- Preserving the life of the injured person	
A2- Identify how to stop harm or damage to the injured person, such as removing him from the area of harm or accident	
A3- Learn how to apply pressure to wounds to stop bleeding	
.And how to deal with it	
B - The skills objectives of the course.	
B1 - Introducing the student to the basics of first aid...	
B2 - Training students on the ability to act in emergency situations that can occur anywhere and at any time.	
B3 - Training students and increasing their skills in providing vital assistance before paramedics arrive.	
B4 - Training on the skill of dealing with accident cases, their symptoms, and methods of first aid.	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.	
C- Emotional and value goals	
C1- That the student be able to provide first aid service	
C2- Providing the student with the necessary skills to provide first aid to people facing such as cases of cardiac arrest, stroke, bleeding, fractures, and fainting.	
A3- The student must be able to deal with the sick or injured person until the ambulance	

arrives

C4- The student learns how to stop harm or damage from occurring, such as removing the patient from the source of harm or the scene of the accident and applying pressure on wounds to stop bleeding.

C5- Enhancing the student's skills in providing first aid in a timely manner

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	First aid	Lecture, discussion,	Theoretical and practical	Test
2	2	Burns	Lecture, discussions	Theoretical and practical	Test
3	2	Biological factors	Lecture, discussion,	Theoretical and practical	Test
4	2	Physical factors	Lecture, discussion,	Theoretical and practical	Test

5	2	Chemical factors	Lecture, discussion,	Theoretical and practical	Test
6	2	Wounds	Lecture, discussion	Theoretical and practical	Test
7	2	Bleeding	Lecture, discussion,	Theoretical and practical	Test
8	2	Trauma	Lecture, discussion,	Theoretical and practical	Test
9	2	Fractures	Lecture, discussion,	Theoretical and practical	Test
10	2	Fracture first aid	Lecture, discussion,	Theoretical and practical	Test
11	2	Spinal fractures	Lecture, discussion,	Theoretical and practical	Test
12	2	Accident ambulance	Lecture, discussion,	Theoretical and practical	Test
13	2	Insect bites	Lecture, discussion,	Theoretical and practical	Test
14	2	Insect bites aid	Lecture, discussion,	Theoretical and practical	Test
15	2	Review	Lecture, discussion,	Theoretical and practical	Test

5-Infrastructure	
Required reading:	
Main references (sources)	
Recommended books and references (scientific journals, reports,...)	1THE COMPLETE FIRST AID 2–FIRST AID GUIDE
B - Electronic references, Internet sites...	

6- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy Techniques Department
3. Course title/code	Microbiology PHT120
4. Programme (s) to which it contributes	Pharmacy Tech Diploma
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
	<ol style="list-style-type: none"> 1- Introducing the student to medical microbiology (germs, parasites, viruses) so that he can diagnose the diseases they cause through clinical signs. 2- Introducing the student to laboratory methods and diagnostic methods related to them 3- Introducing the student to methods of preventing infection from these pathogenic organisms and the means of control available to limit their spread 4- Explaining epidemic diseases caused by microorganisms
10. Course outcomes and teaching, learning and evaluation methods	
	<p>A1- Identify microorganisms and their names</p> <p>A2- Identify the diseases they cause and methods of transmission and prevention</p> <p>A3- Identify diagnostic methods</p>

<p>B - The skills objectives of the course.</p> <p>B1 Training in examining microorganisms under a microscope</p> <p>B2 - Training students on how to deal with laboratory equipment such as a microscope, incubator, autoclave, and others</p> <p>B3 - Training on methods of cultivating microorganisms and developing them in the laboratory.</p> <p>B4 - Training on how to diagnose microorganisms.</p>
<p>Teaching and learning methods</p>
<p>Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.</p>
<p>Evaluation methods</p>
<p>Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.</p>
<p>C- Emotional and value goals</p> <p>C1- Respect patients.</p> <p>C2- Maintaining patients' secrets.</p> <p>C3- Accuracy and honesty in work</p>
<p>Teaching and learning methods</p>
<p>Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.</p>
<p>Evaluation methods</p>
<p>Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.</p>
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development).</p> <p>D1- Field visits to gain experience from others.</p> <p>D2- Access to scientific developments in the field of specialization (educational videos).</p> <p>D3- Practical training in hospitals.</p>

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	History of microbiology Classification of microorganism, bacterial shape	Describe the type of microscopic organism and methods of diagnosing it	theoretical practical	test
2	4	Anatomy of the bacterial cell, cell wall, flagella, plasma membrane, ribosomes, endospores	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
3	4	Bacterial physiology and metabolism growth, Division, nutrition and other requirements like oxygen	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	test
4	4	Sterilization and disinfection. Types of sterilization, preservative (The control of microbial growth), Immunization	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	Test
5	4	Pathogenicity of bacteria, Stages of infection	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
6	4	development of the disease, Virulence factor of bacteria Antibiotics, Mechanisms of antimicrobial action, Combination of antibiotic therapy, synergism, antagonism, indifferences.	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
7	4	Bacterial groups and their diseases. Gram-positive	Describe the type of microscopic organism and	Theoretical - practical	practical test

		cocci <i>Staphylococcus aureus</i> <i>S. epidermidis</i> , <i>Streptococcus pyogenes</i> , <i>Strept. Pneumonia</i> .	methods of diagnosing it		
8	4	gram-positive bacilli <i>Corynebacterium diphtheria</i> . <i>Mycobacterium tuberculosis</i> , <i>Clostridium</i> <i>peregrines</i> . <i>Clostridium</i> <i>tetani</i>	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
9	4	Gram negative bacilli, <i>E. coli</i> . <i>Salmonella spp.</i> <i>Shigella spp.</i> <i>Vibrio cholera</i> .	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
10	4	Viruses, morphology, replication, Eukaryotic cell, Some humane pathogenic viruses <i>Hepatitis B virus</i> , <i>Rhinoviruses</i> , <i>HIV</i> , <i>Rabies</i> , <i>measles</i> ..	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
11	4	Eukaryotic cell, cell components, cell division in Eukaryotes, mitosis, meiosis.	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
12	4	<i>Trichomonas vaginalis</i>), Blood parasite (<i>Trypanosoma</i> <i>gambiense</i> , <i>Plasmodium</i>) Tissue parasite (cutaneous <i>leishmaniasis</i> , <i>Toxoplasma</i>	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
13	4	General characteristic, medical classification of fungi, <i>T.</i> <i>rubrum</i> . <i>Aspergillus C.</i> <i>albicans</i> , fungus drug contamination	Describe the type of microscopic organism and methods of diagnosing it	Theoretical - practical	practical test
14	4	Parasitic Helminths (worms), general characteristics, blood tapeworms (<i>Schistosoma</i> <i>mansoni</i>), Intestinal	Describe the type of microscopic organism and methods of	Theoretical - practical	practical test

		tapeworms (<i>Taenia Spp</i>), Intestinal roundworms (<i>Ascaris lumbricoides</i> , <i>Enterobius vermicularis</i> (diagnosing it		
15	4	Seminar		practical	practical test

12. Infrastructure	
Required reading:	microbiology
Main references (sources)	Jawetz, Melnick & Adelberg's Medical Microbiology 28th edition
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

13. Course development plan
<p>Access to modern scientific literature</p> <ol style="list-style-type: none"> 1- Participation in relevant scientific conferences 2- The teaching and training staff is partially devoted to applying and working in hospitals 3- Hosting specialized professors 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute pharmacy. Techniques Department
3. Course title/code	Computer 2 NTU201
4. Programme (s) to which it contributes	Technical diploma in pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules

7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1- Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.	
2- Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.	
3. Perform his duties at the workplace for professional motives.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.	
B - The skills objectives of the course.	
B1 - Teaching the student the skills of working on the computer and the use of ready-made applications and the principles of the Internet in the field of specialization.	
Teaching and learning methods	
((Theoretical lectures / practical lectures / field visits / solving examples / seminars / summer training))	
Evaluation methods	
((Oral exams / written tests / weekly reports / daily attendance / semester and final exams))	
C- Emotional and value goals	
C1- Perform his duties at the workplace for professional motives.	
Teaching and learning methods	
((Theoretical lectures / practical lectures / field visits / solving examples / seminars / summer training))	
Evaluation methods	
((Oral Tests / Written Tests / Observation / Student Cumulative Record))	
D - Transferable general and qualifying skills (other skills related to employability and personal development).	
D1- Improve their discussion skills.	
D2- Raising their research perceptions and transferring the student from the stage of teaching to learning.	

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
2&1	2	Features of the word processor / running the word / the basic elements of the word window / flipping the	Knowledge and practical	Practical + Theoretical	Tests & Discussion

		language / definition of the paragraph / merging and splitting the paragraph / selecting (shading) the text.	application		
3	2	New / Open Inventory File / Close Document / Save New Document / Save Existing Document / Preview Before Printing / Close Document / End Word	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
4	2	Clipboard: Cut / Copy / Paste / Copy Format Font: Change font / font size / enlarge and reduce font / clear formatting / change font color / text highlight color / subscript / superscript text / change case / underline style / effects / character spacing Paragraph: Numbering / Bullets / Create a bulleted list to existing text / Cancel bullets / Indent / Paragraph spacing / Line spacing / Text direction / Alignment / Borders & Shading Styles: Normal / No Spacing / Heading 1 / Heading 2 / Subtitle / Change Styles / Show Preview / Disable Linked Styles / Options Edit: Find/Go/Replace/Select	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
5	2	Pages: Blank Page / Cover Page / Page Break Table: Insert Table / Draw Table / Convert Text to Table / Excel Data Table / Quick Tables / Table Styles / Draw Table Borders Illustrations: Picture / Clip Art / Prepared Shapes / Smart Art Drawing / Chart	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
6	2	Header and footer: header / footer / page number Text: text box / ornate text Word art / signature line / date and time / object / equation / symbol.	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
7	2	Features: Themes / Colors / Fonts / Effects.	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
9&8	2	Attributes : Themes / Colors / Fonts / Effects Page Setup: Margins / Page Size / Orientation Page Background: Watermark / Page Color / Page Borders Order: Position / Bring Forward / Send to Background / Wrap Text / Align / Group / Rotate.	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
11&10	2	Table of Contents / Add Text / Update Table Footnotes: Insert footnote / Insert endnote / Next footnote / Show notes References and citation: insert quote / source management / style Captions: Insert Caption Index: Index Insertion / Mark Entry / Update Index	Knowledge and practical application	Practical + Theoretical	Tests & Discussion
13&12	2	Creation: Envelopes / Labels Proofreading: Spelling & Grammar / Research / Thesaurus / Translation / Translation ScreenTip / Language Set / Word Count Comments: New Comment / Delete / Previous/Next Tracker: Track Changes/Balloons/Final Appearance Tag/Show Tags/Review Pane Changes: Accept/Reject/Previous/Next Protection: Protect your document Document views: Print layout / Full screen reading / Web layout / Outline / Draft Show and hide: ruler / gridlines / document map /	Knowledge and practical application	Practical + Theoretical	Tests & Discussion

