

Ministry of Higher Education and Scientific Research
Scientific Supervision and Scientific Evaluation Apparatus
Directorate of Quality Assurance and Academic Accreditation
Accreditation Department



Academic Program and Course Description Guide

2024

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

Academic Program Specification Form for The Academic Year 2024

University: Northern Technical University

Faculty/Institute: Al-dour Technical Institute

Department: Medical Laboratory Technica's

Name of the academic or professional program: Technical diploma in Medical Laboratory Technica's

Name of the final certificate: Technical diploma in Medical Laboratory Technica's

Academic system: Curriculum system

File preparation date: 9 - 9 - 2024

File filling date: 24 - 9 - 2024

Signature



The name of the head of the department
Assist. Lec. Asmaa A. Mohammed

Date:

Signature



Dean's Assistant For Scientific Affairs
Assist. Prof. Dr. Hanan Shahb Ahmad

Date:

Check the file by

Quality Assurance and University Performance Division

Name of the director of the Quality Assurance and University Performance Division:

Signature



Lec. Hayder Ali Mohsen

Date:



Dean's endorsement

Assist. Prof. Dr. Maha Elttayef Jasim

Vision of program
The department seeks to prepare technicians specialized in medical tests and medical laboratory management, who are prepared to work in government health departments and benefit from them at the scientific and applied levels.
Program message
1. Preparing specialized technical, scientific and professional cadres within the field of laboratory work who are able to interact and keep pace with the development of scientific research and with a high level of responsibility towards the local and international community by providing medical services within laboratory specialization with all honesty and sincerity. 2. Working to refine the student's scientific and cognitive talents and benefit from them within laboratory specialization through training courses, workshops, and scientific visits to advanced health and educational institutions.
Program Goals
The department aims to graduate professional technical staff who have the ability to work in medical laboratories and perform simple routine laboratory tests and general biochemical examinations within various body fluids, as well as laboratory management and how to deal with and maintain laboratory equipment.
Program accreditation
The department is seeking programmatic accreditation.
External influences
Government and private sector

Program structure				
Program structure	Number of courses	Study unit	Percentage	Notes*
Foundation requirements	8	18	22.9%	Optional - Basic
Institute requirements	5	14	14.2%	Basic
Department requirements	22	64	62.9%	Optional - Basic
Summer training		Satisfied		Basic
Others	-	-	-	-

Program description				
Year / Level	Code of the course	Name of the course	Approved hours	
			Theoretical	Practical
First Level	MLT115	Analytical chemistry	1	2
	MLT113	Histology and cytological techniques	1	2
	MLT114	Medical laboratory instruments	1	2
	MLT118	Histology	1	2
	TID108	Safety in Labs. And workshop	2	-
	MLT117	Basic of nursing	1	2
	NTU102	Computer	1	1
	NTU101	English language	2	-
	NTU100	Human rights and democracy	2	-
	NTU103	Arabic language	2	-
	MLT119	Organic chemistry	1	2
	MLT112	Medical laboratory techniques	1	2
	TID109	Medical terminology	2	-
	MLT120	First aid	2	-
	MLT116	Blood transfusion	1	2
	TID106	Physiology	2	2
	TID110	Anatomy	2	2
	NTU104	Sport	1	1

Program description				
Year / Level	Code of the course	Name of the course	Code of the course	
			Theoretical	Practical
Second Level	MLT208	Biochemistry	١	٢
	MLT214	Basic of immunity	١	٢
	MLT206	Protozoa	١	٢
	MLT210	Basics of bacteriology	١	٢
	MLT209	Viruses	١	٢
	MLT205	Introduction to hematology	١	٢
	NTU204	Ethics	٢	-
	TID202	Statistics	٢	-
	NTU203	The crimes of the Baath regime in Iraq	٢	-
	MLT211	Clinical biochemistry	١	٢
	MLT216	Immunity and pathogenesis	١	٢
	MLT213	Worms	١	٢
	MLT210	Pathogenic bacteria	١	٢
	MLT212	Medical mycology	١	٢
	MLT217	Cellular blood diseases	١	٢
	NTU202	Arabic language	٢	-
	MLT215	Research project	٢	-

