

**Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation
International Accreditation Dept.**



Academic Program and Course Description Guide

2025

University Name: Northern Technical University

College / Institute: Al-Daur Technical Institute

Scientific Department: Pharmacy Techniques Department

Academic or Professional Program: Diploma in Pharmacy Techniques

Final Degree Title: Diploma in Pharmacy Techniques

Academic System: Courses System

Description Preparation Date: 1_9_2025

Description Completion Date: 15_9_2025

Signature: 

Head of Department Name:
Assistant Professor Dr. Khansaa Bassem Fadel

Date: 2025/9/15

Signature: 

Associate Dean for Scientific
Affairs: Prof. Dr. Hanan Shihab Ahmad

Date: 2025/9/15

File Audited By: Quality Assurance and University Performance Division

Director of Quality Assurance and University Performance Division: Asst. Lect. Haider Ali Mohsen

Date: 15_9_2025

Signature 



Dean's Approval

Prof. Dr. Maha Al-Taif Jassim

1. Vision of the Pharmacy Techniques Department

Seeking to provide specialized educational and training programs in the field of pharmacy, aiming to build qualified pharmaceutical cadres capable of elevating the pharmaceutical services provided to the community.

2. Mission of the Pharmacy Techniques Department

"The mission of the Pharmacy Department is to prepare a qualified pharmacy assistant who possesses the necessary skills and knowledge to practice the profession professionally and ethically. The department seeks to provide students with a comprehensive education that combines theoretical knowledge with practical application, enabling them to provide effective and safe healthcare to patients

3. Objectives of the Pharmacy Techniques Department

1. **Qualifying Certified Pharmacy Assistants:** Graduating technical cadres capable of working in pharmacies, hospitals, and pharmaceutical laboratories according to clear and measurable professional standards.
2. **Developing Applied Skills:** Enabling students to accurately prepare and dispense medications and professionally use laboratory equipment through organized field training in hospitals and pharmacies.
3. **Applying Pharmaceutical Quality Assurance Standards:** Training students on quality control procedures and occupational safety standards across all stages of pharmaceutical work according to approved specifications.
4. **Enhancing Community Health Awareness:** Qualifying students to participate in drug awareness campaigns and provide health guidance to patients in a clear scientific manner.
5. **Building Institutional Partnerships:** Establishing cooperation agreements with hospitals and pharmacies to provide an effective field training environment that contributes to increasing the employment rate of graduates in the labor market.

4. Accreditation of the Pharmacy Techniques Department

Not Available

5. Other External Influences

1. **Linking Pharmacy Techniques with the Labor Market or Community:** This is achieved by updating the curricula to align with the needs of the labor market, and involving health and pharmaceutical institutions in program development to ensure graduating students who possess the required practical skills.
2. **Financial, Logistical, or Training Support:** Providing modern equipment and laboratories, in addition to organizing training courses and workshops in cooperation with specialized authorities to raise students' efficiency and develop their skills.
3. **Facilitating Employment and Practical Training:** Establishing partnerships with hospitals and pharmacies to provide field training opportunities for students, which contributes to gaining practical experience and increasing employment opportunities after graduation.
4. **Continuous Guidance for the Pharmacy Techniques Department:** Periodically monitoring and evaluating the department's performance, and providing academic and professional guidance to ensure improving the quality of education and keeping pace with developments in the pharmaceutical field.

6. Pharmacy Techniques Program Structure				
Program Structure	Number of Courses	Credit Units	Percentage	Remarks
Institution (University) Requirements	9	18	15.8%	8 Core, 1 Elective
College Requirements	5	16	14%	5 Core
Department Requirements	23	80	70.2%	21 Core, 2 Elective
Summer Training	–			Two months within the first level (during the summer vacation)
Others				

7. Pharmacy Techniques Course Description				
Year / Level	Course Name	Course code	Credit Hours	
			Practical	Theory
Level One 2025_2026	Human Rights and Democracy	NTU 100	0	1
	English language 1	NTU 101	0	2
	Computer Principles 1	NTU 102	2	1
	Arabic Language	NTU 104	0	2

	Sport	NTU 105	1	1
	Physiology	TID 106	2	2
	Safety in Lab & workshop	TID 108	0	2
	Medical terminology	TID 109	0	2
	Anatomy	TID 110	2	2
	Principles Pharmacy	PHT 112	2	2
	Basics Of Organic Chemistry	PHT 113	2	2
	Analytical Chemistry	PHT 114	2	2
	Pharmaceuticals Calculation	PHT 115	2	2
	Organic Chemistry	PHT 116	2	2
	Microbiology	PHT 120	2	2
	Biochemistry	PHT 117	2	2
	First Aids	PHT 118	0	1
Level Two 2025-2026	English language 2	NTU 200	0	2
	Professional Ethics	NTU 201	0	2
	Computer Principles 2	NTU 202	1	1
	Baath Party crimes	NTU 203	0	2
	Statistics	TID 202	0	2
	Pharmaceutics	PHT 203	2	2
	Industrial Principles	PHT 204	2	2
	Principles of Pharmaceutical chemistry	PHT 205	2	2
	Principles of Drugs	PHT 206	2	2
	Medicinal plants and Nutural Products	PHT 207	2	1
	Basics of Therapeutics Application	PHT 208	2	1
	Toxicology	PHT 209	0	2

	Pharmaceutical Formulation	PHT 211	2	2
	Industrial Pharmacy	PHT 212	2	2
	Pharmaceutical chemistry	PHT 213	2	2
	Pharmacology	PHT 214	2	2
	Proposal	PHT 210	2	0
	Therapeutics Application	PHT 215	2	1
	Pharmacognacy	PHT 216	2	1
	Community Health	PHT 217	0	1

8. Expected Learning Outcomes of the Pharmacy Techniques Department

A- Knowledge

A.1. Acquisition of Basic Scientific Knowledge in Pharmacology: Understanding drug composition, pharmacological effects, types, classifications, clinical uses, and dosage calculations.

A.2. Knowledge of the Principles of Pharmaceutical and Analytical Chemistry: Comprehending the basic chemical principles associated with drug preparation, analysis, and quality control in the laboratory.

A.3. Knowledge of Pharmaceutical Safety and Quality Principles: Familiarity with quality control procedures and occupational safety standards in pharmaceutical work environments according to approved specifications.

A.4. Knowledge of Professional, Ethical, and Societal Issues: Understanding the professional and ethical responsibilities of a pharmacist assistant, and the impact of pharmaceutical services in promoting community health.

B- Skills

B.1. Preparation and Dispensing Skills: The ability to prepare and dispense medications accurately according to prescriptions, while applying occupational safety standards and utilizing pharmaceutical laboratory equipment.

B.2. Analytical and Quality Skills: The ability to conduct analytical tests for drug quality control and document the results in a precise, scientific manner.

B.3. Communication and Counseling Skills: The ability to read prescriptions and provide clear, professional medication guidance to patients and healthcare teams.

B.4. Fieldwork and Collaboration Skills: The ability to work within multidisciplinary teams across pharmacy, hospital, and laboratory environments while seamlessly integrating into the healthcare system

C- Values and Affective Objectives

C.1. Commitment to Professional Ethics: Adhering to the principles of integrity, honesty, and responsibility when dealing with medications and patients, and maintaining the confidentiality of health information according to approved professional standards.

C.2. Engagement in Continuous Professional Development: Recognizing the necessity of keeping pace with scientific updates in the field of pharmacy and engaging in lifelong learning and continuous training programs.

C.3. Awareness of Societal Health Issues: Understanding the impact of pharmaceutical services on improving quality of life and actively participating in health awareness campaigns and community service.

C.4. Governance and Institutional Transparency: Adhering to applicable health regulations and legislation, and contributing to elevating the standard of pharmaceutical services within healthcare institutions.

9. Teaching and Learning Strategies

- 1. Theoretical Learning (Lectures)** Presenting basic concepts and explaining theories using modern teaching methods.
- 2. Practical Learning (Laboratories)** Conducting practical experiments and applying knowledge within the laboratory.
- 3. Problem-Based Learning (PBL)** Presenting real-world cases to develop thinking and analytical skills.
- 4. Collaborative Learning** Working in groups to enhance team spirit and knowledge exchange.
- 5. Field Training** Applying what has been learned in a real work environment (pharmacies, hospitals).
- 6. E-Learning** Utilizing digital platforms and technological tools in education.
- 7. Self-Learning** Encouraging students to conduct research and rely on themselves to acquire knowledge.

10. Assessment Methods

- 1. Theoretical Exams** Measuring understanding and knowledge through written examinations.
- 2. Practical Exams** Evaluating hands-on performance within the laboratory or during practical application.
- 3. Laboratory Reports** Analyzing experiment results and writing them in a scientific format.
- 4. Continuous Assessment** Monitoring student performance through assignments and quizzes.
- 5. Projects and Research** Evaluating the student's capability in research and practical application.

6. Field Training Assessing student performance in a real-world work environment.

7. Classroom Participation Measuring student interaction and contribution during lectures.

11. Faculty Members

Academic Rank	Specialization (General)	Specialization (Specific)	Special Requirements / Skills (If any)	Number of Faculty Members: Permanent Staff	Number of Faculty Members : Lecturer
Lecturer	Ph.D. in Biological Sciences	Physiology		Permanent	
Lecturer	Ph.D. in Chemical Sciences	Biochemistry		Permanent	
Assistant Lecturer	M.Sc. in Applied Sciences	Pathological Analytics		Permanent	
Assistant Lecturer	M.Sc. in Chemical Sciences	Biochemistry		Permanent	
Assistant Lecturer	M.Sc. in Chemical Sciences	Analytical Chemistry		Permanent	
Assistant Lecturer	Master of Pharmacy (M.Pharm)	Clinical Chemistry		Permanent	
Assistant Lecturer	M.Sc. in Biological Sciences	Biology		Permanent	

Assistant Lecturer	Master in Administration and Economics	Business Administration		Permanent	
Assistant Lecturer	M.Sc. in Chemical Sciences	Analytical Chemistry		Permanent	
Assistant Lecturer	Master of Pharmacy (M.Pharm)	Pharmacology and Toxicology			Lecturer

Professional Development

Orientation of New Faculty Members

1. Familiarizing them with the policies and regulations of the educational institution.
2. Training them in modern teaching methods and classroom management.
3. Guiding them in the preparation of curricula and study plans.
4. Providing continuous support through academic supervision and mentoring.

Professional Development for Faculty Members

1. Organizing specialized and educational courses and workshops.
2. Encouraging scientific research and publishing in reputable journals.
3. Supporting participation in scientific conferences and seminars.
4. Developing skills in the use of modern technologies in education.

12. Admission Criteria

Scientific Branch (or Scientific Stream)

. Key Information Sources for the Department of Pharmacy Techniques

1. **Scientific Books and References** Essential sources for understanding pharmacology and pharmaceutical chemistry.
2. **Libraries (Print and Electronic)** Providing up-to-date books, research papers, and scientific journals.

- 3. Scientific Websites** Such as medical databases that provide current and updated information on medications.
- 4. Academic Curricula** Including the courses and study plans adopted by the department for education.
- 5. Practical Training** Conducted in hospitals and pharmacies to apply knowledge in real-world settings.
- 6. Training Courses and Workshops** To develop skills and keep pace with advancements in the pharmaceutical field.