		<p>thumbnail</p> <p>Zoom in and out: 100% / one page / two pages / page view</p> <p>Frame: New Frame / All Order / Split / Switch Tire</p> <p>Microsoft office word Help</p>			
15&14	2	<p>Networks and their types / forms of networks / network protocols / Internet and its development / Internet and intranet / firewalls / some basic Internet concepts / Internet connection / open Internet browser / components of the Internet browsing window / browser icons / web addresses / browser use / change the start page / toolbars / close the browser and disconnect the Internet / archives / store favorite pages / search engines / how to search for information on the Internet / copy text and images to any application / download files from the Internet / prepare for printing /Print</p>	Knowledge and practical application	Practical + Theoretical	Tests & Discussion

5-Infrastructure	
Required reading:	Available in the free department and library of the institute
Main references (sources)	Available in the free department and library of the institute
Recommended books and references (scientific journals, reports,...)	Internet

6- Course development plan
<p>1- Developing curricula adapted to the labor market</p> <p>2- Holding seminars and scientific conferences aimed at updating the curricula</p> <p>3- Follow-up scientific developments in the field of specialization</p>

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ PHARMACY Techniques Department
3. Course title/code	Arabic language 2 (NTU202)
4. Programme (s) to which it contributes	Technical diploma in pharmacy

5. Modes of Attendance offered	weekly lesson schedule (theoretical) * Scientific discussions
6. Semester/Year	modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
<ol style="list-style-type: none"> 1. Providing students with basic concepts related to the types of sentences in the Arabic language (nominal, verbal, semi-sentence). 2. Definition of the intransitive verb and the transitive verb. 3. Introduction to conjunctions and their meanings. 4. Addressing the original and secondary parsing marks. 5. Explaining some common linguistic errors in administrative discourse. 	
10. Course outcomes and teaching, learning and evaluation methods	
A.Cognitive objectives	
A1- Enabling students to understand the formulation of sentences of their nominal, verbal, and semi-sentence types	
.A2- Developing the cognitive aspects of inflection and construction movements	
A3- Developing students' ability to formulate administrative correspondence in sound language.	
B.Skills objectives for the course -	
B1 - Enable students to choose the correct terms in administrative discourse.	
B2 - Enabling students to know how to analyze and interpret the text properly and to work in accordance with the controls and instructions.	
B1 - Enable students to choose the correct terms in administrative discourse.	
((Periodic exams / direct questions / preparation of special reports))	
Emotional and value goals	
.C1- Developing linguistic culture	
C2- Carrying out his duties at work sites with professional motives and in accordance with the correct interpretation of instructions and controls	
.C3- Rooting the correct methods in administrative discourse	
Teaching and learning methods	
((Brainstorming/preparing special reports))	
Evaluation methods	

((Periodic exams / direct questions / preparation of special reports))

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Developing the skills of students in the field of public employment or the private .sector

.D2- Developing personal skills to develop students' linguistic culture

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	-The subject and the predicate	Knowledge and practical application	theoretical	Tests & Discussion
2	2	-The verb, the subject and the object	Knowledge and practical application	theoretical	Tests & Discussion
3	2	- The intransitive verb and the transitive verb	Knowledge and practical application	theoretical	Tests & Discussion
4	2	- Pronouns	Knowledge and practical application	theoretical	Tests & Discussion
5	2	- Original parsing marks	Knowledge and practical application	theoretical	Tests & Discussion
6	2	- Sub-parsing marks	Knowledge and practical application	theoretical	Tests & Discussion
7	2	- The five actions	Knowledge and practical application	theoretical	Tests & Discussion
8	2	- Conjunctions and their meanings	Knowledge and practical application	theoretical	Tests & Discussion
9	2	- Number and countable	Knowledge and practical application	theoretical	Tests & Discussion
10	2	- The hamza of link	Knowledge and practical application	theoretical	Tests & Discussion
11	2	- The hamza of cutting	Knowledge	theoretical	Tests &

			and practical application		Discussion
12	2	- Extra letters	Knowledge and practical application	theoretical	Tests & Discussion
13	2	-Nun and Tanween	Knowledge and practical application	theoretical	Tests & Discussion
14	2	- Administrative speech	Knowledge and practical application	theoretical	Tests & Discussion
15	2	- Some common mistakes	Knowledge and practical application	theoretical	Tests & Discussion

Infrastructure .12	
1 Required textbooks	General Books
2 Main references (sources)	<ul style="list-style-type: none"> • Ibn Hisham Al-Ansari, singer Al-Labib, with Al-Desouki's entourage. • Abu al-Fadl Jamal al-Din Makram, Lisan al-Arab. • Abu Jaafar Al-Nahas, Book Making. • Abdul Salam Haroun, rules of dictation. • Issam Nour El-Din, linguistic phonology. • Muhammad Makki Al-Jarisi, The End of the Useful Saying. • Musa Hassan Hadib, Comprehensive Encyclopedia of Dictation. • Nasr Al-Hourini, Orthography.
3 Electronic references, websites	.Arabic language websites

Course development plan .13
Include more questions at the end of each topic

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy. Techniques Department
3. Course title/code	Crimes of the Baath regime in Iraq NTU203
4. Programme (s) to which it contributes	Technical diploma in pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical) * Scientific discussions
6. Semester/Year	modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
<p>1- Providing students with basic concepts related to the definition of crimes, their types and divisions.</p> <p>2- Definition of crimes and violations of the former regime and types of international crime</p> <p>3- Introducing mass grave crimes and violations of Iraqi laws</p> <p>4- Addressing environmental crimes, the destruction of cities, policies of demographic change and extrajudicial detention</p> <p>5- Explaining the role of the Supreme Criminal Court in dealing with the crimes of the Baath regime</p>	
10. Course outcomes and teaching, learning and evaluation methods	
<p>A1- Enabling students to understand the concept of crime and the types of national and international crimes.</p> <p>A2- Developing the knowledge aspects of the protection and guarantees of human rights.</p> <p>A3- Developing students' ability to distinguish between crimes and human rights violations and how to confront them</p>	
<p>B - The skills objectives of the course.</p> <p>B1 – Enable students to understand the concept of national and international crime.</p> <p>B2 - Enable students to know human rights and how to defend these rights. And know the guarantees related to them.</p>	
Teaching and learning methods	
((Theoretical lectures, periodic reports / periodic tests / practical case studies)).	
Evaluation methods	
((Periodic exams / direct questions / preparation of special reports))	
C- Emotional and value goals	

C1- Development of legal culture C2- Carrying out his duties in the workplace with professional motives. C3- Instilling the values of tolerance and cooperation in society.
Teaching and learning methods
((Student groups / case studies / preparation of special reports))
Evaluation methods
((Periodic exams / direct questions / preparation of special reports))
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Developing the skills of students in the field of public service or the private sector. D2- Developing personal skills to develop students' legal culture.

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Crimes of the Baath regime under the Law of the Supreme Iraqi Criminal Tribunal in 2005 The concept of crimes and their divisions Definition of crime linguistically and idiomatically	Knowledge and practical application	theoretical	Tests & Discussion
2	2	Crime sections - Crimes of the Baath regime as documented in the Law of the Supreme Iraqi Criminal Tribunal in 2005	Knowledge and practical application	theoretical	Tests & Discussion
3	2	- Types of international crimes - Decisions issued by the Supreme Criminal Court	Knowledge and practical application	theoretical	Tests & Discussion
4	2	- Psychological and social crimes and their effects. - Mental Crimes - Mechanisms of psychological crimes - Effects of mental crimes	Knowledge and practical application	theoretical	Tests & Discussion
5	2	- Social crimes - Militarization of society - The position of the Baath regime on religion	Knowledge and practical application	theoretical	Tests & Discussion
6	2	- Violations of Iraqi laws - Photos of human rights violations and crimes of the authority	Knowledge and practical application	theoretical	Tests & Discussion
7	2	- Some decisions on political and	Knowledge and	theoretical	Tests &

		military violations of the Baath regime	practical application	1	Discussion
8	2	- Places of Prisons and Detention of the Baath Regime	Knowledge and practical application	theoretical 1	Tests & Discussion
9	2	- Environmental crimes of the Baath regime in Iraq	Knowledge and practical application	theoretical 1	Tests & Discussion
10	2	- War and radioactive contamination and mine explosions	Knowledge and practical application	theoretical 1	Tests & Discussion
11	2	- Destruction of towns and villages - Scorched earth policy	Knowledge and practical application	theoretical 1	Tests & Discussion
12	2	- Drainage of marshes - Dredging palm groves, trees and plantings	Knowledge and practical application	theoretical 1	Tests & Discussion
13	2	- Mass grave crimes - Mass graves	Knowledge and practical application	theoretical 1	Tests & Discussion
14	2	- Mass graves and genocide committed by the Baathist regime	Knowledge and practical application	theoretical 1	Tests & Discussion
15	2	- Chronological classification of genocide graves in Iraq	Knowledge and practical application	theoretical 1	Tests & Discussion

7-Infrastructure	
1 Required textbooks	General Books
2 Main references (sources)	Literature on crimes, penal law and human rights available in the college library and the central library of the university
3 Electronic references, websites	Human rights websites.