Expected learning outcomes of the program	
Knowledge	
1. Sufficient knowledge of most of the tests conducted in the laboratory, such as biochemical, immunological, and histological tests, and tests to detect various microorganisms such as bacteria, viruses, and parasites of various types, as well as learning about the physiology and anatomy of various body organs. 2. Correct and safe handling of chemicals, laboratory equipment and laboratory tools used within medical laboratories. 3. Learn safety procedures to avoid risks that may occur during laboratory work, as well as first aid and methods of applying it in emergency situations. 4. Correct and safe handling of various samples received into the medical laboratory to obtain the best results	
Skills	
1. Identify the various types of laboratory devices and equipment, how they work, and methods of maintaining them for the purpose of sustaining them for long periods. 2. Learn how to manage medical laboratories in a manner consistent with the accuracy of results and the speed of their completion, which ultimately benefits the patient's health. 3. Identify the methods and mechanisms for collecting various samples and ways to preserve them until specific tests are performed on them. 4. The ability to organize laboratory work and how to distribute tasks among individuals and departments of the medical laboratory.	
Values	
1. Enriching the student with the concepts and foundations of medical laboratory management. 2. Analyzing the problems and obstacles facing laboratory work and how to avoid their occurrence as much as possible. 3. Honesty in conducting tests and confirming information about laboratory samples and the safety of laboratory equipment to ensure obtaining accurate results. 4. Humane treatment of special medical cases in a way that preserves their dignity.	

Teaching and learning strategies						
1. Explaining the scientific course in detail, using different means of explanation. 2. Seminars focusing on the latest scientific developments related to the course. 3. Field visits to medical institutions for the purpose of examining various disease cases and laboratory methods for diagnosing them.						
Evaluation methods						
1. Exams (weekly, monthly, daily, and the end-of-year exam), both theoretical and practical. 2. Providing monthly reports in various academic courses 3. Summer training						
Education Institution						
Faculty members						
Academic Degree	Specialization		Special requirements /skills		Faculty members	
	Major	Specialization			Staff	Lecturer
Professor	Biology	Physiology			1	
Assistant Professor	Biology	Physiology			1	
Assistant Professor	Administration and economics	Business management			1	
Lecturer	Chemistry	Clinical Chemistry			1	
Lecturer	Biology	Physiology			1	
Lecturer	Biology	Molecular genetics			1	
Assistant Lecturer	Biology	Physiology			1	
Assistant Lecturer	Biology	Microbiology			2	
Assistant Lecturer	Administration and economics	Business management			1	
Assistant Lecturer	Information	–			1	

Professional development
Orienting new faculty members
Participation in courses focusing on the integrity of the Arabic language, the nature of administrative work, and specialized courses within the field of laboratory work and the research field, in addition to courses on methods and validity of teaching.
Professional development for faculty members
1. Participation in local and international conferences 2. Participation in applied courses and workshops within the department's specializations
Acceptance standard
Students graduating from middle school are accepted through the central admission system on the basis of: 1. Branch (scientific) 2. Average score

The most important sources of information about the program
1. The website of the university and institute 2. University guide 3. Central Library 4. References and sources for the institute and the department 5. The World Wide Web
Program development plan
1. Cooperation with various local and international universities 2. Updating the curriculum for courses in line with scientific development 3. Cooperation between local universities through postgraduate student's discussions 4. Cooperation with the Ministry of Health departments by supplying medical and technical personnel to teach in the department

Program skills chart															
				Learning outcomes required from the program											
Year / Level	Code of course	Name of course	Basic or Optional	Knowledge				Skills				Values			
				1A	2A	3A	4A	1B	2B	3B	4B	1C	2C	3C	4C
First Level	MLT115	Analytical chemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT113	Histology and cytological techniques	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT114	Medical laboratory instruments	Basic		✓	✓		✓	✓		✓	✓	✓		
	MLT118	Histology	Basic	✓			✓				✓		✓		
	TID108	Safety in Labs. And workshop	Basic		✓	✓	✓			✓	✓	✓			
	MLT117	Basic of nursing	Basic			✓		✓					✓		✓