14. Pharmacy Techniques Development Plan

- 1. Curriculum Review Updating** the curriculum periodically to keep pace with scientific advancements and labor market needs.
- 2. Practical Training Enhancing** the practical aspect through training in laboratories and healthcare institutions.
- 3. Integrating Modern Technology** Utilizing modern technologies and educational software in the teaching process.
- 4. Scientific Research Encouraging** scientific research and participating in the publication of studies.
- 5. Training and Continuous Education** Providing courses and workshops to continuously develop the skills of both students and staff.
- 6. Infrastructure Development** Improving laboratories, equipment, and classrooms to support an advanced learning environment.

Pharmacy Techniques Skills Mapping																
Required Learning Outcomes for the Department of Pharmacy Techniques																
Values				Skills				Knowledge				Core or Elective	Course Name	Cours e Code	Year / Level	
C.4	C.3	C.2	C.1	B.4	B.3	B.2	B.1	A.4	A.3	A.2	A.1					
Th		Th	B								Th	Core	Human Rights and Democracy	NTU 100	First Level	
Th	B	Th								Th	B	Core	English language 1	NTU 101		
Th	P			Th					B	Th		Core	Computer Principles 1	NTU 102		
Th	B	Th								Th	B	Core	Arabic Language	NTU 104		
R	Th		P			B		N				Elective	Sport	NTU 105		
Th	B	Th			Th		P			B	Th	Core	Physiology	TID 106		
B		Th	Th			Th			Th		Th	Core	Safety in Lab & workshop	TID 108		
Th	Th	B			Th					Th	B	Core	Medical terminology	TID 109		
	B	Th			Th		P			B	Th	Core	Anatomy	TID 110		
Th	B	Th			Th		P	Th		B	Th	Core	Principles Pharmacy	PHT 112		
Th	Th	B				Th	P			B	Th	Core	Basics Of Organic Chemistry	PHT 113		
Th	Th	B				Th	P			B	Th	Core	Analytical Chemistry	PHT 114		

Th	Th	B				Th	P	Th		B	Th	Core	Pharmaceuticals Calculation	PHT 115	
Th	Th	B				Th	P			B	Th	Core	Organic Chemistry	PHT 116	
Th	Th	B				Th	P			B	Th	Core	Microbiology	PHT 120	
Th	Th	B				Th	P			B	Th	Core	Biochemistry	PHT 117	
Th	B	Th	Th					Th			Th	Core	First Aids	PHT 118	
Th	B	Th								Th	B	Core	English language 2	NTU 200	Second Level
B	Th	Th	B					Th				Core	Professional Ethics	NTU 201	
Th	P			Th					B	Th		Core	Computer Principles 2	NTU 202	
B	Th	Th	B					Th				Core	Baath Party crimes	NTU 203	
Th	Th	B				Th			B	Th		Core	Statistics	TID 202	
Th	Th	B			B	Th	P			B	Th	Core	Pharmaceutics	PHT 203	
Th	Th	B			B	Th	P			B	Th	Core	Industrial Principles	PHT 204	
Th	Th	B			B	Th	P			B	Th	Core	Principles of Pharmaceutical chemistry	PHT 205	
Th	Th	B			B	Th	P	Th		B	Th	Core	Principles of Drugs	PHT 206	
Th	Th	B			B		P			B	Th	Core	Medicinal plants and Natural Products	PHT 207	
Th	Th	B			B	Th	P			B	Th	Core	Basics of Therapeutics Application	PHT 208	

Th	Th	B						Th		B	Th	Core	Toxicology	PHT 209	
Th	Th	B			B	Th	P			B	Th	Core	Pharmaceutical Formulation	PHT 211	
Th	Th	B			B	Th	P			B	Th	Core	Industrial Pharmacy	PHT 212	
Th	Th	B			B	Th	P			B	Th	Core	Pharmaceutical chemistry	PHT 213	
Th	Th	B			B	Th	P	Th		B	Th	Core	Pharmacology	PHT 214	
Th	Th					Th	P			Th		Core	Proposal	PHT 210	
Th	Th	B			B	Th	P			B	Th	Core	Therapeutics Application	PHT 215	
Th	Th	B			B		P			B	Th	Core	Pharmacognosy	PHT 216	
Th	B	Th	Th					Th				Core	Community Health	PHT 217	

Key to Symbols Used in the Skills Map:

- **Th: Theoretical**
- **B: Book**
- **P: Practical**
- **R: Report**
- **S: Seminar**
- **Pr: Project**

Description of Level 1&2 courses

1. Course Name:
Principles Pharmacy
2. Course code:
PHT 112
3. Semester/Year:
First semester / 2025–2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
Name: Sadeem Zaki Saleh Qaddouri e-mail sadeem.zeki@ntu.edu.iq :
8. Course Objectives:
identification on Concepts Basic For knowledge Pharmacy Its importance in Field Healthy. identification on shapes preparations Pharmacist and ways Using it. to understand Roads different to give pharmaceutical and factors Influential in Its effectiveness. identification on Principles Basic For the movements pharmaceutical dynamics pharmaceutical. development capacity student on link Information Theory With applications Pharmacist
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week

Reports, assignments, written and oral exams, and investigation sy	Whiteboard , PowerPoint slides,	Introduction to Pharmacy Introduction to the science of pharmacy and its importance	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	History of Pharmacy, the evolution of the pharmacy profession throughout the ages	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Shapes Pharmacist Doses solid And the liquid And similar solid He distinguishes between Shapes Pharmacist different And its uses.	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Ways giving drug Roads oral and injection And the position and others He specifies The method The occasion to give drug According to the condition.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	absorption drug Factors Influential in absorption Explains How to absorption drug and factors Influential In it.	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory	distribution drug transmission drug inside body It is clear Mechanism distribution drug in Members body	Knowledge and Application	4	Sixth

	experiment s				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Also drug metabolism pharmaceutical He explains role liver in metabolism pharmaceutical.	Knowledge and Application	4	Sevent h
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Directing drug Presentation drug from body It shows Ways Getting rid of from drug and factors Influential In it	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	The movements pharmaceutical Principles Basic Explains principles The movements pharmaceutical In picture Simplified.	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Dynamics pharmaceutical impact pharmaceutical in body It is clear relationship between drug and receptors pharmaceutical.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Drug interactions; drug- food interactions	Knowledge and Application	4	elevent h
Reports, assignments, written, oral, and written exams	Whiteboard ,	Safety pharmaceutical	Knowledge and Application	4	twelfth

written, oral, and written exams	PowerPoint slides, conducting laboratory experiments	Antiquities Side poisoning pharmaceutical He specifies Antiquities Side And how Dealing With her.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Recipe Medical ingredients Recipe And the method Reading it He reads Recipe Medical In picture Correct.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ethics Profession Responsibilities chemist He commits In principles Ethics to practice Profession.	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	review Comprehensive review and calendar connects all Concepts The course He is preparing For the calendar Final.	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.

- Midterm exam: 40 marks
- Final exam: 60 marks

12. Learning and teaching resources	
Clinical Pharmacy and Therapeutics. By Roger Walker, Cate Whittlesea. 5th Edition. Handbook of Applied	Required textbooks (curriculum books, if available)
	Main references (sources)
	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
ChemistryAnalytical
2. Course code:
PHT 114
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
Name: Muhannad Habib Ahmed Abbas Email address: Mohaned.ha@ntu.edu.iq
8. Course Objectives:
To understand the basic principles of analytical chemistry and its importance in pharmaceutical sciences. Distinguishing between qualitative and quantitative analysis methods and their different uses. Developing the skill of preparing standard solutions and performing calibration operations accurately. To equip students with the ability to conduct laboratory analyses and interpret their results. Linking the theoretical aspect with practical applications in pharmaceutical analysis
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Introduction to Analytical Chemistry Introduction to Analytical Chemistry and its Importance The concept of analytical chemistry is defined, and its importance in the pharmaceutical field is explained.	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	gravimetric analysis Principles of gravimetric analysis and the factors affecting it It explains the principles of gravimetric analysis and applies its basic steps.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Applications of gravimetric analysis Sedimentation agents and organic and inorganic precipitating agents It distinguishes between precipitating agents and specifies their use in the analysis.	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting	standard solutions Preparation and standardization of standard solutions	Knowledge and Application	4	Fourth

	practical experiments	He applies the steps for preparing and standardizing standard solutions precisely.			
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Volumetric analysis Introduction to volumetric titrations and estimation of acetic acid It applies the principles of volumetric analysis and calculates the concentration of samples.	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Calibration calculations Volumetric calculations and acid-base equilibrium It solves titration problems and explains the equilibrium of acids and bases.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Equalization adjustments Equalization applications He performs tie-breaking calculations and analyzes their results.	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Redox titrations Principles of Redox Titration It explains the mechanism of oxidation-reduction reactions in the analysis.	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	sedimentation titrations Precipitation and complexation titrations It applies precipitation titration and complexation methods accurately.	Knowledge and Application	4	Ninth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting experiments	Practical analysis Estimation of copper sulfate Copper sulfate analysis is performed and laboratory results are evaluated.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Pharmaceutical Chemistry The relationship between chemical composition and effectiveness It explains the relationship between chemical composition and pharmacological efficacy.	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Isostrea concept Isosterism and its applications The concept of isostearia and its importance in the design of pharmaceutical compounds is explained.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Drug receptors Drug interaction with receptors It explains the mechanism of drug binding to receptors and its effect on drug response.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Drug metabolism Drug biotransformation pathways It explains the stages of drug metabolism and the factors that influence it.	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral,	Whiteboard, PowerPoint slides,	Comprehensive review Review and evaluation	Knowledge and Application	4	fifteenth

and written exams	conducting practical experiments	It connects the concepts of the course and applies them to solving analytical problems.			
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11. Course Evaluation	
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.	
- Midterm exam: 40 marks - Final exam: 60 marks	

12. Learning and teaching resources	
1) Fundamentals of Analytical Chemistry - by Mohamed Magdy	Required textbooks (curriculum books, if available)
(2) Fundamentals of Analytical Chemistry – Skogskooge	
Fundamentals of Analytical Chemistry (Theoretical)	Main references (sources)
	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
Democracy and human rights
2. Course code:
NTU100
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours of theory / Number of units: 2
7. Name of the course coordinator
Name: Inam Ghani Ali Muhammad anaam.g@ntu.edu.iq Email address:
8. Course Objectives:
Understanding the freedoms and rights of the individual and society, and the role of each individual in it in terms of rights and duties, in addition to the various state policies.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	The concept of the state and government / the legislative body / the principle of separation of powers	Knowledge	1	the first