8- Course development plan
Access to modern scientific literature There are no proposals because the subject is taught in the current academic year for the first time

Course description

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	pharmacy. /Mosul Medical Technical Institute Techniques Department

3. Course title/code	Professional Ethics NTU204
4. programmer (s) to which it contributes	Technical diploma in pharmacy
5. Modes of Attendance offered	(Weekly lesson schedule (theoretical -1 2- Discussions
6. Semester/Year	Modules
7. Number of hours tuition (total)	30 hours (the number of theoretical hours during the 15 weeks)
8. Date of production/revision of this specification	8/1/2024
Course objectives	
-Teaching students that their commitment to the ethics of their professions is an integral part of the correct practice of them, and this commitment is their duty toward	
-Teaching the professional ethics course is considered the cornerstone of preparing future generations professionally and ethically.	
-Teaching a professional ethics course to institute students represents the right beginning for any society that seeks to raise the level of ethical practice among professionals.	
Course outcomes and teaching, learning and evaluation methods	
A- Cognitive objectives a1- Identify the principles of ethical analysis and thinking In various professional situations. a2- Know the difference between Work and profession a3-.RecognitionPatient rights	
B - The skills objectives of the course. B1 -Brainstorming skill inside the hall. B2 -Give examples and modern applications to enhance understanding.	
Teaching and learning methods	
Traditional lecture, report writing, discussion	
Evaluation methods	
Daily written and oral tests, semester and final exams, commitment to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks the student to evaluate himself in light of	

Teacher's answers (analytical and deductive questions).
<p>C- Emotional and value goals</p> <p>C1-The student understands the meaning of the basic terms of the curriculum.</p> <p>C2- That the student understands Characteristics and duties of a medical technician.</p> <p>C3- That The student distinguishes the importance of ethics for the individual and society.</p> <p>C4- That The student compares the concept of work, profession and craft.</p>
Teaching and learning methods
Traditional lecture, feedback, deductive and analytical thinking questions.
Evaluation methods
Written tests, semester and final exams, daily tests, and commitments to assignments such as making reports and then discussing the reports, attendance and commitment.
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development).</p> <p>Dr1- Skills of modern interactive teaching methods among students.</p> <p>Dr2- Scientific competition skills among students through asking questions.</p>

Course structure.3					
Evaluation method	Teaching method	Name of the unit/topic	Required learning outcomes	hours	the week
Duties Quizzes Reports	Theoretical lectures Group discussions	Moral.	identification requester Concept Moral	2	1
Duties Quizzes Reports	Theoretical lectures Group discussions	Work and profession.	Define the student the difference between work and profession	2	2
Duties Quizzes Reports	Theoretical lectures	Professional ethics.	The student understands the nature of professional ethics	2	3

	Group discussions				
Duties Quizzes Reports	Theoretical lectures Group discussions	Values and professional ethics.	Introducing the student to the values and ethics of the profession	2	45&
Duties Quizzes Reports	Theoretical lectures Group discussions	Patterns of unethical behavior In the profession.	Introducing the student to patterns of unethical behavior Administrative corruption + bribery + fraud at work	2	6&7
Duties Quizzes Reports	Theoretical lectures Group discussions	Means and methods of consolidating professional ethics.	Understand the means of consolidating values	2	8
Duties Quizzes Reports	Theoretical lectures Group discussions	Ethics of practicing medical professions Characteristics and duties of a medical technician.	Introducing the student to the duties of medical staff	2	9
Duties Quizzes Reports	Theoretical lectures Group discussions	Patient rights..1	Introducing the student to patient rights	2	10
Duties Quizzes Reports	Theoretical lectures Group discussions	The medical technician's .2 relationship with society and his responsibility towards the environment and public safety.	Introducing the student to the role of the medical technician in society	2	11&12
Duties Quizzes Reports	Theoretical lectures Group	Professional relations (the .1 medical technician's	Clarifying the medical technician's relationship with his co-workers and his subordinates	2	13&14

	discussions	relationship with his colleagues in the health institution.			
Duties	Theoretical lectures Group discussions	Ethics of teaching and learning for patients.	Understand and explain the ethics of teaching and learning to patients	2	15

Infrastructure.4	
1- Required prescribed books	Unified curriculum for technical universities in Iraq
2- Main references (sources)	<ul style="list-style-type: none"> • Abu Al-Khair, Muhammad Saeed (B.T): Guide to Professional Ethics, Faculty of Arts, Zagazig University. • Hassan, Abdul Mahdi Abdul Reda (bt): Rules of professional ethics for nurses and midwives in Iraq, website. www.uobabylon.edu.iq/eprints/pubdoc_10_6984_150.doc • Al-Hourani, Ghaleb Saleh Watanash, Salama Youssef (2007): Academic ethics for university professors from Faculty members' point of view University of Jordan Studies Journal, Educational Sciences, Vol.34), Issue (2), Jordan. • Rabhi, Israa (2018): The concept of bribery, Internet site. https://mawdoo3.com • Mohamed Ahmed (2018): What is the difference

	<p>between a gift and a bribe?https://mawdoo3.com/</p> <ul style="list-style-type: none"> •National Center for Developing Faculty and Leadership Capabilities (2011): Ethics of Scientific Research, Program Series, Egypt. •Mishal, Talal (2018): What is the importance of ethics, website. https://mawdoo3.com/ Al-Mashharawi, Ahmed Hussein (2014):The role of professional ethics in promoting social responsibility in Palestinian government hospitals (Al-Shifa Medical Complex as an example), Master’s thesis in the program •Saudi Commission for Health Specialties (2012): Health Practitioner Ethics, 3rd edition, p. 44. •Quality Assurance Unit (2017): Guide to Professional Ethics, Faculty of Arabic Language, Al-Azhar University, Cairo. •Iraqi Ministry of Health (2018): Code of Medical Research Ethics, National Center for Training and Human Development. <p>Iraqi Ministry of Health (2017): Principles of medical ethics in Iraqi health institutions.</p>
	<p>Recommended books and references (scientific journals, reports,...)</p>

Modern sources via the Internet	B - Electronic references, Internet sites...
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5.Course development plan

- Access to modern scientific literature
- Periodic review of the course

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Techniques Department
3. Course title/code	Bio-Statistic / TIMM202
4. Program (s) to which it contributes	Technical diploma in pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	30 Hour
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	The student will be able to: Processing and analyzing statistical data, arriving at correct conclusions, and preparing statistical forms.
10. Course outcomes and teaching, learning and evaluation methods	
A. <u>Cognitive objectives</u> : The student will be able to: A1. Deal with statistical data. A2. Deal with and knowing life and health statistics. A3. Organize the statistical form and health form related to daily incidents such as births, deaths and diseases	
B - <u>Skills and Behavioral objectives</u> : The student will be able to: • Analyze statistical data.	
C- <u>Emotional and Value-Based objectives</u> : The student will be able to:	

• Explain the community's need to learn statistics and its applications at work

D - General and qualifying skills:

D1. Access to scientific developments in the field of specialization.

D2. Communication skills with others.

D3. Self-reliance skills.

D4. Teamwork skills.

Teaching and learning methods

Traditional lecturing, report writing, conducting seminars, group learning training.

Evaluation methods

Daily written and oral tests, Applied tests, Seminars, Semester and final exams, Commitments to assignments, Attendance and commitment, Feedback (Linking the current topic to the previous topic), Self-evaluation, Reports on scientific developments in the field of specialization, Asking analytical and deductive questions.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	Definition of statistics. Data collection methods. Presentation and description of statistical data, preparation of a questionnaire (unclassified data) form.	Traditional lecture, seminars, group discussion	test
2	2	Representing frequency distributions for "classified data" Tabular display "Frequency distribution tables"	Traditional lecture, seminars, group discussion	test
3	2	Graphical display - inscribed histogram, curved histogram, histogram, polygon histogram	Traditional lecture, seminars, group discussion	test
4	2	measures of central tendency, Arithmetic mean .	Traditional lecture, seminars, group discussion	Test
5	2	The median, Mode	Traditional lecture, seminars, group discussion	Test
6	2	Introduction to sampling theory, "its meaning and reasons for choosing it."	Traditional lecture, seminars, group discussion	Test
7	2	Life statistics, ratio and rate, death	Traditional lecture, seminars,	Test

		statistics	group discussion	
8	2	Fertility statistics	Traditional lecture, seminars, group discussion	Test
9	2	Disease statistics, Life tables	Traditional lecture, seminars, group discussion	Test
10	2	Definition of health statistics and its sources	Traditional lecture, seminars, group discussion	Test
11	2	Fields that the health statistics address	Traditional lecture, seminars, group discussion	Test
12	2	Statistics of causes of death (medical certificate, cause, death, death certificate).	Traditional lecture, seminars, group discussion	Test
13	2	Statistics of health institutions	Traditional lecture, seminars, group discussion	Test
14	2	The most appropriate rates for hospitals and patients. Treatment days. Length of stay (average days of stay)	Traditional lecture, seminars, group discussion	Test
15	2	Family occupancy rate, Admission rate.	Traditional lecture, seminars, group discussion	Test

9- Infrastructure

Required reading:

W. Dixon and F. Massey – Introduction to statistical analysis

* علي عبد الأمير – طب نسائية وتوليد – وزارة الصحة – مطبعة العمال المركزية / 1985 .
* علي عبد الأمير – الأمراض النسائية والتوليد - وزارة الصحة – مطبعة العمال المركزية / 1985 .

Banderfort Hill, Fundament in Biosciences.

B - Electronic references, Internet sites...

10- Course development plan

Access to modern scientific literature through:

- 11- Participation in relevant scientific conferences
- 12- The teaching and training staff is partially devoted to applying and working in hospitals
- 13- Hosting specialized professors
- 14- Academic twinning with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Technologies Department
3. Course title/code	Pharmaceutics PHT 203
4. Programme (s) to which it contributes	Diploma Pharmacy Technologies
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1. Pharmaceutics is the science of dosage form design.	
2. Pharmaceutics deals with the formulation of a pure drug substance into a dosage form.	
10. Course outcomes and teaching, learning and evaluation methods	
A1-Diagnosis of various types of pharmaceutical dosage form based on the qualities and quantity of the compound.	
A2. To know the relationship between the drugs dosage form and the pharmaceutical and medical effectiveness.	
A3- Understanding the compatibility between active ingredient and additives of drugs.	
B - The skills objectives of the course.	
B1 -Understanding the relationship between the active ingredient and additives of drugs.	
B2 - Understanding the dosage form of drugs and route of administration.	
Teaching and learning methods	
((Theoretical lectures, periodic reports / periodic tests)	
Evaluation methods	
((Periodic exams / direct questions / preparation of special reports))	
C- Emotional and value goals	

C1- Studying pharmaceuticals can be a rewarding opportunity to combine your passion with a meaningful job and helps relate the formulation of drugs to their delivery and disposition in the body.