	NTU102	Computer	Basic						✓			✓	✓		
	NTU101	English language	Basic												
	NTU100	Human rights and democracy	Basic												✓
	NTU103	Arabic language	Basic												
	MLT119	Organic chemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT112	Medical laboratory techniques	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TID109	Medical terminology	Basic												
	MLT120	First aid	Optional	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT116	Blood transfusion	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TID106	Physiology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TID110	Anatomy	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NTU104	Sport	Optional												

Program skills chart															
				Learning outcomes required from the program											
Year / Level	Code of course	Name of course	Basic or Optional	Knowledge				Skills				Values			
				1A	2A	3A	4A	1B	2B	3B	4B	1C	2C	3C	4C
Second Level	MLT208	Biochemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT214	Basic of immunity	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT206	Protozoa	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT210	Basics of bacteriology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT209	Viruses	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT205	Introduction to hematology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NTU204	Ethics	Basic									✓	✓	✓	✓
	TID202	Statistics	Basic								✓	✓			

	NTU203	The crimes of the Baath regime in Iraq	Basic												✓
	MLT211	Clinical biochemistry	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT216	Immunity and pathogenesis	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT213	Worms	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT210	Pathogenic bacteria	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT212	Medical mycology	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT217	Cellular blood diseases	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NTU202	Arabic language	Basic												
	MLT215	Research project	Basic	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Laboratory Equipment Course Description Form

1. Course Name					
Laboratory Equipment					
2. Course Code					
MLT114					
3. Semester / Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Raihan Jabbar Jasim raihan.jj@ntu.edq.iq					
8. Course Objectives					
Course Objectives			Cover and understand the various tools and devices used in medical laboratories		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Types of microscope and its uses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Light microscopy, working principle and its parts	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Third	3	Microscope maintenance How to maintain its durability	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Electronic scale, types and parts	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	The principle of operation and operation of the electronic balance	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Electronic Scale Maintenance	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Definition of a photometer	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Light and wave length	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Beer-Lambert's Law	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Optical spectrometer	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Eleventh	3	The working principle of the optical spectrometer device	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Types of optical spectrometers	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Parts of the optical spectrometer	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Maintenance of the optical spectrometer	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Flame Photometer	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

Daily, monthly and final exams as well as weekly reports

12. Learning and Teaching Resources

Textbooks

Main references

Scientific research

Scientific resources within the Internet

Fundamentals of Nursing Course Description Form

1. Course Name					
Fundamentals of Nursing					
2. Course Code					
7ML11					
3. Semester / Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Tagreid Mustafa Zaiyn tagreid.mz@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Identify the basics of nursing, first aid, laboratory and professional safety in the field of nursing and ways to deal with the patient during his presence in medical laboratories		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to nursing and the need for it, the nursing process - stages of the nursing process.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Medical examination and methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Vital signs – temperature – the body's homeostasis – how to measure them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	The pulse - its definition - the factors affecting it - how to measure it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Breathing - its definition - factors affecting it - how to calculate it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Blood pressure - definition - factors affecting it - cases of low and high blood pressure - how to measure pressure	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Laboratory health and safety - definition - foundations - the most important factors affecting it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	The most important factors that affect the health of laboratory workers - natural factors - the most important diseases caused by them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Ninth	3	Chemical agents - the most important diseases and conditions caused by them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Psychological factors - the most important diseases and conditions caused by them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Biological factors - their types - their impact on laboratory workers - the most important diseases caused by them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	First aid - definition - paramedic and qualifications - principles of first aid	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Ambulance for wounds and bleeding	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Ambulance burns - ambulance types of fractures	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Artificial respiration and suffocation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