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	The executive body / the judicial body / the House of Representatives, in their discussions and decisions, by rulings.	Knowledge	1	the second
Reports, assignments, written, oral, and written exams	whiteboard, PowerPoint slides, a	The concept of freedom / First: Basic or individual freedom: 1- Freedom, security, and a sense of reassurance 2- Freedom of movement (travel) 3- Freedom of privacy and respect for the sanctity of the home and private life 4- Freedom of confidentiality of personal correspondence	Knowledge	1	the third
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Intellectual and cultural freedom: 1- Freedom of education 2- Freedom of assembly 3- Freedom of worship 4- Freedom of opinion and expression 5- Political freedom	Knowledge	1	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Nomination for elections: 1- The right to vote 2- Periodic elections 3- The right to criticize the government	Knowledge	1	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	1- Freedom to form and join associations. 2- Freedom to form and join trade unions.	Knowledge	1	Sixth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Midterm exam	Knowledge	1	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Economic and social freedom: 1- Freedom of work. 2- Freedom of ownership. 3- Freedom of trade and industry.	Knowledge	1	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Freedom of social security and healthcare / Democracy	Knowledge	1	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Democracy in Iraq	Knowledge	1	tenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Election of the Iraqi Transitional National Assembly	Knowledge	1	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Goals of democracy	Knowledge	1	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Forms of Democracy / Indirect Democracy / Popular Proposal / Popular Referendum	Knowledge	1	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	People's participation in legislative work / popular proposal / popular referendum	Knowledge	1	fourteenth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Types of referendums / Disadvantages of public referendums / Popular solutions	Knowledge	1	fifteenth
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11. Course Evaluation
The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.
- Midterm exam: 30 marks - Final exam: 70 marks

12. Learning and teaching resources	
Public Freedoms and Democracy / Lectures at Al-Mustansiriya University / University of Babylon	Required textbooks (curriculum books, if available)
.2015 Democracy and Human Rights – Ahmed Elsayed Atta Human rights and democracy in the Arab world–Hatem El-Meligy 2010.	Main references (sources)
Human rights in Islam and international humanitarian law–Mohammed Al-Shaiba, 2007.	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
Computer Principles 1
2. Course code:
NTU 102
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)

15 hours practical + 15 hours theoretical / Number of units3
7. Name of the course coordinator
Name: Noor Thaer Ahmed Abdul nour.thaer.dti@ntu.edu.iq -mail:
8. Course Objectives:
The student should be able to handle a computer, be familiar with its use, understand how to use its software, and possess computer skills and internet fundamentals in their field of specialization.. This course aims to study Windows programs, Microsoft Word, and train the student to use its basics and tools that will serve the student in the coming years in all academic and practical fields.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	An introduction to computers: their generations—Its components: physicalHardware and Software—(System software and application software).	Knowledge and Application	3	the first

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Operating systemMS-DOS: The Concept of an Operating System–System signal–discs–Evidence, its levels, and files–Internal operating system commandsInternal Commands–Foreign MinistryExternal Commands (Most commonly used commands).	Knowledge and Application	3	the second
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Internal operating system commands: Internal commands: Dir–Del –Time–Date–Cls–RD–CD–MD–Echo–Ren–Copy–Vol–Ver–Path	Knowledge and Application	3	the third
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Operating systemWindows: The concept of the Windows system–Its advantages–Its basic requirements–System operation–Desktop Home Screen ComponentsDesktop–The concept of the iconIcon–How to handle mouse activities–Importance and components of the taskbarTask Bar–Taking advantage ofStart to access the programs–The concept of loaded tasks–Exit the system and turn off the computer.Shut down.	Knowledge and Application	3	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Understanding the window concept for any program and identifying its main components–Dealing with Desktop icons such as (My Computer)–My Documents–Recycle Bin).	Knowledge and Application	3	Fifth
Reports, assignments, written,	Whiteboard, PowerPoint	Identifying the componentsMyComputer in terms of disks–folders and files–How to format floppy disks–Copying folders and	Knowledge and Application	3	Sixth

oral, and written exams	slides, conducting practical experiments	files–Utilize cut and paste functionality and understand the properties of disks, folders, and files.–Dealing with the Recycle Bin and how to delete and recover files using the features it offers.			
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Utilizing control panel programsControl Panel features include icons like Mouse and Display, and instructions on how to change the desktop background, control the screen saver, and modify the appearance and colors of window menus.–icon– Add/Remove program in Add/Remove program.	Knowledge and Application	3	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Taking advantage of the optionRun is used to execute programs directly and also to switch to the MS DOS operating system signal.–And to comply with his orders.	Knowledge and Application	3	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Using entertainment programs such asWindow media player for playing movies.	Knowledge and Application	3	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical	Take advantage of additional programsAccessories such as a calculator.	Knowledge and Application	3	tenth

	experim ents				
Reports, assignm ents, written, oral, and written exams	Whitebo ard, PowerP oint slides, conducti ng practical experim ents	Working with the drawing programPaint allows you to create, save, and retrieve drawings using the commands it provides.	Knowle dge and Applica tion	3	eleven th
Reports, assignm ents, written, oral, and written exams	Whitebo ard, PowerP oint slides, conducti ng practical experim ents	Working with the notes windowNotepad and WordPad are used for writing, saving, retrieving, printing, changing print style, and formatting text.	Knowle dge and Applica tion	3	twelfth
Reports, assignm ents, written, oral, and written exams	Whitebo ard, PowerP oint slides, conducti ng practical experim ents	Learn how to get helpHelp and its various methods.	Knowle dge and Applica tion	3	thirtee nth
Reports, assignm ents, written, oral, and written exams	Whitebo ard, PowerP oint slides, conducti ng practical experim ents	The concept of a computer virus Computer Viruses: How to Get Infected–Its types, treatment, and handling through anti- drug programs AntiViruses are available within the Windows operating system environment.	Knowle dge and Applica tion	3	fourtee nth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Dealing with the Recycle Bin and how to delete and recover files through what the Recycle Bin provides in this regard.	Knowledge and Application	3	fifteenth
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11. Course Evaluation

The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks
- Final exam: 60 marks

12. Learning and teaching resources

Structure and Interpretation of Computer Programs- Harold Abelson, Gerald Jay Sussman, Julie Sussman - 1985 Introduction to the Theory of Computation - Michael Sipser – 1996	Required textbooks (curriculum books, if available)
Computer Organization and Design: The Hardware/Software Interface - David A. Patterson, John L. Hennessy – 1994	Main references (sources)
Operating System Concepts - Abraham Silberschatz, Peter B. Galvin, Greg Gagne - 1983	Recommended books and references (scientific journals and reports...)
https://www.microsoft.com/software-download/windows11	Electronic references and websites

1. Course Name:
Physiology
2. Course code:
TID 106
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
Name: Niran Thaer Kulaib Mutlaq Neran.tk@ntu.edu.iq Email address:
8. Course Objectives:
Understanding the functional structure of the human body's systems. Understanding the normal functioning of different organs and systems. Explaining the relationship between the functions of the body's organs and the maintenance of internal balance. Developing the student's ability to link physiological information with pharmaceutical applications. To provide the student with a scientific basis for understanding the effect of drugs on the functions of the body's organs.
9. Teaching and learning strategy:
- Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - Practical field training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - The strategy of switching between ideas - The strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral,	Whiteboard, PowerPoint slides,	Introduction to Physiology	Knowledge and Application	4	the first

and written exams	conducting practical experiments	The concept of physiology and homeostasis Physiology defines and explains the importance of homeostasis in the human body.			
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	cell Cell functions and transport of materials across the membrane It explains the structure of the cell and the mechanisms of material transport across the cell membrane.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	nervous system Regulation of the nervous system and nerve cells It explains the structure of the nervous system and the mechanism of nerve impulse transmission.	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	musculature Types of muscles and their contraction mechanism It distinguishes between muscle types and explains the mechanism of muscle contraction.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	blood Blood components and their functions It identifies the components of blood and explains the function of each component.	Knowledge and Application	4	Fifth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	cardiovascular system Heart and circulatory system It explains how the heart works and the course of the circulatory system.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	blood pressure Regulating blood pressure and the factors that affect it It explains the mechanisms of blood pressure regulation and the effect of various factors on it.	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	respiratory system The mechanism of respiration and gas exchange It explains the stages of the respiration process and the mechanism of gas exchange.	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Digestive system Functions of the digestive system organs It explains the processes of digestion and absorption and the functions of the organs of the digestive system.	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	urinary system Kidney functions and urine formation It explains the mechanism of urine formation and the role of the kidney in maintaining homeostasis.	Knowledge and Application	4	tenth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	endocrine system Hormones and how they work It explains the functions of the endocrine glands and the effect of hormones on the body.	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Reproductive system Functions of the reproductive system It explains the physiological functions of the human reproductive system.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Regulating body temperature Temperature regulation It explains the mechanisms for maintaining normal body temperature.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Integration between body systems Coordination between different agencies It links the functions of different body systems to maintain internal balance.	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Comprehensive review Review and evaluation It applies physiological concepts in explaining the normal functions of the body's systems.	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.

- Midterm exam: 40 marks
- Final exam: 60 marks

12. Learning and teaching resources	
Dr. Zafer Al-Yassin–Clinical physiology–Ministry of Health 1983	Required textbooks (curriculum books, if available)
Gyton–Textbook –Oxford publication, London. Gh Green basic clinical physiology oxford publication 1976	Main references (sources)
Barrett KE, Barman SM, Boitano S, Brooks HL. Gaming's Review of Medicine 23rd ed. McGraw Hill, physiology Boston, 2010. Drake RL, Vogl W, Mitchell AWM. Gray's Anatomy for Students. Elsevier, Philadelphia, 2005.	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
TerminologyMedical
2. Course code:
TID 109
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours of theory / Number of units: 2
7. Name of the course coordinator
the name:Mohammed Hassan Mohammed Obeid mohammed.hm@ntu.edu.iq e-mail:
8. Course Objectives:
Understanding the foundations of medical terminology and its linguistic origins. Understanding the meanings of prefixes, suffixes, and roots used in medical terminology. Developing the student's ability to read, write, and pronounce medical terms correctly. Linking medical terms to human body systems and common diseases. Preparing the student to deal with the terminology used in the medical and pharmaceutical fields.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Introduction to Medical Terminology The concept of medical terminology and its importance It defines medical terms and explains their importance in the health field.	Knowledge	2	the first
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Medical Terminology Structure Roots, prefixes, and suffixes It identifies the components of the medical term and defines the function of each part.	Knowledge	2	the second
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Anatomical trend terminology Anatomical orientations and positions He uses anatomical terminology correctly.	Knowledge	2	the third
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Skeletal system terminology Bone and joint terminology It explains the terminology related to the skeletal system.	Knowledge	2	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Muscular system terminology Names of muscles and movements It explains the terms related to the muscular system.	Knowledge	2	Fifth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Cardiovascular System Terminology Cardiovascular It explains the medical terms related to the heart and circulatory system.	Knowledge	2	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Respiratory System Terminology Respiratory organs and common diseases He uses the terminology specific to the respiratory system accurately.	Knowledge	2	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Gastrointestinal System Terminology Digestive system organs It distinguishes terms related to the digestive system and its functions.	Knowledge	2	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Urinary system terminology Kidney and urinary tract It explains the medical terminology specific to the urinary system.	Knowledge	2	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Nervous system terminology brain and nerves It defines the terms specific to the nervous system and their uses.	Knowledge	2	tenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Endocrine terminology Hormones and glands It explains terms related to endocrine glands and hormones.	Knowledge	2	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting	Reproductive system terminology The male and female reproductive systems	Knowledge	2	twelfth

and written exams	practical experiments	He uses the terminology related to the reproductive system correctly.			
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Medical abbreviations Common abbreviations and symbols It explains the medical abbreviations used in the healthcare field.	Knowledge	2	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Medical applications Reading and writing medical terminology He applies medical terminology in practical cases and applications.	Knowledge	2	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Comprehensive review Review and evaluation He uses medical terminology correctly in academic and professional situations.	Knowledge	2	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 30 marks

- Final exam: 70 marks

12. Learning and teaching resources

Edward C.C., (Ed.); A Short course in Medical Terminology; Latest edition; Lipincott Williams and Wilkins.	Required textbooks (curriculum books, if available)
The Language of Medicine -11th Edition by Davi Ellen. ISBN:9780323370813	Main references (sources)
•Barbara A. Gyls, Regina M. Masters. Medical terminology simplified: a programmed learning approach by body systems; Latest edition.	Recommended books and references (scientific journals and reports...)