C2- Contribution to Healthcare: The creation of novel medications and pharmaceuticals depends heavily on pharmaceuticals.

C3-Can immediately improve healthcare and possibly save lives by studying pharmaceuticals as it can lead to the discovery of novel medicines for a variety of disorders.

Teaching and learning methods

((Student groups / preparation of special reports))

Evaluation methods

((Periodic exams / direct questions / preparation of special reports))

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Developing the skills of students in the field of public service or the private sector.

D2- Access to scientific developments in the field of specialization .

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction.Medical. prescription. Definition, part of prescription	Lecture and discussion	Theoretic al	Tests & Discussion
2	4	Solution, definition, benefit of solutions. Dissolution. Stability. Coloring and flavoring	Lecture and discussion	Theoretic al	Tests & Discussion
3	4	Ointment, definition, using, benefit, Methods of preparation, types, classification according to the method of preparation.	Lecture and discussion	Theoretic al	Tests & Discussion
4	4	Gel definition, using, benefit, Methods of preparation, types, classification according to the method of preparation.	Lecture and discussion	Theoretic al	Tests & Discussion
5	4	Eye ointment, types with examples	Lecture and discussion	Theoretic al	Tests & Discussion
6	4	Suppositories, definition, using, benefit, examples	Lecture and discussion	Theoretic al	Tests & Discussion
7	4	Suppositories bases, types,	Lecture and	Theoretic	Tests & Discussion

		displacement value.	discussion	al	
8	4	Suppositories bases examples with calculation.	Lecture and discussion	theoretical	Tests & Discussion
9	4	Classification of Suppositories, types, uses, Method of preparation, lubrication of the mould	Lecture and discussion	Theoretical	Tests & Discussion
10	4	Capsules, definition, using.	Lecture and discussion	Theoretical	Tests & Discussion
11	4	Capsules, therapeutic uses.	Lecture and discussion	Theoretical	Tests & Discussion
12	4	Medical tablets, types, methods of preparation, granulation, granulating.	Lecture and discussion	Theoretical	Tests & Discussion
13	4	Medical tablets binders, disintegrating agent, Colouring agents, examples.	Lecture and discussion	Theoretical	Tests & Discussion
14	4	Standardization of Medical tablets	Lecture and discussion	Theoretical	Tests & Discussion
15	4	Tinctures, definition, uses, classification with examples	Lecture and discussion	Theoretical	Tests & Discussion

15- Infrastructure	
1 Required textbooks	General Books
2 Main references (sources)	
3 Electronic references, websites	

16- Course development plan

1. Participation in relevant scientific conferences.
2. Hosting specialized professors.
3. Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy Techniques Department
3. Course title/code	PHT204 Industrial Principles
4. Programme (s) to which it contributes	Technical diploma in pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
1-Teaching and training students on how to manufacture pharmaceuticals.	
2- Teaching and training students on how to work in pharmaceutical factories.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identifying the pharmaceutical industries.	
A2- Identifying on how to work in pharmaceutical factories.	
B - The skills objectives of the course.	
B1 - Training on work in pharmaceutical factories	
B2 Training on how to work in pharmaceutical factories.	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student	

answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.

C- Emotional and value goals

C1- Training on how to work in pharmaceutical factories.

C2- Training on how to deal with medicine in the factory.

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in factories.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction to industrial	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	Test
2	4	Large and small scale	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
3	4	Practical size	Lecture, discussion,	Theoretical and	Test

			presentation of radiological videos and films	practica	
4	4	Size reduction	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	Test
5	4	sieving..	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
6	4	mixing	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
7	4	Type of mixture.	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
8	4	Liquid mixture.	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
9	4	Solid mixture	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
10	4	Evaporation	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
11	4	Filtration.	Lecture, discussion, presentation of radiological videos and films	Theoretic al and practica	practical test
12	4	Extraction.	Lecture, discussion, presentation of radiological videos	Theoretic al and practica	practical test

			and films		
13	4	drying	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
14	4	packaging	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
15	4	Revision.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test

17- Infrastructure

Required reading:	
Main references (sources)	The theory and practice of industrial pharmacy by Leon - Lachman Lecture notes on industrial pharmacy Dr. Munib M-saket university Aman - jorden.
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

18- Course development plan

to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Technologies Department
3. Course title/code	Principles Of Pharmaceutical Chemistry PHT205
4. Programme (s) to which it contributes	Technical diploma in pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1. Pharmaceutical (medicinal) chemistry is concerned with the design (drug design) and synthesis of biologically active molecules.	
2. To gain new chemical molecules that could enable the discovery of new pharmaceuticals or optimize already known drug structures, thereby to expand the portfolio of chemical drugs.	
10. Course outcomes and teaching, learning and evaluation methods	
A1-Diagnosis of various types of pharmaceutical compounds based on the qualities chemical Alvezao.	
A2. To know the relationship between the chemical composition of the drugs pharmaceutical and medical effectiveness.	
A3- Understanding the compatibility and mechanical to receive drugs medical effectiveness.	
B - The skills objectives of the course.	
B1 -Understanding the relationship between the chemical composition and the effectiveness of the drugs.	
B2 - Understanding chemical reactions for prescription drugs with each other.	
Teaching and learning methods	

((Theoretical lectures, periodic reports / periodic tests)
Evaluation methods
((Periodic exams / direct questions / preparation of special reports))
C- Emotional and value goals
C1- Studying medicinal chemistry can be a rewarding opportunity to combine your passion with a meaningful job if you have a sincere interest in biology, chemistry, and how chemicals interact with the human body.
C2- Contribution to Healthcare: The creation of novel medications and pharmaceuticals depends heavily on medicinal chemistry.
C3-Can immediately improve healthcare and possibly save lives by studying medicinal chemistry as it can lead to the discovery of novel medicines for a variety of disorders.
Teaching and learning methods
((Student groups / preparation of special reports))
Evaluation methods
((Periodic exams / direct questions / preparation of special reports))
D - Transferable general and qualifying skills (other skills related to employability and personal development).
D1- Developing the skills of students in the field of public service or the private sector.
D2- Access to scientific developments in the field of specialization .

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Definition: introduction of pharmacopoeia inorganic pharmacopoeia, organic pharmacopoeia	Lecture and discussion	Theoretical and practical	Tests & Discussion
2	4	Physico-chemical properties and biological activity of human body	Lecture and discussion	Theoretical and practical	Tests & Discussion
3	4	Study of physico- chemical properties and the pharmacological activity of Analgesic agents	Lecture and discussion	Theoretical and practical	Tests & Discussion
4	4	Study of physico- chemical properties and the	Lecture and discussion	Theoretical and practical	Tests & Discussion

		pharmacological activity of Analgesic agents			
5	4	Sedative –Hypnotics drugs	Lecture and discussion	Theoretic al and practical	Tests & Discussion
6	4	Sedative –Hypnotics drugs	Lecture and discussion	Theoretic al and practical	Tests & Discussion
7	4	Cholinergics ,Antispasmodics, Antiepileptic drugs	Lecture and discussion	Theoretic al and practical	Tests & Discussion
8	4	Cholinergics ,Antispasmodics, Antiepileptic drugs	Lecture and discussion	Theoretic al and practical	Tests & Discussion
9	4	Central Nervous system stimulants	Lecture and discussion	Theoretic al and practical	Tests & Discussion
10	4	Central Nervous system stimulants	Lecture and discussion	Theoretic al and practical	Tests & Discussion
11	4	Cardiovascular Agents	Lecture and discussion	Theoretic al and practical	Tests & Discussion
12	4	Cardiovascular Agents	Lecture and discussion	Theoretic al and practical	Tests & Discussion
13	4	Anti-infective Agents	Lecture and discussion	Theoretic al and practical	Tests & Discussion
14	4	Local and Topical drugs , Antifungal, Antibacterial	Lecture and discussion	Theoretic al and practical	Tests & Discussion
15	4	Local and Topical drugs , Antifungal, Antibacterial	Lecture and discussion	Theoretic al and practical	Tests & Discussion

5-Infrastructure

1 Required textbooks	General Books
2 Main references (sources)	
3 Electronic references, websites	

6- Course development plan
1.Participation in relevant scientific conferences. 2. Hosting specialized professors. 3. Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Techniques Department
3. Course title/code	Principles Of Drugs (PHT206)
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
1- Teaching and training the student to understand principle of pharmacology 2- Teaching and training the student to understand pathway of administered drugs in the body. 3- Teaching and training the student to know how drugs act 4- Teaching and training students to know autonomic agonist and antagonist 5- Teaching and training the student to know CNS drugs. 6- Teaching and training the student to know anesthetics and analgesic act 6-.	
10. Course outcomes and teaching, learning and evaluation methods	

<p>A1- Identify the drugs, types and historical view .</p> <p>A2- Identify how drugs act in the body .</p> <p>A3- Identifying the pathway of administered drugs in the body.</p>
<p>B - The skills objectives of the course.</p> <p>B1 – know how different drugs act their effect on body system</p> <p>B2 – know the routes of drug administration, there advantages and disadvantage .</p> <p>B3 – know the drugs used in unbalance of autonomic activity .</p> <p>B4 – know the drugs affect CNS , anesthetics and analgesic drugs .</p>
<p>Teaching and learning methods</p>
<p>Traditional lecture, report writing, seminar conduct, practical training in the laboratory, and summer training.</p>
<p>Evaluation methods</p>
<p>Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher’s answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.</p>
<p>C- Emotional and value goals</p> <p>C1- Training on how to deal with drugs and there classification.</p> <p>C2- Training on how to deal with the suitable routes of drug administration.</p> <p>C3- Training on how to deal with drug pharmacokinetics and pharmacodynamics.</p> <p>C4- Training on how to deal with cholinergic and adrenergic drugs</p> <p>C5- Training on how to deal with drugs affect CNS as sedative hypnotic, anticonvulsant , antidepressants stimulant drugs</p> <p>C6- Training on how to deal with anesthetics and analgesic drugs</p>
<p>Teaching and learning methods</p>
<p>Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, and summer training.</p>
<p>Evaluation methods</p>
<p>Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher’s answers) and deductive and deductive questions.</p>
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development).</p>

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Summer training in hospitals .

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	General aspects of Drugs Pharmacology Name and classification ----- Practical : General term in practical pharmacology	Describe the general term of pharmacology name and classification ----- Describe the general practical term of pharmacology	Lecture, discussion, presentation	Test
2	4	Pharmacodynamics Drugs-receptor ----- Practical : Discussion	How drugs act and describe the receptors of drugs ----- Discuss the previous lab	Lecture, discussion, presentation	Test
3	4	Pharmacokinetics ----- Practical : Seminar	How body act to administered drugs ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
4	4	Routes of Administration ----- Practical : Routes of Administration	How drugs administered ----- Advantages and disadvantages of routes of the administration	Lecture, discussion, presentation	Test
5	4	AN S Neurotransmitters receptors ----- Practical : Practical : Discussion	Autonomic mechanism , receptors and drugs acting ----- Discuss the previous lab	Lecture, discussion, presentation	Test
6	4	Cholinergic drugs Direct ,indirect ----- Practical : Seminar	Describe the cholinergic drugs with classification ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
7	4	Anticholinergic drugs ,	Describe the	Lecture,	Test

		Ganglionic blocking drugs, Neuromuscular blocker drugs ----- Practical : Effect of Sympathetic drugs parasympathetic	anticholinergic drugs classification ----- Describe the different effect of autonomic drugs	discussion, presentation	
8	4	Adrenergic drugs ----- Practical : Discussion	Describe the drugs acting on adrenergic system as sympathomimetics ----- Discuss the previous lab	Lecture, discussion, presentation	Test
9	4	Adrenergic antagonist α , β blocker ----- Practical : Seminar	Describe the drugs acting on adrenergic system as antagonist (α , β blocker) ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
10	4	C N S Depressant drugs, Alcohol - Sedative hypnotics Benzodiazepine Barbiturate, ----- Practical Drugs antagonism	Describe the drugs acting acting on the CNS as Sedative hypnotics Benzodiazepine Barbiturate ----- Describe the effect of drugs antagonized by other drugs	Lecture, discussion, presentation	Test
11	4	Anticonvulsant ,Antidepressants ----- Practical : Discussion	Describe drugs acting as anticonvulsant ,antidepressants ----- Discuss the previous lab	Lecture, discussion, presentation	Test
12	4	C N S Stimulant drugs. ----- Practical : Seminar	Describe CNS stimulants ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
13	4	Anlgescic : Narcotin or Opioid - ----- Practical Evaution of analgesics	Describe the narcotic analgesic as opioids ----- Describe the analgesic drugs	Lecture, discussion, presentation	Test
14	4	Anlgescic : -NSAIDs ----- Practical Practical : Discussion	Describe the NSAIDs classification and uses ----- Discuss the previous lab	Lecture, discussion, presentation	Test

15	4	Anesthetics , General ,Local anesthetics ----- Practical : Seminar	Describe the general and local anesthetics ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
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14. Infrastructure	
Required reading:	
Main references (sources)	References: 1 Lippincott Illustrated Reviews 7th Edition ISBN13:978 1496384133 SBN10: 149638413X 2 Clinical Pharmacology International Edition ,12 th Edition. .
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

15. Course development plan
<p>Access to modern scientific literature</p> <ol style="list-style-type: none"> 1- Participation in relevant scientific conferences 2- Hosting specialized professors 3- Academic pairing with corresponding , departments institutes and other universities

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Technologies Department
3. Course title/code	Medicinal Plants and Natural Products PH207
4. Programme (s) to which it contributes	Diploma Pharmacy Technologies
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course - Study of the meaning of drugs and medicinal plants - Diagnosis of medicinal plants - Phytochemistry - Methods of extraction, isolation and diagnosis of active compounds within the plant.	
10. Course outcomes and teaching, learning and evaluation methods	
A- Cognitive objectives A1- Knowledge of plant preparations A2- Study of medicinal plants and methods of extraction A3- The possibility of artificial propagation of plants to increase the proportion of active substances	
B - The skills objectives of the course. B1 - Acquire skill in extraction methods B2 - Acquire skill in isolating active substances B3 - Acquire skill in diagnosing them	
Teaching and learning methods ((Theoretical lectures, periodic reports / periodic tests)	
Evaluation methods Semi-semester and final exams Oral exams and laboratory research Visit the Botanical Garden Use of scientific instruments	
C- Emotional and value goals C1- Presenting research using computers C2- Identification of medicinal plants	

C3- Use of modern laboratory equipment
Teaching and learning methods
((Theoretical lectures, periodic reports / periodic tests)
Evaluation methods
((Periodic exams / direct questions / preparation of special reports))
D - Transferable general and qualifying skills (other skills related to employability and personal development).
D1- Developing the skills of students in the field of public service or the private sector.
D2- Access to scientific developments in the field of specialization .

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Introduction and definition of Medicinal plants and natural products.	Knowledge and application	Lecture, discussion, presentation	Tests
2	4	Collection and preparation of medicinal plants, methods of collection, drying and methods of drying, storage and conditions of storage.	Knowledge and application	Lecture, discussion, presentation	Tests
3	4	Classification of medicinal plants: 1. Chemical classification 2. Biological classification 3. Alpha-beta classification 4. Pharmacological classification 5. Taxonomical classification	Knowledge and application	Lecture, discussion, presentation	Tests
4	4	Evaluation of medicinal plants which includes: 1. Physical evaluation 2. Chemical evaluation 3. Pharmacological evaluation 4. Sensory evaluation 5. Microscopic evaluation 6. Chromatography	Knowledge and application	Lecture, discussion, presentation	Tests
5	4	Carbohydrates and drug containing carbohydrates a. Introduction about the medicinal plants which contain carbohydrates.	Knowledge and application	Lecture, discussion, presentation	Tests
6	4	b. Classification of carbohydrates. c. Synthesis of carbohydrates in plants.	Knowledge and application	Lecture, discussion, presentation	Tests

				on	
7	4	d.Medicinal plants which contain carbohydrates and their medical uses. e.Preparation, purification and isolation of carbohydrates from the plants.	Knowledge and application	Lecture, discussion, presentation	Tests
8	4	f.Mucilage and gums	Knowledge and application	Lecture, discussion, presentation	Tests
9	4	The glycosides and the plant containing glycosides a. Definition of glycosides. b. Extraction, isolation and purification of glycosides.	Knowledge and application	Lecture, discussion, presentation	Tests
10	4	c.Classification of glycosides. d.Examples for drugs belong to each class of glycosides and their medical uses.	Knowledge and application	Lecture, discussion, presentation	Tests
11	4	alkaloids: a. Their definition and properties. b. Classification of alkaloids.	Knowledge and application	Lecture, discussion, presentation	Tests
12	4	Examples for crude drugs belong to alkaloids with their medical uses.	Knowledge and application	Lecture, discussion, presentation	Tests
13	4	Volatile oils: a. Definition of volatile oils.	Knowledge and application	Lecture, discussion, presentation	Tests
14	4	General properties of volatile oils.	Knowledge and application	Lecture, discussion, presentation	Tests
15	4	Classification of volatile oils with examples for drugs containing volatile oils.	Knowledge and application	Lecture, discussion, presentation	Tests

16. Infrastructure	
1 Required textbooks	Pharmacognosy by teyler
2 Main references (sources)	Pharmacognosy by trease and evance
3 Electronic references, websites	Phytochemistry and pharmacognosy

17. Course development plan
<ol style="list-style-type: none"> 1. Participation in relevant scientific conferences. 2. Hosting specialized professors. 3. Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy Techniques Department
3. Course title/code	Basics Of Therapeutic Application PHT208
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	45
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course 1- Teaching and training the student on how to dispense the appropriate medication 2- Teaching and training the student to take the appropriate medication for each disease 3- Teaching and training the student to prepare the patient to take the medication	

- 4- Teaching and training students to develop side effect and precaution
 5- Teaching and training the student on how to use the medication

10. Course outcomes and teaching, learning and evaluation methods

- A1- Identify the risks of side effect
 A2- Identify the nature of the materials used in applied herapeutically examinations,
 A3- Identifying the presence of some interaction

- B - The skills objectives of the course.
 B1 - Training in determining the appropriate drug and medication for each disease
 B2 - Training students on how to deal with therapeutically medication
 B3 - Training the patient in the appropriate medication and there side effect that occur

Teaching and learning methods

Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.

Evaluation methods

Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.

- C- Emotional and value goals
 C1- Training on how to deal with drugs interaction
 C2- Training on how to deal with drug and pharmaceutical preparation
 C3- Training on how to deal with side effects
 C4- Training on how to deal with precautions
 C5- Training on how to deal with disease and there medication

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the

same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	3	Drugs acting on the GIT (Gastrointestinal Tract) System Antacids Anti- Cholinergics	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
2	3	Drugs acting on the GIT (Gastrointestinal Tract) System H2 Antagonist Proton-Pump Inhibitors	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
3	3	Drugs acting on the GIT (Gastrointestinal Tract) System Anti - Diarrheal Drugs Laxative Drugs	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
4	3	Antispasmodics Antiemetic Nausea and Vomiting	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
5	3	(Diuretics) Osmotic Carbonic anhydrase inhibitor Loop	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
6	3	(Diuretics) Part 2 Thiazide Potassium Sparing	Lecture, discussion, presentation of	Theoretic al and practical	test

			therapeutically videos and films		
7	3	Drug act on the Respiratory System (Bronchodilator)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
8	3	Drug act on the Respiratory System (Anti Asthmatic drug))	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
9	3	Antiseptics And Disinfectants	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
10	3	Drug act on the Cardiovascular System (Anti Hypertensive drug)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
11	3	Drug act on the Cardiovascular System (Anti Anginal drug)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
12	3	Drug acting on the Cardiovascular System (Anti-arrhythmic Drugs) (Cardio tonic Drugs)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
13	3	Antibiotics (Penicillin)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
14	3	Antibiotics (Cephalosporin)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
15	3	Anti-bacterial Drugs Sulphonamides + Cotrimoxazole	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test

7-Infrastructure	
Required reading:	Therapeutics
Main references (sources)	1- Applied therapeutic 2- Goodman LS , & Gilman A. The pharmacological basis of therapeutics , 13 th edition , 2015. 3- Drug Therapy ; by Katzung BG and others , 2nd edition, Hall International Inc , 1995 . 4- Basic And clinical pharmacology by Katzung G. Bertram , 10 th edition , Lange Medical Publication , 2007 . 5- Michael J Neal , Medical Pharmacology at Glance . 4 the edition , Blackwell Science Ltd , UK , 2002. 6- Lecture Notes on Clinical Pharmacology , by John Reid and other , Blackwell Science Publications , 1995. 7- BNF81 8- Pharmacotherapy_Principles_and_Practice_6th_Edition_2022
Recommended books and references (scientific journals, reports,...)	Symptoms in the pharmacy Lippincott_Illustrated_Review_Pharmacology injectables drug guide
B - Electronic references, Internet sites...	