•Barbara Janson Cohen, Ann DePetris. Medical terminology: an illustrated guide; Latest edition •Pharmacytimes (journal)	
•Electronic Library of the Ministry of Higher Education	Electronic references and websites

1. Course Name:
Sports
2. Course code:
NTU105
3. Semester/Year:
Chapter Two / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
15 hours of theory + 15 hours of practical work / Number of units: 2
7. Name of the course coordinator
the name:Ali Yahya Ahmed ali.yahya@ntu.edu.iq Email:
8. Course Objectives:
1- Delivering mathematical information, knowledge, and skills to students at different educational levels 2- Innovation, careful observation, planning, criticism and comparison in physical education lessons and activities at school. 3- Creating a safe and healthy environment for learners to ensure effective learning 4 - Applying various assessment methods to monitor and develop the school sports program and ensure that its objectives are achieved. 5- Active and positive interaction with the community environment surrounding the work. 6 - Understanding the role of physical education, motor activities and sports in establishing and consolidating social traditions and customs.
9. Teaching and learning strategy:
- The strategy for explaining course materials by the academic staff - Knowledge strategy through homework assignments for school vocabulary Discussion strategy - Self-learning strategy - E-learning strategy Study strategy - Idea generation strategy - Strategy of providing examples and visiting the library and websites

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Sports: Definition, Importance, and Types	Knowledge and Application	2	the first
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	The mechanism of human body movement	Knowledge and Application	2	the second
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Common sports injuries	Knowledge and Application	2	the third
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Basic skills of basketball	Knowledge and Application	2	Fourth
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	International rules of basketball	Knowledge and Application	2	Fifth
Reports, assignments, written and	whiteboard, PowerPoint slides	Basic skills of table tennis and its international rules	Knowledge and Application	2	Sixth

oral mid-term and final written exams					
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Basic skills of volleyball and its international rules	Knowledge and Application	2	Seventh
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	swimming	Knowledge and Application	2	Eighth
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Basic skills of tennis and its international rules	Knowledge and Application	2	Ninth
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Basic skills of handball	Knowledge and Application	2	tenth
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	International rules of handball	Knowledge and Application	2	eleventh
Reports, assignments, written and oral mid-term and	whiteboard, PowerPoint slides	Track and field games (types, international rules of the game)	Knowledge and Application	2	twelfth

final written exams					
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Basic football skills	Knowledge and Application	2	thirteenth
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Sports Competitions and Events Management	Knowledge and Application	2	fourteenth
Reports, assignments, written and oral mid-term and final written exams	whiteboard, PowerPoint slides	Sports laws and regulations	Knowledge and Application	2	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral and written exams, reports, etc.

- The midterm exam is worth 40 marks.
- The final exam is 60 marks.

12. Learning and teaching resources

Sports fundamentals. Techniques, tactics, and training. Michael Brendle and John Sobieski 2017. Sports. Mahmoud Abu Naim 2022.	Required textbooks (curriculum books, if available)
Principles of Sports Science and Physical Fitness. Brennan Scott 2018.	Main references (sources)
Principles of Statistical Analysis in Sports. Dr. Dawood Al-Mawla, 2019.	Recommended books and references (scientific journals and reports...)
Noor Library for downloading free books	Electronic references and websites

1. Course Name:
Microbiology
2. Course code:
PHT 120
3. Semester/Year:
First semester / 2025–2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
the name:Fahd Ibrahim Saleh Ismail fahad.is@ntu.edu.iq e-mail:
8. Course Objectives:
identification on basics science Neighborhoods microscopic Its importance in Field Healthy The pharmacist. Discrimination between Types creatures The snake minute and its characteristics. to understand Ways growth creatures microscopic and factors Influential In it. identification on Diseases that It causes Neighborhoods microscopic and ways Her transfer Prevention From it. development skills Students in application principles Sterilization and purification Safety laboratory.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral,	Whiteboard , PowerPoint	introduction in science Neighborhoods microscopic	Knowledge and Application	4	the first

and written exams	slides, conducting laboratory experiments	concept science Neighborhoods microscopic Its importance defines science Neighborhoods microscopic And it shows Its importance in Field pharmacist And healthy.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	classification creatures microscopic Types creatures The snake minute He distinguishes between bacteria and fungi and viruses and parasites from where Properties Basic.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	installation cell Bacterial ingredients cell Bacterial and its functions He explains installation cell Bacterial and job all part From it.	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	growth Neighborhoods microscopic stages Growth and factors Influential Explains stages growth creatures microscopic and factors Influential In it.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Sterilization and purification means Sterilization and purification He distinguishes between Sterilization and purification And he	Knowledge and Application	4	Fifth

		chooses The method The occasion per condition.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	agriculture Neighborhoods microscopic The circles Agricultural and technologies Agriculture It is clear Types The circles Agricultural And its uses in laboratory.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	bacteria nurse Diseases Bacterial The rumor He specifies Most important bacteria nurse diseases that It causes.	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Viruses features Viruses and its classification Explains features Viruses and mechanism Its reproduction In picture Simplified.	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	fungi fungi Medical Its importance He distinguishes Types fungi nurse and its impact in man.	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting experiments	parasites parasites Medical The rumor It is clear Types parasites and ways Her transfer Prevention From it.	Knowledge and Application	4	tenth
Reports, assignments,	Whiteboard ,	immunity body	Knowledge and Application	4	eleventh

written, oral, and written exams	PowerPoint slides, conducting laboratory experiments	Response Immunity and principles Immunity He explains Mechanism response The device Immunological Causes Diseases.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	transmission Infection Ways transmission Diseases infectious He specifies means transmission Infection And it applies procedures Prevention From it.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Antibiotics Vitality Mechanism a job Antibiotics Vitality resistance bacteria Explains Mechanism a job Antibiotics Vitality and reasons Resistance Bacterial.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Applications laboratory Tests microscopic Basic Applies Principles Basic For tests microscopic with Consideration Safety laboratory.	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	review Comprehensive review and calendar connects Concepts The course And he applies it in Diagnosis Cases microscopic Basic.	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.

- Midterm exam: 40 marks
- Final exam: 60 marks

12. Learning and teaching resources	
Medical Microbiology / Dr. Mahdi Al-Sammak / Ministry of Health - 1983	Required textbooks (curriculum books, if available)
Review of medical microbiology 14t Edition Tawetz, Ji melnigk, A. Adelberg 1980. Richard A. Harvey, Pamela C. Champe & Bruce D. Fisher 2007: Lippincott's Illustrated Reviews: Microbiology, 2nd edition. Lippincott Williams & Wilkins co, USA. Katherine N. Ward, A. Christine McCartney & Bishan Thakker 2009: Notes On Medical Microbiology, 2nd edition. Churchill Livingstone Elsevier, UK. Marjorie Kelly Cowan & Kathleen Park Talaro 2006: Art Notebook "Microbiology", 1st edition. The McGraw-Hill Companies, USA.	Main references (sources)
A short text book of medical microbiology By, Satish Guptr,, Endia – 1987. Morello, Mizer & Granato 2006: Laboratory manual and Workbook in Microbiology "Application to patient care", Eighth edition. The McGraw-Hill Companies Inc, USA.	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
Arabic
2. Course code:
NTU 104
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours of theory / Number of units: 2
7. Name of the course coordinator
the name: Inam Ghani Ali Muhammad anaam.g@ntu.edu.iq e-mail:
8. Course Objectives:
1- The primary goal of Arabic language instruction is for students to master the language they speak. This includes first aid students learning grammatical rules, reviewing them, and applying them effectively. 2- Definition in conversation and writing. 3- Getting acquainted with Arab culture and its vast heritage. 4- Studying some famous texts and literary pieces in Arabic literature. 5- Studying the rules of correct writing and spelling.
9. Teaching and learning strategy:
Brainstorming strategy Discussion strategy Self-learning strategy E-learning strategy Study strategy Idea generation strategy – The strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Introduction to linguistic errors – the closed, long, and open taa	Knowledge	2	the first
Reports, assignments, written and	Whiteboard ,	Rules for writing the long and short alif – solar and lunar letters	Knowledge	2	the second

oral exams (midterm and final)	PowerPoint slides,				
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	The letters ض and ظ	Knowledge	2	the third
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Writing the hamza	Knowledge	2	Fourth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	punctuation marks	Knowledge	2	Fifth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Noun and verb, and the difference between them	Knowledge	2	Sixth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Objects	Knowledge	2	Seventh
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	number	Knowledge	2	Eighth
Reports, assignments, written and oral exams	Whiteboard , PowerPoint slides,	Common Grammar Errors Applications 1	Knowledge	2	Ninth

(midterm and final)					
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Common Grammar Errors Applications 2	Knowledge	2	tenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	The letters Noon and Tanween are meanings of prepositions.	Knowledge	2	eleventh
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Formal aspects of administrative discourse	Knowledge	2	twelfth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Administrative discourse language 1	Knowledge	2	thirteenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Administrative Discourse Language 2	Knowledge	2	fourteenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard , PowerPoint slides,	Examples of administrative correspondence	Knowledge	2	fifteenth

11. Course Evaluation
The grade out of 100 is distributed according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.
- Midterm exam: 30 marks - Final exam: 70 marks

12. Learning and teaching resources	
Basic rules in the Arabic language – Muhammad Hussein Al-Masoumi 2008.	Required textbooks (curriculum books, if available)
Introduction to Arabic Linguistics – Abdullah Al-Tai 2015. Contemporary Arabic Literature – Muhammad Muhammad Hussein 2010.	Main references (sources)
Arabic Grammar Level One – Abdulrahman Al-Fawzan 2016.	Recommended books and references (scientific journals and reports...)
Noor Library for downloading free books.	Electronic references and websites

1. Course Name:
Pharmaceutical accounts
2. Course code:
PHT 113
3. Semester/Year:
First semester / 2025–2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
the name:Zaki Saleh Nebula sedeem.zeki@ntu.edu.iq :e-mail
8. Course Objectives:
identification on Principles Basic For accounts Pharmacist Used in Practice Professional. development skill procedure Operations Calculation Related In doses and solutions and concentrations. Gain Students ability on transformation Units Pharmacist accurately. application Laws Sports in to prepare preparations Pharmacist.

numbers Students To conduct the accounts pharmaceutical In picture Correct safe.