8- Course development plan

Access to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working
- 3- Hosting specialized professors

4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Radiology Techniques Department
3. Course title/code	Toxicology /PHT209
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
1- Teaching the student on how to receive the poisoning patient.	
2- Teaching the student the drugs poisoning .	
3- Teaching the student the physical examination to the poisoning patient.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identify the risks of poisoning materials.	
Evaluation methods	
Teaching and learning methods	
Evaluation methods	

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Assessment Method
1	2	Introducing students to the toxicology	Lecture, discussion,	test
2	2	Division of toxicology	Lecture,	test

			discussion,	
3	2	Major factors that influence toxicity	Lecture, discussion,	test
4	2	Units used to measure chemicals in the environment	Lecture, discussion,	Test
5	2	How does the toxicity develop	Lecture, discussion,	test
6	2	Physical examination	Lecture, discussion,	test
7	2	Toxicokinetics	Lecture, discussion,	test
8	2	Aspirin	Lecture, discussion,	test
9	2	Barbiturates	Lecture, discussion,	practical test
10	2	Antidepressants	Lecture, discussion,	practical test
11	2	Anticholinergic agents	Lecture, discussion,	Test
12	2	Carbon dioxide poisoning	Lecture, discussion,	test
13	2	Cyanide poisoning	Lecture, discussion,	test
14	2	Carbon monoxide poisoning	Lecture, discussion,	test
15	2	Nicotine poisoning	Lecture, discussion,	test

5-Infrastructure	
Required reading:	Introduction to Toxicology

6- Course development plan

Access to modern scientific literature

- 7- Participation in relevant scientific conferences
- 8- The teaching and training staff is partially devoted to applying and working in hospitals
- 9- Hosting specialized professors
- 10- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Technologies Department
3. Course title/code	Pharmaceutical Formulation PHT 211
4. Programme (s) to which it contributes	Diploma Pharmacy Technologies
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1. Pharmaceutics is the science of dosage form design.	
2. Pharmaceutics deals with the formulation of a pure drug substance into a dosage form.	
10. Course outcomes and teaching, learning and evaluation methods	
A- Cognitive objectives	
A1- Diagnose or various types of pharmaceutical dosage form based on the qualities and quantity of the compound.	
A2. To know the relationship between the drugs dosage form and the pharmaceutical and medical effectiveness.	
A3- Understanding the compatibility between active ingredient and additives of drugs.	
B - The skills objectives of the course.	
B1 -Understanding the relationship between the active ingredient and additives of drugs.	

B2 - Understanding the dosage form of drugs and route of administration.
Teaching and learning methods
((Theoretical lectures, periodic reports / periodic tests)
Evaluation methods
((Periodic exams / direct questions / preparation of special reports))
C- Emotional and value goals
C1- Studying pharmaceuticals can be a rewarding opportunity to combine your passion with a meaningful job and helps relate the formulation of drugs to their delivery and disposition in the body.
C2- Contribution to Healthcare: The creation of novel medications and pharmaceuticals depends heavily on pharmaceuticals.
C3-Can immediately improve healthcare and possibly save lives by studying pharmaceuticals as it can lead to the discovery of novel medicines for a variety of disorders.
Teaching and learning methods
((Student groups / preparation of special reports))
Evaluation methods
((Periodic exams / direct questions / preparation of special reports))
D - Transferable general and qualifying skills (other skills related to employability and personal development).
D1- Developing the skills of students in the field of public service or the private sector.
D2- Access to scientific developments in the field of specialization .

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Topical aerosol solution	Lecture and discussion	Theoretical and practical	Tests & Discussion
2	4	Cataplasma(Poultice), definition, uses, examples	Lecture and discussion	Theoretical and practical	Tests & Discussion
3	4	Medical injection, definition, uses.	Lecture and discussion	Theoretical and practical	Tests & Discussion
4	4	Medical injection, types, classification with examples.	Lecture and discussion	Theoretical and practical	Tests & Discussion
5	4	Eye drops, definition, uses,	Lecture and	Theoretical	Tests &

		examples.	discussion	al and practical	Discussion
6	4	Nasal drops, definition, uses, examples.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
7	4	Ear drops, definition, uses, examples.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
8	4	Vehicle .	Lecture and discussion	Theoretic al and practical	Tests & Discussion
9	4	Alcohol, definition, types, examples.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
10	4	Collodion, definition, Methods of preparation with examples.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
11	4	Incompatibility, definition, types of incompatibility with examples.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
12	4	The phenomena of incompatibility, general methods for treatment incompatibility.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
13	4	Incompatibility of alkaloidal, substances incompatibility of Sod. Salicylate & Sod. Benzoate with other reactant substances.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
14	4	CO ₂ formation as a result of incompatibility with examples.	Lecture and discussion	Theoretic al and practical	Tests & Discussion
15	4	Calculations	Lecture and discussion	Theoretic al and practical	Tests & Discussion

9-Infrastructure

1 Required textbooks	General Books
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2 Main references (sources)	
3 Electronic references, websites	

10- Course development plan
1.Participation in relevant scientific conferences. 2. Hosting specialized professors. 3. Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy Techniques Department
3. Course title/code	PHT212 Industrial pharmacy
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
1- Teaching and training students on how to manufacture pharmaceuticals.	
2- Teaching and training students on how to work in pharmaceutical factories.	
10. Course outcomes and teaching, learning and evaluation methods	

A1- Identifying the pharmaceutical industries.
A2- Identifying on how to work in pharmaceutical factories.

B - The skills objectives of the course.
B1 - Training on work in pharmaceutical factories
B2 Training on how to work in pharmaceutical factories

Teaching and learning methods

Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.

Evaluation methods

Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.

C- Emotional and value goals
C1- Training on how to work in pharmaceutical factories.
C2- Training on how to deal with medicine in the factory.

Teaching and learning methods

Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.

Evaluation methods

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).
D1- Field visits to gain experience from others.
D2- Access to scientific developments in the field of specialization (educational videos).
D3- Practical training in factories.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Machine	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	Test
2	4	Granulation	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
3	4	Tablets , diluents and other	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	Test
4	4	Capsules	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	Test
5	4	Emulsions..	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
6	4	Semisolid materials	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
7	4	Suspension.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
8	4	Suppositories.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test

9	4	Liquid dosage form.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
10	4	Backaging use in industrial pharmacy.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
11	4	Cosmetics.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
12	4	Antibiotics, methods quality control.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
13	4	Methods of isolation of antibiotics	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
14	4	Methods of production of antibiotics .	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test
15	4	Revision.	Lecture, discussion, presentation of radiological videos and films	Theoretical and practical	practical test

11- Infrastructure	
Required reading:	
Main references (sources)	The theory and practice of industrial 1 pharmacy by Leon - Lachman Lecture notes on industrial pharmacy Dr. Munib M-saket university Aman -

	jorden.
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

12- Course development plan

to modern scientific literature

- 1- Participation in relevant scientific conferences
- 2- The teaching and training staff is partially devoted to applying and working in hospitals
- 3- Hosting specialized professors
- 4- Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Technologies Department
3. Course title/code	Pharmaceutical chemistry PHT213
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course	
1. Pharmaceutical (medicinal) chemistry is concerned with the design (drug design) and	

synthesis of biologically active molecules.

2. To gain new chemical molecules that could enable the discovery of new pharmaceuticals or optimize already known drug structures, thereby to expand the portfolio of chemical drugs.

10. Course outcomes and teaching, learning and evaluation methods

A1-Diagnosis of various types of pharmaceutical compounds based on the qualities chemical Alvezao.

A2. To know the relationship between the chemical composition of the drugs pharmaceutical and medical effectiveness.

A3- Understanding the compatibility and mechanical to receive drugs medical effectiveness.

B - The skills objectives of the course.

B1 -Understanding the relationship between the chemical composition and the effectiveness of the drugs.

B2 - Understanding chemical reactions for prescription drugs with each other.

Teaching and learning methods

((Theoretical lectures, periodic reports / periodic tests)

Evaluation methods

((Periodic exams / direct questions / preparation of special reports))

C- Emotional and value goals

C1- Studying medicinal chemistry can be a rewarding opportunity to combine your passion with a meaningful job if you have a sincere interest in biology, chemistry, and how chemicals interact with the human body.

C2- Contribution to Healthcare: The creation of novel medications and pharmaceuticals depends heavily on medicinal chemistry.

C3-Can immediately improve healthcare and possibly save lives by studying medicinal chemistry as it can lead to the discovery of novel medicines for a variety of disorders.

Teaching and learning methods

((Student groups / preparation of special reports))

Evaluation methods

((Periodic exams / direct questions / preparation of special reports))

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Developing the skills of students in the field of public service or the private sector.

D2- Access to scientific developments in the field of specialization .

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Antibiotics drugs penicillin, cephalosporins, chloramphenicol, tetracycline, macrolides	Lecture and discussion	Theoretical and practical	Tests & Discussion
2	4	Antibiotics drugs penicillin, cephalosporins, chloramphenicol, tetracycline, macrolides	Lecture and discussion	Theoretical and practical	Tests & Discussion
3	4	Drugs affecting C.N.S CNS Depressant , CNS Stimulant	Lecture and discussion	Theoretical and practical	Tests & Discussion
4	4	Drugs affecting C.N.S CNS Depressant , CNS Stimulant	Lecture and discussion	Theoretical and practical	Tests & Discussion
5	4	Autonomic Drugs Cholinergic agents, Anticholinergic agents	Lecture and discussion	Theoretical and practical	Tests & Discussion
6	4	Autonomic Drugs Cholinergic agents, Anticholinergic agents	Lecture and discussion	Theoretical and practical	Tests & Discussion
7	4	Diuretics drugs, water and osmotic agents and heterocyclic compound	Lecture and discussion	Theoretical and practical	Tests & Discussion
8	4	Diuretics drugs water and osmotic agents and heterocyclic compound	Lecture and discussion	Theoretical and practical	Tests & Discussion
9	4	Hypoglycemia, Hyperglycaemia drugs	Lecture and discussion	Theoretical and practical	Tests & Discussion
10	4	Hypoglycemia, Hyperglycaemia drugs	Lecture and discussion	Theoretical and practical	Tests & Discussion
11	4	The vitamin , water soluble vitamin , fat soluble vitamin	Lecture and discussion	Theoretical and practical	Tests & Discussion
12	4	The vitamin , water soluble vitamin , fat soluble vitamin	Lecture and discussion	Theoretical and practical	Tests & Discussion

13	4	The enzymes	Lecture and discussion	Theoretical and practical	Tests & Discussion
14	4	The Hormone sterol, Bile salts, sex hormones, Adrenal cortex hormones	Lecture and discussion	Theoretical and practical	Tests & Discussion
15	4	The Hormone sterol, Bile salts, sex hormones, Adrenal cortex hormones	Lecture and discussion	Theoretical and practical	Tests & Discussion

5-Infrastructure	
1 Required textbooks	General Books
2 Main references (sources)	
3 Electronic references, websites	

6- Course development plan
1. Participation in relevant scientific conferences. 2. Hosting specialized professors. 3. Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

Pharmacology (PHT214)

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Techniques Department
3. Course title/code	Pharmacology (PHT214)
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities

6. Semester/Year	Modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
<p>1- Teaching and training the student to understand systematic pharmacology</p> <p>2- Teaching and training the student to understand drugs affect respiratory, GIT , cardiovascular and renal system</p> <p>3-Teaching and training students to know antibiotic act and there uses</p> <p>4- Teaching and training the student to know hormonal drugs</p> <p>5- Teaching and training the student to know some pharmacokinetics concepts.</p> <p>6- Teaching and training the student to know dose calculation</p> <p>6-.</p>	
10. Course outcomes and teaching, learning and evaluation methods	
<p>A1- Identify the drugs action on different body system .</p> <p>A2- Identify how antibiotic act in the body.</p> <p>A3- Identifying the hormonal drugs administered in the body.</p> <p>A4- Identifying the some dose calculation and pharmacokinetics concepts</p>	
<p>B - The skills objectives of the course.</p> <p>B1 – know how different drugs act on respiratory, GIT , cardiovascular and renal system</p> <p>B2 – know mechanism of action of different antibiotics .</p> <p>B3 – know how hormonal drugs act on the body</p> <p>B4 – know how calculate the dose based on some pharmacokinetics concepts</p>	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher’s answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.	
<p>C- Emotional and value goals</p> <p>C1- Training on how to prescribe drugs for different systematic disease</p> <p>C2- Training on how to prescribe antibiotics.</p> <p>C3- Training on how to prescribe hormonal drugs.</p>	

C4- Training on how to used pharmacokinetics concepts C5- Training on how to calculate the dose of different drugs
Teaching and learning methods
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, and summer training.
Evaluation methods
Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Field visits to gain experience from others. D2- Access to scientific developments in the field of specialization (educational videos). D3- Summer training in hospitals .

11. Course Structure					
Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	Drugs act on Respiratory system, ,Bronchodilators, ,Antihistamine ,Expectorants Anti-tussive ,Cold prepration ----- Practical :Dose-Response Relationship	Describe the drugs affect respiratory system ----- Describe the relation between dose and response	Lecture, discussion, presentation	Test
2	4	Drugs act on GIT , Anti ulcer Antaacid Antidiarrheal , Anti-emetic ,Laxative ----- Practical : Discussion	Describe the drugs affect GIT ----- Discuss the previous lab	Lecture, discussion, presentation	Test
3	4	Diuretics ,classification ,mode of action	Describe the drugs affect Renal system as diuretics--	Lecture, discussion,	Test practical

		----- Practical : Seminar	----- Practical presentation	presentation	
4	4	Cardio Vascular Drugs Cardiac Glycosides , Vasodilators, Antianginal , Antiarrhythmic drugs ----- Practical : pharmacokinetics concepts $t_{1/2}$, bioavailability	Describe the drugs affect the cardiovascular system (part I) ----- Calculation of $t_{1/2}$, bioavailability	Lecture, discussion, presentation	Test
5	4	Antihypertensive drugs , Drugs affect hemostasis , Anticoagulant ----- Practical : Practical : Discussion	Describe the drugs affect the cardiovascular system (part II) ----- Discuss the previous lab	Lecture, discussion, presentation	Test
6	4	Chemotherapy Antibiotic : Mechanism of action ----- Practical : Seminar	Describe general concepts of antibiotics ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
7	4	Antibiotic: Inhibition of cell wall , cell membrane ----- Practical Dose calculation	Describe the antibiotics that act on cell wall ----- Describe the dose calculation of drugs	Lecture, discussion, presentation	Test
8	4	Antibiotic: Inhibition of proteins, nucleic acid synthesis ----- Practical : Discussion	Describe antibiotics that act on proteins , nucleic acid synthesis ----- Discuss the previous lab	Lecture, discussion, presentation	Test
9	4	Antiviral , Antifungal, Antiamebiasis Antiparasitic , Anthelmintic, Antituberculosis and -----Disinfectant Practical : Seminar	Describe the others antimicrobial agents ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
10	4	General principle of Drugs interaction ----- Practical Drugs interaction	Describe the drug –drug interaction ----- Describe practical concepts of drugs interaction	Lecture, discussion, presentation	Test
11	4	Hormonal drugs : Insulin and Antidiabetic agents ----- Practical : Discussion	Describe Insulin and Antidiabetic agents ----- Discuss the previous lab	Lecture, discussion, presentation	Test

12	4	Adrenal steroids ,Thyroid - and antithyroid ----- Practical : Seminar	Describe adrenal Thyroid and antithyroid drugs ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical
13	4	Anterior Pituitary ,Growth - hormonrs ,gonadotropin ,sex hormones,,oxytocin Vasopressin Practical Nicotine poisoning	Describe drugs affect Pituitary ,gonadotropins sex hormones ----- Describe Nicotine poisoning	Lecture, discussion, presentation	Test
14	4	Contraception Practical Practical : Discussion	Describe the contraception ----- Discuss the previous lab	Lecture, discussion, presentation	Test
15	4	Poison and antidotes ----- Practical : Seminar	Describe Poison and antidotes ----- Practical presentation the previous lab	Lecture, discussion, presentation	Test practical

4- Infrastructure	
Required reading:	
Main references (sources)	References: 1 Lippincott Illustrated Reviews 7th Edition ISBN13:978 1496384133 SBN10: 149638413X 2 Clinical Pharmacology International Edition ,12 th Edition.
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

5- Course development plan
Access to modern scientific literature 1- Participation in relevant scientific conferences

- 2- Hosting specialized professors
- 3- Academic pairing with corresponding , departments institutes and other universities

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ Pharmacy Technologies Department
3. Course title/code	Pharmacognacy PH215
4. Programme (s) to which it contributes	Diploma Pharmacy Technologies
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	modules
7. Number of hours tuition (total)	60
8. Date of production/revision of this specification	8 / 1 / 2024
9. Aims of the Course - Study of the meaning of drugs and medicinal plants - Diagnosis of medicinal plants - Phytochemistry - Methods of extraction, isolation and diagnosis of active compounds within the plant.	
10. Course outcomes and teaching, learning and evaluation methods	
A- Cognitive objectives A1- Knowledge of plant preparations A2- Study of medicinal plants and methods of extraction A3- The possibility of artificial propagation of plants to increase the proportion of active substances	
B - The skills objectives of the course. B1 - Acquire skill in extraction methods B2 - Acquire skill in isolating active substances B3 - Acquire skill in diagnosing them	
Teaching and learning methods ((Theoretical lectures, periodic reports / periodic tests)	
Evaluation methods Semi-semester and final exams	

<p>Oral exams and laboratory research Visit the Botanical Garden Use of scientific instruments</p>
<p>C- Emotional and value goals C1- Presenting research using computers C2- Identification of medicinal plants C3- Use of modern laboratory equipment</p>
<p>Teaching and learning methods</p>
<p>((Theoretical lectures, periodic reports / periodic tests)</p>
<p>Evaluation methods</p>
<p>((Periodic exams / direct questions / preparation of special reports))</p>
<p>D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Developing the skills of students in the field of public service or the private sector. D2- Access to scientific developments in the field of specialization .</p>