9. Teaching and learning strategy:

Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy

- On-the-job training strategy - Self-learning strategy

- E-learning strategy - Study strategy

- Inference strategy - Spaced practice strategy

- Strategy of switching ideas - Strategy of providing examples

10. Course Structure

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	introduction in the accounts Pharmacist importance the accounts Pharmacist and units Measurement defines concept the accounts Pharmacist And it shows importance units Measurement in Field pharmacist.	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	systems Measurement order Metric and systems Measurement Pharmacist He distinguishes between systems Measurement different And he uses it In picture Correct.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	transformation Units Conversion between units the weight And volumes Applies Operations transformation Units accurately in Issues Pharmacist.	Knowledge and Application	4	the third
Reports, assignments,	Whiteboard ,	Fractions And lineage	Knowledge and Application	4	Fourth

written, oral, and written exams	PowerPoint slides, conducting laboratory experiments	Fractions And lineage And proportion Solves Issues Using lineage And proportion in Applications Pharmacist.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	ratio centennial account Concentrations centennial Calculate Concentrations solutions Using ratio centennial.	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	solutions to prepare solutions and to alleviate it Applies laws to prepare and relief solutions Pharmacist.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Doses pharmaceutical account Doses pharmaceutical Calculate Doses pharmaceutical according to data Available.	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	account Doses children laws account Doses children Applies Laws different To calculate Doses children accurately.	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory	Concentrations account Concentrations Molarity Standard	Knowledge and Application	4	Ninth

	experiment s	Calculate Concentrations solutions Using Roads different.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	density weight qualitative Applications density weight qualitative Explains concept density weight qualitative They use them in the accounts Pharmacist.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Accounts preparations Pharmacist to prepare Compositions Pharmacist It is taking place the accounts Necessary To prepare preparations Pharmacist accurately.	Knowledge and Application	4	elevent h
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	solutions intravenous account Rates giving Liquids Calculate Rates giving solutions intravenous In picture Correct.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Applications Advanced solution Issues Pharmacist Various Applies Laws Sports in solution Issues Pharmacist different.	Knowledge and Application	4	thirtee nth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	review Applied review Comprehensive on the accounts analyzes Issues Pharmacist And he chooses road the solution The occasion.	Knowledge and Application	4	fourtee nth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	review and calendar review Final and test comprehensive Employs skills the accounts Pharmacist in solution Problems The process accurately.	Knowledge and Application	4	fifteenth
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11. Course Evaluation
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.
- Midterm exam: 40 marks - Final exam: 60 marks

12. Learning and teaching resources	
Ansel HC, Stoklosa MJ. 1- Pharmaceutical calculations 13 th edition Philadelphia, PA: Lippincott. Williams and Wilkins, 2010 2-Laboratory Manual for Practical Pharmacology adopted by the department.	Required textbooks (curriculum books, if available)
Ansel HC, Stoklosa MJ. Pharmaceutical calculations,10 th , th 13 Philadelphia, PA edition: Lippincott. Williams and Wilkins, 2010	Main references (sources)
Code of Ethics for Pharmacist. American Pharmaceutical	Recommended books and references (scientific journals and reports...)

https://www.pharmacist.com	Electronic references and websites

1. Course Name:
English language
2. Course code:
NTU101
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours of theory / Number of units: 2
7. Name of the course coordinator
the name:Hiyam Hashem Mohammed e-mail:
8. Course Objectives:
1- The main objective of the English language is for students to be able to learn the basics of the English language and its general rules. 2- Getting acquainted with conversation methods and quoting medical conversations. 3- Studying some famous texts and literary pieces. 4- Studying the rules of correct writing and spelling.
9. Teaching and learning strategy:
Brainstorming strategy Discussion strategy Self-learning strategy E-learning strategy Study strategy – Strategy for generating ideas – Strategy for providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Definition of basic English terms	Knowledge	2	the first

Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	How many units are there in English? (Three units)	Knowledge	2	the second
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	The eight parts of speech	Knowledge	2	the third
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Parts of speech 2	Knowledge	2	Fourth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	conversation	Knowledge	2	Fifth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Verb categories	Knowledge	2	Sixth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Acts of Being 1	Knowledge	2	Seventh
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Acts of Being 2	Knowledge	2	Eighth

Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Prepositions 1	Knowledge	2	Ninth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Prepositions 2	Knowledge	2	tenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	punctuation marks	Knowledge	2	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	simple past tense	Knowledge	2	twelfth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Past simple continuous tense	Knowledge	2	thirteenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Past perfect	Knowledge	2	fourteenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Types of sentences	Knowledge	2	fifteenth

11. Course Evaluation	
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.	
- Midterm exam: 40 marks - Final exam: 60 marks	

12. Learning and teaching resources	
"The Practice of English Language Teaching" (Jeremy Harmer) 1983. Approaches and Methods in Language Teaching. Jack C. Richards and Theodore S. Rodgers 2001.	Required textbooks (curriculum books, if available)
Using English Grammar, Raymond Murphy 1985.	Main references (sources)
dictionary Longman Modern English 2014.	Recommended books and references (scientific journals and reports...)
Noor Library for downloading free books.	Electronic references and websites

1. Course Name:
anatomy
2. Course code:
TID 110
3. Semester/Year:
First semester / 2025–2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
the name:
e-mail:
8. Course Objectives:
To learn the basic principles of anatomy and its importance in medical and pharmaceutical sciences.

Understanding the anatomical structure of the human body's systems and the relationship between their parts.

Distinguishing between different organs and tissues and their basic functions.

Developing the student's ability to use anatomical terminology correctly.

Linking anatomical structure to clinical and pharmaceutical applications

9. Teaching and learning strategy:

Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy

- On-the-job training strategy - Self-learning strategy

- E-learning strategy - Study strategy

- Inference strategy - Spaced practice strategy

- Strategy of switching ideas - Strategy of providing examples

10. Course Structure

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Introduction to Anatomy The concept of anatomy and anatomical terminology Anatomy defines and correctly uses basic anatomical terminology.	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Cell and tissue Types of tissues in the human body It distinguishes the types of tissues and shows their basic functions.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	skeletal system Bones and joints It explains the structure of the skeletal system and identifies the functions of bones and joints.	Knowledge and Application	4	the third

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	musculature Types of muscles and their structure It explains the structure of muscles, their types, and their role in movement.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	nervous system brain, spinal cord, and nerves It explains the anatomical structure of the nervous system and its main parts.	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	cardiovascular system Cardiovascular It identifies the parts of the heart and the course of the major blood vessels.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	respiratory system Respiratory organs It explains the anatomical structure of the respiratory system and the function of each organ.	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Digestive system The digestive tract and accessory glands It identifies the organs of the digestive system and explains their basic functions.	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	urinary system Kidneys and urinary tract It explains the anatomical structure of the urinary	Knowledge and Application	4	Ninth

and written exams	conducting laboratory experiments	system and the functions of its organs.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Reproductive system The male and female reproductive systems The anatomical structure of the male and female reproductive system is explained.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	endocrine system Endocrine glands It identifies the locations of the endocrine glands and explains their basic functions.	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	lymphatic system lymphatic vessels and nodes It explains the structure of the lymphatic system and its role in protecting the body.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	sense organs Eyes, ears, nose, tongue and skin It distinguishes the anatomical structures of the sensory organs and their functions.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Anatomical integration The relationship between body systems It connects the different anatomical systems of the body	Knowledge and Application	4	fourteenth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Comprehensive review Review and evaluation It employs anatomical concepts to correctly explain the structure of the human body's systems.	Knowledge and Application	4	fifteenth
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11. Course Evaluation
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.
- Midterm exam: 40 marks - Final exam: 60 marks

12. Learning and teaching resources	
Principles of Anatomy for Students of Health Professions Institutes, Dr. Abdul Rahman Mahmoud Al-Rahim / Ministry of Health, 1983.	Required textbooks (curriculum books, if available)
Atlas of anatomy (Grates) / 1998. Kingham anatomy – Oxford – London / 1987	Main references (sources)
Drake RL, Vogl W, Mitchell AWM. Gray's Anatomy for Students. Elsevier, Philadelphia, 2005.	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
Laboratory and workshop safety
2. Course code:
TID 108
3. Online semester/year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours of theory / Number of units: 2
7. Name of the course coordinator
the name: Marwan Abdul Razzaq Kamil marwan.kamil@ntu.edu.iq e-mail:
8. Course Objectives:
1- To have the ability to deal with sources of danger in laboratories and workshops. 2- To have the ability to think correctly and take appropriate action in the event of any incident in the laboratory. 3- To become familiar with the dangers of fires, how to deal with them, and fire prevention rules. 4- To become familiar with the types of hazards that can be encountered in laboratories. 5- To become familiar with safety guidelines in laboratories and workshops. 6- To learn what she should do before and after performing scientific experiments.
9. Teaching and learning strategy:
- A strategy for explaining the material For study by the academic staff - Knowledge strategy through homework assignments for school vocabulary Discussion strategy Self-learning strategy Study strategy - Idea generation strategy - Strategy of providing examples and visiting the library and websites

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Essential equipment that must be available in the laboratory (laboratory layout)	Knowledge	2	the first

Reports, assignments, theoretical exams, and Editorial	whiteboard, PowerPoint slides, a	Safety precautions when handling laboratory equipment and chemicals.	Knowledge	2	the second
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Safety precautions when completing laboratory work and storing and preserving materials.	Knowledge	2	the third
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Fires, their types, and methods of extinguishing them.	Knowledge	2	Fourth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Fires, their types, and methods of extinguishing them.	Knowledge	2	Fifth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Personal protective equipment	Knowledge	2	Sixth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Chemical hazards and how to deal with them	Knowledge	2	Seventh
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Radiation hazards	Knowledge	2	Eighth
Reports, assignments, written and	Whiteboard, PowerPoint slides,	biological hazards	Knowledge	2	Ninth

oral exams (midterm and final)					
Reports, assignments, written and oral exams (midterm and final)	whiteboard, PowerPoint slides, a	Disposal of laboratory (medical) waste; use of warning signs in the laboratory	Knowledge	2	tenth
Reports, assignments, written and oral exams	Whiteboard, PowerPoint slides,	Disposal of laboratory (medical) waste; use of warning signs in the laboratory	Knowledge	2	eleventh
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	First aid in laboratories	Knowledge	2	twelfth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	First aid in laboratories	Knowledge	2	thirteenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Other environmental factors and their impact on safety and health (light, noise, heat, humidity).	Knowledge	2	fourteenth
Reports, assignments, written and oral exams (midterm and final)	Whiteboard, PowerPoint slides,	Safety in field studies	Knowledge	2	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily attendance, daily, oral, monthly, written exams, reports, etc.

- The midterm exam is worth 30 marks.
- The final exam is worth 70 marks.

12. Learning and teaching resources	
Laboratory Safety for Chemistry Students. Robert H. Hill Jr. David C. Finster 2016. Laboratory Safety: Principles and Practices. Neal Langerman. 2017	Required textbooks (curriculum books, if available)
Laboratory Safety: Theory and Practice. Robert H. Hill Jr 2017.	Main references (sources)
Chemical Laboratory Safety and Security: A Guide to Developing Standard Operating Procedures. Division on Earth and Life Studies and National Research Council. 2010 Safety in the Biology Lab. Bob Farber 2010.	Recommended books and references (scientific journals and reports...)
Noor Library for downloading free books	Electronic references and websites

1. Course Name:
Biochemistry
2. Course code:
PHT 117
3. Semester/Year:
First semester / 2025–2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
the name: Taj El-Din Hassan Khalaf Rahim taj.hasan@ntu.edu.iq Email:
8. Course Objectives:
To learn the basic principles of biochemistry and its importance in medical and pharmaceutical sciences.

Understanding the chemical composition of biological compounds and their functions in the human body.

Understanding the basic metabolic processes and their role in energy production.

Explaining the role of enzymes, vitamins, and hormones in regulating vital processes.

Linking the basic concepts of biochemistry to pharmaceutical and clinical applications.

9. Teaching and learning strategy:

Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy

- On-the-job training strategy - Self-learning strategy

- E-learning strategy - Study strategy

- Inference strategy - Spaced practice strategy

- Strategy of switching ideas - Strategy of providing examples

10. Course Structure

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Introduction to Biochemistry The concept of biochemistry and its importance Biochemistry is defined and its importance in the pharmaceutical and medical fields is explained.	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Water and mineral salts Properties and functions of water and salts It explains the importance of water and mineral salts in maintaining bodily functions.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory	Carbohydrates Structure, classification, and functions It identifies the types of carbohydrates and explains their vital functions.	Knowledge and Application	4	the third

	experiment s				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	fats Structure, properties, and functions It explains the types of fats and their importance in the human body.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	proteins Protein structure and functions It explains the structure of proteins and the factors that influence their functions.	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	enzymes Properties of enzymes and their mechanism of action It explains the mechanism of action of enzymes and the factors that influence their activity.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Vitamins Types of vitamins and their functions It distinguishes between water-soluble and fat- soluble vitamins and explains the importance of each.	Knowledge and Application	4	Sevent h
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	hormones Classification of hormones and their mechanism of action It explains the role of hormones in regulating vital processes.	Knowledge and Application	4	Eighth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	carbohydrate metabolism Carbohydrate metabolism and energy production It explains the basic stages of carbohydrate metabolism and its role in energy production.	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting experiments	fat metabolism fat metabolism It explains the mechanisms of fat metabolism and its importance in the body.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	protein metabolism Amino acid and protein metabolism It explains the stages of protein metabolism and their role in building and regenerating tissues.	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Nucleic acids DNA and RNA: their structure and functions It distinguishes between nucleic acids and explains their role in transmitting genetic information.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Metabolic balance Regulation of metabolic processes It explains the mechanisms for regulating metabolic reactions within the body.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral,	Whiteboard , PowerPoint	Clinical applications Biochemistry in Diagnosis	Knowledge and Application	4	fourteenth

and written exams	slides, conducting laboratory experiments	It links the results of biochemical tests to common medical conditions.			
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Comprehensive review Review and evaluation It employs concepts from biochemistry to explain biological processes and pharmaceutical applications.	Knowledge and Application	4	fifteenth

11. Course Evaluation
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, oral, monthly, written exams, reports, etc.
- Midterm exam: 40 marks - Final exam: 60 marks

12. Learning and teaching resources	
1-Principle of Biochemistry by lehniger 2-Harper's Illustration Rated Biochemistry by Rolerk Murrar	Required textbooks (curriculum books, if available)
Dr. Sami Al-Mudhaffar,Biochemistry1- Dr. Jassim JundFundamentals of Biochemistry2- .	
	Main references (sources)
	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites
1. Course Name:	
First aid	

2. Course code:
PHT 118
3. Semester/Year:
First semester / 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
Name: Khansaa BasemFadelNice e-mail: khnsaa.bf@ntu.edu.iq
8. Course Objectives:
To learn the basic principles of first aid and its importance in saving the injured. To equip students with the necessary skills to deal with emergency situations correctly. Developing the ability to assess the patient's condition and take appropriate action before medical care arrives. Learn how to deal with common injuries and accidents. Promoting awareness of safety procedures and risk prevention in the academic and work environment..
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - The strategy of switching between ideas - The strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Introduction to First Aid The concept and objectives of first aid It defines first aid and explains its importance in preserving the life of the injured person.	Knowledge	1	the first
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Assessing the injured Primary and secondary examination of the patient He assesses the patient's condition and determines the priorities for providing first aid.	Knowledge	1	the second
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Cardiopulmonary resuscitation Principles of cardiopulmonary resuscitation (CPR)CPR) It explains the steps of cardiopulmonary resuscitation according to the basic principles.	Knowledge	1	the third
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Suffocation First aid for airway obstruction He applies the initial procedures for dealing with cases of suffocation.	Knowledge	1	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Bleeding and wounds Types of bleeding and methods of controlling it It identifies the types of bleeding and applies the correct methods to stop it.	Knowledge	1	Fifth

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Fractures and sprains First aid for bone and joint injuries It identifies the types of fractures and sprains and applies appropriate first aid.	Knowledge	1	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	burns Degrees of burns and methods of first aid It distinguishes the degrees of burns and shows how to deal with each one.	Knowledge	1	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	poisoning Types of poisoning and initial procedures It explains the initial methods of dealing with various cases of poisoning.	Knowledge	1	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Shock and fainting Causes of shock and fainting and how to treat them He differentiates between shock and fainting and applies appropriate first aid.	Knowledge	1	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting practical experiments	Bites and stings Insect bites, scorpion stings, and snake bites It explains first aid for common bites and stings.	Knowledge	1	tenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Environmental emergency Sunstroke, heat exhaustion, hypothermia It applies appropriate procedures to deal with environmental emergencies.	Knowledge	1	eleventh

Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Eye, ear and nose injuries First aid for common injuries It explains how to safely handle eye, ear, and nose injuries.	Knowledge	1	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Transporting the injured Methods of carrying and transporting the injured He applies the correct methods for transporting the injured while taking safety into account.	Knowledge	1	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	First aid kit Its components and uses Identify the contents of the first aid kit and use them correctly.	Knowledge	1	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides,	Comprehensive review Review and evaluation He employs first aid principles in dealing with various emergency situations confidently and efficiently.	Knowledge	1	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam 30 degrees

Final exam 70 degrees

12. Learning and teaching resources	
Dr. Khader Dawood Suleiman, Dr. Muhammad Yusuf (Public Health). Ministry of Higher Education and Scientific Research / University of Mosul, 1988.	Required textbooks (curriculum books, if available)
First Aid for the USMLE Step1- Tao Le, Vikas Bhushan, Matthew Sochat, Yash Chavda. Andrew Zureick – 2020.	Main references (sources)
Emergency First Aid: Recognition and Response Medical Emergencies – American College of Emergency Physicians (ACEP) – 2016 The Complete First Aid Pocket Guide – John Furst - 2018	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:
Organic Chemistry
2. Course code:
PHT 117
3. Semester/Year:
First semester / 2025–2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours practical + 30 hours theoretical / Number of units: 4
7. Name of the course coordinator
the name: Muhannad Habib Ahmed Abbas Mohaned.ha@ntu.edu.iq e-mail:
8. Course Objectives:
To understand the basic principles of organic chemistry and its importance in pharmaceutical sciences. Understanding the structure, nomenclature, and classification of organic compounds according to scientific principles. Identifying functional groups and their physical and chemical properties. Explaining the reactions of basic organic compounds and their relationship to pharmaceutical preparations.

Developing the student's ability to link organic chemistry with pharmaceutical and biological applications.

9. Teaching and learning strategy:

Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy

- On-the-job training strategy - Self-learning strategy

- E-learning strategy - Study strategy

- Inference strategy - Spaced practice strategy

- Strategy of switching ideas - Strategy of providing examples

10. Course Structure

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Introduction to Organic Chemistry The concept of organic chemistry and its importance It defines organic chemistry and explains its importance in the pharmaceutical field.	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Atomic structure and bonds Chemical bonds and hybridization of the carbon atom It explains the types of chemical bonds and the hybridization of the carbon atom in organic compounds.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory	aliphatic hydrocarbons Alkanes and their properties It distinguishes alkanes and explains their physical and chemical properties.	Knowledge and Application	4	the third

	experiment s				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	alkenes Structure, nomenclature, and interactions It explains the structure, nomenclature, and main reactions of alkenes.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	alkynes Properties and interactions It explains the properties of alkynes and their basic reactions.	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Aromatic hydrocarbons Gasoline and its derivatives It explains the composition of benzene and the properties of aromatic compounds.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Organic halides alkyl and aryl halides It identifies organic halides and shows their most important reactions.	Knowledge and Application	4	Sevent h
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Alcohols and phenols Properties and reactions It explains the properties and uses of alcohols and phenols.	Knowledge and Application	4	Eighth
Reports, assignments,	Whiteboard ,	Ethers and aldehydes	Knowledge and Application	4	Ninth

written, oral, and written exams	PowerPoint slides, conducting laboratory experiments	Composition and Properties It explains the properties of ethers and aldehydes and their basic reactions.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ketones Naming and interactions It explains the properties of ketones, methods of preparing them, and their reactions.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Carboxylic acids Composition and Properties It explains the properties of carboxylic acids and their most important reactions.	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Carboxylic acid derivatives Esters and amides It distinguishes the derivatives of carboxylic acids and shows their uses.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	The secretaries Composition, properties, and nomenclature It explains the structure of amines, their properties, and their importance in the pharmaceutical field.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory	Organic compounds of pharmaceutical importance Applications of organic chemistry in pharmacy	Knowledge and Application	4	fourteenth

	experiment s	It links organic compounds and their uses in the pharmaceutical industry.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Comprehensive review Review and evaluation It employs concepts of organic chemistry in explaining pharmaceutical reactions and applications.	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks

- Final exam: 60 marks

12. Learning and teaching resources

Dr. Khader Dawood Suleiman, Dr. Muhammad Yusuf (Public Health). Ministry of Higher Education and Scientific Research / University of Mosul, 1988.	Required textbooks (curriculum books, if available)
First Aid for the USMLE Step1- Tao Le, Vikas Bhushan, Matthew Sochat, Yash Chavda. Andrew Zureick – 2020.	Main references (sources)
Emergency First Aid: Recognition and Response Medical Emergencies – American College of Emergency Physicians (ACEP) – 2016 The Complete First Aid Pocket Guide – John Furst - 2018	Recommended books and references (scientific journals and reports...)