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	4	<p>Lipids: c. Definition of lipids. d. Types of lipids.</p>	Knowledge and application	Lecture, discussion, presentation	Tests
2	4	<p>c. Comparison between fats, fixed oils and waxes d. Methods of preparation and isolation of lipids</p>	Knowledge and application	Lecture, discussion, presentation	Tests
3	4	<p>e. Example for each type of lipids and their pharmaceutical and medical uses</p>	Knowledge and application	Lecture, discussion, presentation	Tests
4	4	<p>Resins and balsams: a. Definition of resins and balsams.</p>	Knowledge and application	Lecture, discussion, presentation	Tests
5	4	<p>b. Plants containing resins and balsams.</p>	Knowledge and application	Lecture, discussion	Tests

				n, presentati on	
6	4	Tannins: a. Definition of tannins. b. Their properties.	Knowledge and application	Lecture, discussion, presentation	Tests
7	4	c. Classification of tannins.	Knowledge and application	Lecture, discussion, presentation	Tests
8	4	d. Examples for drugs belong to each class of tannins.	Knowledge and application	Lecture, discussion, presentation	Tests
9	4	Chromatography: a. Definition. b. Uses. c. Phases d. Types of chromatography	Knowledge and application	Lecture, discussion, presentation	Tests
10	4	antibiotics: a. Definition of antibiotics. b. Their classification with examples for each class c. Antituberculosis d. Antifungal antibiotics. e. Anthelmintics.	Knowledge and application	Lecture, discussion, presentation	Tests
11	4	Hormonal drugs: a. Definition of glands. b. Definition of hormones. c. Types of hormones	Knowledge and application	Lecture, discussion, presentation	Tests
12	4	d. Extraction of hormones from glands e. Storage of hormones. f. Types of glands and hormones with their medical uses.	Knowledge and application	Lecture, discussion, presentation	Tests
13	4	Vitamins: a. Definition of vitamins. b. Types of vitamins c. Examples for water soluble vitamins with their natural sources.	Knowledge and application	Lecture, discussion, presentation	Tests
14	4	d. The uses of water soluble vitamins. e. Examples for fat soluble vitamins with their natural sources. f. Uses of fat soluble vitamins	Knowledge and application	Lecture, discussion, presentation,	Tests

				presentation	
15	4	The poisonous plants: a. Their types. b. Examples for poisonous plants.	Lecture and discussion	Lecture, discussion, presentation	Tests

18. Infrastructure	
1 Required textbooks	Pharmacognosy by teyler
2 Main references (sources)	Pharmacognosy by trease and evance
3 Electronic references, websites	Phytochemistry and pharmacognosy

19. Course development plan
1. Participation in relevant scientific conferences. 2. Hosting specialized professors. 3. Academic pairing with other universities and corresponding colleges.

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacy Techniques Department
3. Course title/code	Therapeutics Application PHT216
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	45
8. Date of production/revision of this	8 / 1 / 2024

specification	
9. Aims of the Course	
1- Teaching and training the student on how to dispense the appropriate medication 2- Teaching and training the student to take the appropriate medication for each disease 3- Teaching and training the student to prepare the patient to take the medication 4- Teaching and training students to develop side effect and precaution 5- Teaching and training the student on how to use the medication .	
10. Course outcomes and teaching, learning and evaluation methods	
A1- Identify the risks of side effect A2- Identify the nature of the materials used in applied therapeutically examinations, A3- Identifying the presence of some interaction	
B - The skills objectives of the course. B1 - Training in determining the appropriate drug and medication for each disease B2 - Training students on how to deal with therapeutically medication B3 - Training the patient in the appropriate medication and there side effect that occur	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the laboratory, methodological training in the hospital, and summer training.	
Evaluation methods	
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher’s answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.	
C- Emotional and value goals C1- Training on how to deal with drugs interaction C2- Training on how to deal with drug and pharmaceutical preparation C3- Training on how to deal with side effects C4- Training on how to deal with precautions C5- Training on how to deal with disease and there medication	
Teaching and learning methods	
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.	
Evaluation methods	

Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.

D - Transferable general and qualifying skills (other skills related to employability and personal development).

D1- Field visits to gain experience from others.

D2- Access to scientific developments in the field of specialization (educational videos).

D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	3	Drugs acting on the GIT (Gastrointestinal Tract) System Antacids Anti- Cholinergics	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
2	3	Drugs acting on the GIT (Gastrointestinal Tract) System H2 Antagonist Proton-Pump Inhibitors	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
3	3	Drugs acting on the GIT (Gastrointestinal Tract) System Anti - Diarrheal Drugs Laxative Drugs	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	test
4	3	Antispasmodics Antiemetic Nausea and Vomiting	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	Test
5	3	(Diuretics) Osmotic	Lecture, discussion,	Theoretic al and	practical test

		Carbonic anhydrase inhibitor Loop	presentation of therapeutically videos and films	practical	
6	3	(Diuretics) Part 2 Thiazide Potassium Sparing	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
7	3	Drug act on the Respiratory System (Bronchodilator)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
8	3	Drug act on the Respiratory System (Anti Asthmatic drug))	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
9	3	Antiseptics And Disinfectants	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
10	3	Drug act on the Cardiovascular System (Anti Hypertensive drug)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
11	3	Drug act on the Cardiovascular System (Anti Anginal drug)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
12	3	Drug acting on the Cardiovascular System (Anti-arrhythmic Drugs) (Cardio tonic Drugs)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
13	3	Antibiotics (Penicillin)	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test
14	3	Antibiotics (Cephalosporin)	Lecture, discussion, presentation of therapeutically	Theoretic al and practical	practical test

			videos and films		
15	3	Anti-bacterial Drugs Sulphonamides + Cotrimoxazole	Lecture, discussion, presentation of therapeutically videos and films	Theoretic al and practical	practical test

4- Infrastructure	
Required reading:	Therapeutics
Main references (sources)	<ol style="list-style-type: none"> 1- Applied therapeutic 2- Goodman LS , & Gilman A. The pharmacological basis of therapeutics , 13 th edition , 2015. 3- Drug Therapy ; by Katzung BG and others , 2nd edition, Hall International Inc , 1995 . 4- Basic And clinical pharmacology by Katzung G. Bertram , 10 th edition , Lange Medical Publication , 2007 . 5- Michael J Neal , Medical Pharmacology at Glance . 4 the edition , Blackwell Science Ltd , UK , 2002. 6- Lecture Notes on Clinical Pharmacology , by John Reid and other , Blackwell Science Publications , 1995. 7- BNF81 8- Pharmacotherapy_Principles_and_Practice_6th_Edition_2022
Recommended books and references (scientific journals, reports,...)	<p>Symptoms in the pharmacy</p> <p>Lippincott_Illustrated_Review_Pharmacology</p> <p>injectables drug guide</p>
B - Electronic references, Internet sites...	

5- Course development plan	
	Access to modern scientific literature
	6- Participation in relevant scientific conferences
7-	The teaching and training staff is partially devoted to applying and working
	8- Hosting specialized professors
9-	Academic pairing with other universities and corresponding colleges

COURSE SPECIFICATION

1. Teaching Institution	Ministry of Higher Education and Scientific Research / Northern Technical University
2. University/ Department	Mosul Medical Technical Institute/ pharmacyTechniques Department
3. Course title/code	Community Health PHT217
4. Programme (s) to which it contributes	Diploma of Technical Pharmacy
5. Modes of Attendance offered	* Weekly lesson schedule (theoretical and practical) * Scientific discussions, seminars, other activities
6. Semester/Year	Modules
7. Number of hours tuition (total)	30
8. Date of production/revision of this specification	8 / 4 / 2024
9. Aims of the Course	
1- Teaching and training students to disseminate health information	
2-a2 2- Teaching and training students on how to monitor and prevent diseases.	
10. Course outcomes and teaching, learning and evaluation methods	
A1- earn about public health and ways to prevent diseases.	
A2- On how to work in the field of public health.	
B - The skills objectives of the course.	
B1 - Training for work in hospitals and health centres	
B2 - Training on how to work in health inspection and control	
B3- Working in matters of occupational safety and environmental health	
Teaching and learning methods	
Traditional lecture, report writing, seminar conduct, practical training in the	

laboratory, methodological training in the hospital, and summer training.
Evaluation methods
Daily written and oral tests, applied tests, seminars, semester and final exams, obligations to assignments, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are set for the student by the teacher and the student answers the questions, and the teacher also answers the same questions and asks The student is asked to evaluate himself in light of the teacher's answers, reports on scientific developments in the field of specialization, and asks analytical and deductive questions.
C- Emotional and value goals C1- Training on how to work in public health, inspection and health control. C2- Training on how to deal with infectious diseases.
Teaching and learning methods
Traditional lecture, self-learning, feedback, deductive and analytical thinking questions, methodological training in laboratories, applied training in hospitals, and summer training.
Evaluation methods
Simulating the medical condition, written, oral, and applied tests, semester and final exams, daily tests, and commitments to assignments such as making reports in the field of specialization and then discussing the reports, attendance and commitment, feedback (testing the student on the previous subject), self-evaluation (questions are put to the student by the teacher The student answers the questions, and the teacher also answers the same questions. The student is asked to evaluate himself in light of the teacher's answers) and deductive and deductive questions.
D - Transferable general and qualifying skills (other skills related to employability and personal development). D1- Field visits to gain experience from others. D2- Access to scientific developments in the field of specialization (educational videos). D3- Practical training in hospitals.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	ILOs	Teaching Method	Assessment Method
1	2	Family assessment	Lecture, discussion, presentation of videos and films	6	Test
2	2	Health education	Lecture, discussion, presentation of videos and films	6	practical test
3	2	Maternal and child Health	Lecture, discussion, presentation of videos and films	6	Test
4	2	School health	Lecture, discussion, presentation of videos and films	6	Test
5	2	Occupational health program..	Lecture, discussion, presentation of videos and films	6	practical test
6	2	Epidemiology	Lecture, discussion, presentation of videos and films	6	practical test
7	2	Communicable diseases.	Lecture, discussion, presentation of videos and films	6	practical test
8	2	Primary health care.	Lecture, discussion, presentation of videos and films	6	practical test
9	2	Enviroment.	Lecture, discussion, presentation of videos and films	6	practical test
10	2	Healthy water	Lecture, discussion, presentation of videos and films	6	practical test
11	2	Air pollution.	Lecture, discussion, presentation of videos and films	6	practical test

12	2	Waste	Lecture, discussion, presentation of videos and films	6	practical test
13	2	Healthy housing	Lecture, discussion, presentation of videos and films	6	practical test
14	2	Rural health.	Lecture, discussion, presentation of videos and films	6	practical test
15	2	Revision.	Lecture, discussion, presentation of videos and films	6	practical test

7-Infrastructure	
Required reading:	
Main references (sources)	Nursing community primary health care ,2010
Recommended books and references (scientific journals, reports,...)	
B - Electronic references, Internet sites...	

8- Course development plan

- Access to modern scientific literature
- 9- Participation in relevant scientific conferences
 - 10- The teaching and training staff is partially devoted to applying and working in hospitals
 - 11- Hosting specialized professors
 - 12- Academic pairing with other universities and corresponding colleges