/	Electronic references and websites
1. Course Name:	
Organic Chemistry	
2. Course code:	
PHT 117	
3. Semester/Year:	
First semester / 2025–2026	
4. Date the description was prepared:	
15/9/2025	
5. Available forms of attendance:	
My presence	
6. Number of credit hours (total) / Number of units (total)	
30 hours practical + 30 hours theoretical / Number of units: 4	
7. Name of the course coordinator	
the name: Muhannad Habib Ahmed Abbas Mohaned.ha@ntu.edu.iq e-mail:	
8. Course Objectives:	
To understand the basic principles of organic chemistry and its importance in pharmaceutical sciences. Understanding the structure, nomenclature, and classification of organic compounds according to scientific principles. Identifying functional groups and their physical and chemical properties. Explaining the reactions of basic organic compounds and their relationship to pharmaceutical preparations. Developing the student's ability to link organic chemistry with pharmaceutical and biological applications.	
9. Teaching and learning strategy:	
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples	

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Introduction to Organic Chemistry The concept of organic chemistry and its importance It defines organic chemistry and explains its importance in the pharmaceutical field.	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Atomic structure and bonds Chemical bonds and hybridization of the carbon atom It explains the types of chemical bonds and the hybridization of the carbon atom in organic compounds.	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	aliphatic hydrocarbons Alkanes and their properties It distinguishes alkanes and explains their physical and chemical properties.	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	alkenes Structure, nomenclature, and interactions It explains the structure, nomenclature, and main reactions of alkenes.	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	alkynes Properties and interactions It explains the properties of alkynes and their basic reactions.	Knowledge and Application	4	Fifth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Aromatic hydrocarbons Gasoline and its derivatives It explains the composition of benzene and the properties of aromatic compounds.	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Organic halides alkyl and aryl halides It identifies organic halides and shows their most important reactions.	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Alcohols and phenols Properties and reactions It explains the properties and uses of alcohols and phenols.	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ethers and aldehydes Composition and Properties It explains the properties of ethers and aldehydes and their basic reactions.	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ketones Naming and interactions It explains the properties of ketones, methods of preparing them, and their reactions.	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	Carboxylic acids Composition and Properties	Knowledge and Application	4	eleventh

and written exams	conducting laboratory experiments	It explains the properties of carboxylic acids and their most important reactions.			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Carboxylic acid derivatives Esters and amides It distinguishes the derivatives of carboxylic acids and shows their uses.	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	The secretaries Composition, properties, and nomenclature It explains the structure of amines, their properties, and their importance in the pharmaceutical field.	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Organic compounds of pharmaceutical importance Applications of organic chemistry in pharmacy It links organic compounds and their uses in the pharmaceutical industry.	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Comprehensive review Review and evaluation It employs concepts of organic chemistry in explaining pharmaceutical reactions and applications.	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks
- Final exam: 60 marks

12. Learning and teaching resources

Dr. Khader Dawood Suleiman, Dr. Muhammad Yusuf (Public Health). Ministry of Higher Education and Scientific Research / University of Mosul, 1988.	Required textbooks (curriculum books, if available)
First Aid for the USMLE Step1- Tao Le, Vikas Bhushan, Matthew Sochat, Yash Chavda. Andrew Zureick – 2020.	Main references (sources)
Emergency First Aid: Recognition and Response Medical Emergencies – American College of Emergency Physicians (ACEP) – 2016 The Complete First Aid Pocket Guide – John Furst - 2018	Recommended books and references (scientific journals and reports...)
/	Electronic references and websites

1. Course Name:

therapeutic applications

2. Course code:

PHT 215

3. Semester/Year:

For the chapter to Second / Level Two 2025-2026

4. Date the description was prepared:

15/9/2025

5. Available forms of attendance:

My presence

6. Number of credit hours (total) / Number of units (total)

15 hours NMy wit+30 working hours / Number of units: 3

7. Name of the course coordinator

the name: Siraj al-Din Ziyad Shihab

Sraj.ziad@gmail.com e-mail:

8. Course Objectives:

1-Treating clinical medical conditions and how to deal with basic diseases and their common symptoms, as well as providing basic information and general principles upon which optimal use is based.

For medicines in treating patients.

2- Introducing pharmacy students to clinical diseases that affect the heart, how to deal with them, and identifying the best solution for treating them.

3- Identifying diseases specific to the urinary system, how to deal with them, and the best solution for treating them.

4- Identifying diseases specific to the nervous system, how to deal with them, and the best solution for treating them.

5- Studying diseases specific to the digestive system and the groups of drugs used in treating these diseases

9. Teaching and learning strategy:

Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy

- On-the-job training strategy - Self-learning strategy

- E-learning strategy - Study strategy

- Inference strategy - Spaced practice strategy

- Strategy of switching ideas - Strategy of providing examples

10. Course Structure

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Acute kidney failure and hemodialysis and peritoneal dialysis for kidney failure patients	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting	AKidney failureHeychronic	Knowledge and Application	4	the second

	laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	A Forced A B a T Liquids and Electrolytes and Light in the body	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	The land is expanding and Sta T A Hamid	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	A For urinary incontinence in adults and children T F a t o	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	A Passer by Add a For the skin N A To my crown da	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Count what Nata zam beati ng T A For the heart	Knowledge and Application	4	Sevent h

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	A To coagulate	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Astroke	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	disease For the bright Non-inflammatory	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	A For liver cirrhosis Y	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	disease For A wa epileptic seizures	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	A To harden the ferrous D and To repel Aa	Knowledge and Application	4	thirteenth

and written exams	conducting laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Passerby Parkinson's disease	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Pain management	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks
- Final exam: 60 marks

12. Learning and teaching resources

Pharmacotherapy hand book 7th edition	Required textbooks (curriculum books, if available)
-Roger Walker, Clive Edwards (eds),	Main references (sources)

-Clinical Pharmacy & Therapeutics, Barbara G.Wells & Joseph T. Diriro, Pharmacotherapy handbook 7th Edition	
British National Formulary	Recommended books and references (scientific journals and reports...)
FDA	Electronic references and websites

1. Course Name:
HealthAFor society
2. Course code:
PHT 217
3. Semester/Year:
AFor the chapter to Second / Level Two 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours / cDadALandHDat2 andHda
7. Name of the course coordinator
the name: Marwan Abdul Razzaq Kamel marwan.kamil@ntu.edu.iq e-mail:
8. Course Objectives:
ComemAnd teaching health awarenessFor the general publicandEspecially TelyourALdiedleechWith treatment ALmedicineYesAndPerhapsC GhayRALmedicineYesFor medical conditionsCommonALoccurrence In society.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Basic Principles and Introduction to Community Health	Knowledge	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Basic Principles and Introduction to Epidemiology	Knowledge	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Epidemiological studies, types of epidemiological study designs and output measurements	Knowledge	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Diseases – Digestive System – Part the first	Knowledge	4	Fourth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical conditions – Digestive system – Part Two	Knowledge	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Skin Diseases - Part 1	Knowledge	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical Conditions – Skin – Part Two	Knowledge	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	General review and discussion of previous lessons	Knowledge	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical Conditions – Malnutrition – Part 1	Knowledge	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	Medical Conditions – Malnutrition – Part Two	Knowledge	4	tenth

and written exams	conducting laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical Conditions – Respiratory – Part One	Knowledge	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical Conditions – Respiratory – Part Two	Knowledge	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical Conditions – Maternal and Child Health – Part 1	Knowledge	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Medical Conditions – Maternal and Child Health – Part Two	Knowledge	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	General review and discussion of previous lessons	Knowledge	4	fifteenth

11. Course Evaluation
The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.
- Midterm exam 30 degree Final exam 70 degree

12. Learning and teaching resources	
Maxcy-Rosenau-Last Public Health and Preventive Medicine Public Health and Preventive Medicine [15 ed.], 2008 by Robert Wallace	Required textbooks (curriculum books, if available)
Short Textbook of Public Health medicine for the tropics, 4th edition, 2003 by Adetokunbo O. Lucas, Herbert M. Gilles	Main references (sources)
WHO journal (Eastern Mediterranean Health Journal)	Recommended books and references (scientific journals and reports...)
WHO website, UpToDate database, MedScape database	Electronic references and websites

1. Course Name:
مصنوعاتيLala Industrial
2. Course code:
PHT 212
3. Semester/Year:
AFor the chaptertoSecond / Level Two2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hoursTheory and 30hour My workNumber of units: 4
7. Name of the course coordinator
the name:ANawar Sabah Khalaf Anwar.sabah@gmail.com e-mail:
8. Course Objectives:
This course aims to teach pharmacy students the steps and procedures that must be followed in the preformation of pharmaceutical dosage forms. This basic coarse material provides the necessary principles for integrating pharmaceutical technology knowledge into the preformation of the ideal dosage form. It includes grinding, mixing, drying, and filtration, along with sterilization, to achieve the correct form and dosage form processing.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Principles of pharmaceutical processing; Introduction in industrial pharmacy and pre-formulation	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Mixing; fluid mixing; flow characteristics • Effervescent granules: Preparation and characterization	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	• Milling; pharmaceutical application • Flow properties and rheology of granules	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	• Size measurement methods; • Flow properties and rheology of granules(cont)	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Drying: definition; purpose; humidity measurement • Tablet dosage form: Preparation and characterization	Knowledge and Application	4	Fifth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Theory of drying Tablet dosage form: Preparation and characterization	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Theory of drying (cont) Review and tutorial	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	- Clarification and filtration. - Evaluation of tablets	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	theory; filter media; filter aids; Evaluation of tablets	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Selection of drying method Preparation of children aspirin by wet granulation method	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	Sterilization Sustained release dosage forms: Preparation and characterization	Knowledge and Application	4	eleventh

and written exams	conducting laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Sterilization Sustained release dosage forms: Preparation and characterization	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Pharmaceutical dosage forms Coating techniques of tablets	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Sterile products; development; form relationship; Coating techniques of tablets	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Production; processing; quality control Review and tutorial	Knowledge and Application	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks

- Final exam: 60 marks

12. Learning and teaching resources

The Theory and Practice of Industrial Pharmacy by Leon Lachman <i>et al</i>	Required textbooks (curriculum books, if available)
Aulton's Pharmaceutics The Design and Manufacture of Medicines	Main references (sources)
	Recommended books and references (scientific journals and reports...)
BNF, BP and USP	Electronic references and websites

1. Course Name:
ApoisonAnd
2. Course code:
PHT 209
3. Semester/Year:
AFor the chaptertoSecond / Level Two2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours NMy witNumber of units: 2
7. Name of the course coordinator
the name:Bilal Hussein Ali Balal.hseen@gmail.com e-mail:
8. Course Objectives:
To study the principle of exposure to toxic chemicals and physical elements ADifferentAndForAndMtoAenvironmentalandSourcesDurrahaAndLiaT Samit^aandKhphaseT^a OnAFor humanityN By the neighborhoodTh It is possibleNALTNofor MN F^mAToDaBRANoTLand^b For protectionAFor our beingTAbeard ضdAFor the muskTarApoisonAFor suspect^ In^aandHowATo dealto With^a BahAtomAndLalammam baTheyWaysPerhapsCAFor the benefit For youtoAFor the elementsRAndNoRKabbaTtoxic.
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Introduction: General Considerations The environmental host Toxic factors Introduction to toxic materials The general public	Knowledge	2	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	toxic carcinogenic substances Introduction to using the devices Scientific laboratory	Knowledge	2	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Targeted members and knowledge Systemic toxins in the liver. Toxic substances on liver cells.	Knowledge	2	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Target organs and systemic toxicology. The system Respiratory nicotine poisoning	Knowledge	2	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory	Targeted members and knowledge Systemic toxins cyanide toxicity	Knowledge	2	Fifth

	experiment s				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	For the targeted organs and systemic toxicology. Skin Toxicity of pollutants	Knowledge	2	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Target organs and systemic toxicology. The system Nervous system - Toxicity of household cleaners	Knowledge	2	Sevent h
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Target organs and systemic toxicology. The system Nervous system - Toxicity of household cleaners	Knowledge	2	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Toxic substances: additives Food and pollutants Hydrocarbon toxicity	Knowledge	2	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiment s	Toxic substances: Pesticides Insecticides and toxic agents on the urinary system	Knowledge	2	tenth
Reports, assignments,	Whiteboard ,		Knowledge	2	elevent h

written, oral, and written exams	PowerPoint slides, conducting laboratory experiments	Toxic substances: Metals, pesticide toxicity			
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Toxic substances: radiation Radioactive materials have a toxic effect on some plants.	Knowledge	2	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Environmental toxins: pollution Air and water pollutants and soil Toxicity of some preservatives In canned foods	Knowledge	2	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	(Gases) Liquefied gas For tears, pepper spray Scorpion venom toxicity	Knowledge	2	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	cyanide(H_2S) The toxic effect of monoisobutyl gas Carbon dioxide	Knowledge	2	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam 30 degrees

Final exam 70 degree

12. Learning and teaching resources

Casarett and Doull, Toxicology	Required textbooks (curriculum books, if available)
Casarett and Doull, Toxicology	Main references (sources)
	Recommended books and references (scientific journals and reports...)
	Electronic references and websites

1. Course Name:

Professional ethics

2. Course code:

NTU 204

3. Semester/Year:

A For the chapter to Second / Level Two 2025-2026

4. Date the description was prepared:

15/9/2025

5. Available forms of attendance:

My presence

6. Number of credit hours (total) / Number of units (total)

30 hour Theory / Number of units: 2

7. Name of the course coordinator

Name: Noor Thaer Ahmed Abdul

nour.thaer.dti@ntu.edu.iq e-mail:

8. Course Objectives:

It is to provide students with a sound theoretical background on the principles of pharmaceutical ethics, in terms of recognizing the theories of medical ethics and the laws

governing the practice of the profession. ATo dealto BNAThiefdBecause I am with the patient

And with the medical staff who work withthey

9. Teaching and learning strategy:

Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy

- On-the-job training strategy - Self-learning strategy

- E-learning strategy - Study strategy

- Inference strategy - Spaced practice strategy

- Strategy of switching ideas - Strategy of providing examples

10. Course Structure

Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Introduction to Pharmacy Ethics (theoretical considerations).	Knowledge	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Law and Ethics	Knowledge	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting	Code of Ethics for Pharmacists	Knowledge	4	the third

	laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	The Common Considerations in Pharmaceutical Practice • (Beneficence, . Ethical in Care	Knowledge	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Common Ethical Considerations in Pharmaceutical Care Practice • Autonomy, Honesty	Knowledge	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Common Ethical Considerations in Pharmaceutical Care Practice • Informed Consent, Confidentiality, Fidelity	Knowledge	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Common Ethical Considerations in Pharmaceutical Care Practice • Informed Consent, Confidentiality, Fidelity	Knowledge	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard, PowerPoint slides, conducting laboratory experiments	Making decisions. ethical	Knowledge	4	Eighth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ethical issues related to clinical pharmacy research	Knowledge	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ethical problems in the pharmacist's clinical practice	Knowledge	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Preventing misuse of medicines	Knowledge	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Case studies in pharmacy ethics	Knowledge	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Special problem areas like abortion	Knowledge	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	Ethical issues related to contraception	Knowledge	4	fourteenth

and written exams	conducting laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Ethical issues related to sterilization	Knowledge	4	fifteenth

11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam 30 degree

Final exam 70 degrees

12. Learning and teaching resources

1- Ruth Rodgers, (ed.); fast track: Law and Ethics in Pharmacy Practice. Pharmaceutical Press 2010. 2- Joy Wingfield and David Badcott. Pharmacy Ethics and Decision Making. Pharmaceutical Press 2007	Required textbooks (curriculum books, if available)
Robert J. Cipolle, Linda M. Strand, Peter C. Morley. Pharmaceutical Care Practice: The Clinician's Guide, 2nd Edition. • Robert m. Veatch and Amy Haddad. Case Studies in Pharmacy Ethics. second edition. Copyright © 2008 by Oxford University Press, Inc	Main references (sources)
	Recommended books and references (scientific journals and reports...)
	Electronic references and websites

1. Course Name:
ScienceNoTwoy
2. Course code:
PHT 214
3. Semester/Year:
AFor the chapter to Second / Level Two 2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hours My work + 30 Theory hour / Number of units: 4
7. Name of the course coordinator
the name: Bilal Hussein Ali Balal.hseen@gmail.com e-mail:
8. Course Objectives:
1-The overall objective of this course is to introduce the basic concepts and principles of science. Pharmacy, which you can apply to the rest of the medical curriculum. 2 -Defining the nature of medicines, their sources, properties, effects, and the therapeutic value of the basic materials in the main drug classes. 3-Introducing students to how the body deals with drugs through the processes of absorption, diffusion, metabolism, and secretion or excretion (pharmacokinetics) and how they work biologically through the mechanism of action and harmful drug interactions (pharmacodynamics). 4-Introducing students to the methods of administration (intestinal and injectable) and their characteristics, in addition to equipping them with the skill of choosing the preferred method of administration for a specific therapeutic goal. 5-Introducing pharmacy students to the main neurotransmitters of the sympathetic nervous system Parasympathomimetic drugs, their preparation and release, types of receptors, site of action, and effects. They are introduced to the various classes of drugs that affect the autonomic nervous system (stimulants or inhibitors), their mechanisms of action, and their uses in treating medical problems. In addition to Identifying the side effects and contraindications of commonly used involuntary medications. 6-Furthermore, the course will cover medications used to treat inflammation. Microbiology. The general mechanisms of action of antimicrobial drugs are described. The mechanism of antimicrobial drug resistance is explained. The classification, uses, and adverse effects of frequently used antimicrobial drugs are explained. For bacteria, antifungal, antiviral, antiprotozoal Tato reply For the new AN
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy

Discussion strategy - Case study strategy

- Inductive teaching strategy - Concept mapping strategy
- On-the-job training strategy - Self-learning strategy
- E-learning strategy - Study strategy
- Inference strategy - Spaced practice strategy
- Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	General introduction to Pharmacology and Pharmacokinetics	Knowledge and Application	2	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Continue Pharmacokinetics	Knowledge and Application	2	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Drug Receptor interaction and Pharmacodynamics	Knowledge and Application	2	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting	Continue Pharmacodynamics The autonomic nervous system	Knowledge and Application	2	Fourth

	laboratory experiments				
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Cholinergic system	Knowledge and Application	4	Fifth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Continue Cholinergic system	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Adrenergic system	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Continue Adrenergic system	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Principal of antimicrobial therapy β - lactam and other cell wall synthesis inhibitor antibiotics	Knowledge and Application	4	Ninth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Continue β -lactam and other cell wall synthesis inhibitor antibiotics	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Quinolones, folate antagonists, and urinary tract antiseptics	Knowledge and Application	4	eleventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Protein synthesis inhibitors	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Continue protein synthesis inhibitors. Antimycobacterial Drugs	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Antifungal drugs. Antiprotozoal drugs	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	Anthelmintic drugs. Antiviral drugs	Knowledge and Application	4	fifteenth

and written exams	conducting laboratory experiments				
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11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks

- Final exam: 60 marks

12. Learning and teaching resources

Lippincott Illustrated Reviews Pharmacology 7th Edition, 2019	Required textbooks (curriculum books, if available)
Goodman & Gilman's The Pharmacological Basis of Therapeutics 13th edition 2018. - Basic & Clinical Pharmacology 14th Edition 2018 - Rang & Dale's Pharmacology 9th Edition 2020	Main references (sources)
British National Formulary	Recommended books and references (scientific journals and reports...)
FDA	Electronic references and websites

1. Course Name:
AChemistryand AThiefdBecause
2. Course code:
PHT 213
3. Semester/Year:
AFor the chaptertoSecond / Level Two2025-2026
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30 hoursMy work +30Theory hour / Number of units: 4
7. Name of the course coordinator
Name: Sadeem Zaki Saleh Qaddouri sadeem.zeki@ntu.edu.iq Email address
8. Course Objectives:
To enable an understanding of drug mechanisms of action at the molecular level, and the role of medicinal chemistry in the discovery and development of synthetic therapeutic agents. It also enables students to understand the concept of the structure-activity relationship and its application in designSynthesis of new compounds or derivatives
9. Teaching and learning strategy:
Brainstorming strategy - Teamwork strategy Discussion strategy - Case study strategy - Inductive teaching strategy - Concept mapping strategy - On-the-job training strategy - Self-learning strategy - E-learning strategy - Study strategy - Inference strategy - Spaced practice strategy - Strategy of switching ideas - Strategy of providing examples

10. Course Structure					
Evaluation Method	Teaching method	Unit/Topic Name	Required learning outcomes	Hours	Week
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	• Drug distribution. • Preparation and standardization of 0.1N KMnO₄ (known sample).	Knowledge and Application	4	the first
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Acid- base properties. • Preparation and standardization of 0.1N KMnO₄ (quiz and unknown).	Knowledge and Application	4	the second
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Statistical prediction of pharmacological activity. • Assay of hydrogen peroxide solution (known sample).	Knowledge and Application	4	the third
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	QSAR models. • Assay of hydrogen peroxide solution (quiz and unknown sample).	Knowledge and Application	4	Fourth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Molecular modeling (Computer aided (drug design)). • Assay of ferrous sulfate (known sample).	Knowledge and Application	4	Fifth

Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Drug Receptor interaction: force involved. • Assay of ferrous sulfate (unknown sample).	Knowledge and Application	4	Sixth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Steric features of drugs. • Preparation and standardization of 0.1Na ₂ S ₂ O ₄ solution (known sample	Knowledge and Application	4	Seventh
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Optical isomerism • Preparation and standardization of 0.1Na ₂ S ₂ O ₄ solution (quiz and unknown sample).	Knowledge and Application	4	Eighth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	biological activity. • Assay of copper sulfate (known sample	Knowledge and Application	4	Ninth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Calculated conformation. • Assay of copper sulfate (unknown sample).	Knowledge and Application	4	tenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides,	Three-dimensional quantitative structure activity	Knowledge and Application	4	eleventh

and written exams	conducting laboratory experiments	relationships and databases. • Assay of Chlorinated Lime (known sample).			
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Isosterism. • Assay of Chlorinated Lime (quiz and (unknown).	Knowledge and Application	4	twelfth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Isosterism. • Assay of Chlorinated Lime (quiz and (unknown).	Knowledge and Application	4	thirteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	General pathways of drug metabolism: Sites of drug biotransformation; Role of cytochrome P450 monooxygenases in oxidative biotransformation; Oxidative reactions; Reductive reactions; Hydrolytic reactions; Phase II reactions. Preparation and assay of Lugol's Solution (quiz and unknown).	Knowledge and Application	4	fourteenth
Reports, assignments, written, oral, and written exams	Whiteboard , PowerPoint slides, conducting laboratory experiments	Factors Affecting drug metabolism Assay of Alum (unknown sample).	Knowledge and Application	4	fifteenth

	experiments				
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11. Course Evaluation

The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily oral exams, and monthly exams.

- Midterm exam: 40 marks

- Final exam: 60 marks

12. Learning and teaching resources

Wilson and Gisvold; Textbook of Organic medicinal and pharmaceutical chemistry; Delgado JN, Remers WA, (eds); latest edition	Required textbooks (curriculum books, if available)
Organic Chemistry by McCurry; 5th ed.	Main references (sources)
Handbook for Practical Pharmaceutical Chemistry Adopted by the Department	Recommended books and references (scientific journals and reports...)
	Electronic references and websites