Daily, monthly and final exams as well as weekly reports

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Main references
Scientific research
Scientific resources within the Internet

First Aid Course Description Form

1. Course Name					
First aid					
2. Course Code					
MLT120					
3. Semester/Level					
Second /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Asmaa Abdulhaq Muhammad asmaa.am@ntu.edu.iq					
8. Course Objectives					
Course Objectives		- Ability to take whatever it takes to sustain life - The student's knowledge of first aid nursing and how to rescue emergency cases before transferring them to the hospital			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to First Aid and EMS Emergency Medicine System	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	EMS System Components , Administration, Policy, Organization and Equipment	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	First aid kit, look, feel and contents Airway and breathing, improvised uses, workplace first aid kit, historical first aid kits.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Ambulance, transport, work with hospital staff, work with training of public safety agencies.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	The emotional side of emergency care, death and dying, dealing with patient and family members Primary care for the dying patient, and critically ill patients.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Physical signs of death, hypothetical signs of death, final signs of death, medical examinations	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Anxiety, pain, fear, hostility, depression, mental health dependence, receiving bad news	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eighth	3	Infectious diseases (modes of transmission), risk reduction and prevention regime. Scene safety and personal protection.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Trauma, motor trauma. Bleeding types, causes and treatment.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Trauma types, causes and management.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Wounds, soft tissue injuries, eye injuries, facial and throat injuries.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Chest injuries, abdominal injuries, head and spine injuries.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Heart structure, circulatory function and atherosclerosis.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Heart attack, signs and symptoms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Physical signs of cardiogenic shock, sudden death and congestive heart failure	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

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Histology Course Description Form

1. Course Name					
Histology					
2. Course Code					
MLT118					
3. Semester /Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Mustafa Talib Khalf mustafa.tk@ntu.edu.iq					
8. Course Objectives					
Course Objectives			• Give a general idea of the general anatomy of the human body, see the structure of the organs and study all their constituent histological structures under a microscope.		
9. Teaching and Learning Strategies					
• Adequate explanation of the course • Daily Tests • Student groups • Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Define some terms that deal with histology and cytology,	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Microscope and its parts	Explanation of the lecture with the presence	Classroom and laboratory	Exams

			of means of illustration and practical application		
Third	3	Cell shapes	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Simple epithelial tissue	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Stratified epithelial tissue	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Connective tissue	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Soft connective tissue	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Dense connective tissue	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Specialized connective tissue – blood	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Specialized connective tissue - cartilage	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Specialized connective tissue – hard bone	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Specialized connective tissue – spongy bone	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Muscle tissue – heart muscle	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Muscle tissue – skeletal muscle	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Muscle tissue – smooth muscle	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

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Anatomy Course Description Form

1. Course Name					
Anatomy					
2. Course Code					
TID110					
3. Semester/Level					
Second /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 / 4					
7. Course administrator name					
Dr. Ansam Hussein Ali ansam.ha@ntu.edu.iq					
8. Course Objectives					
Course Objectives			The student's knowledge of the anatomy of the human body and organs, as well as knowledge of the relationship between them.		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Anatomical trends and body surfaces	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Anatomy of the heart, its location according to the chest wall and the number of shades	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Anatomy of the lungs, its location according to the chest wall and the number of ribs	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Abdominal anatomy and dividing the abdomen vertically and horizontally	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Anatomy of the stomach - its sections and its relationship to other organs	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Anatomy of the liver and spleen and their location according to bodily surfaces	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Anatomy of the small intestine and its relationship to other organs in the abdominal cavity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Anatomy of the cecum and its location within the abdominal cavity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Bile cyst anatomy and location	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Anatomy of the uterus and its location within the pelvic cavity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Skeleton, Skull and Spine	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Shoulder bones, plank and collarbone	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Forearm bone and parts	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Hand and thigh bones	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Pelvic bones and lower limbs	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Main references

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Course Description Form Laboratory Techniques and Quality Control

1. Course Name					
Laboratory techniques and quality control					
2. Course Code					
MLT112					
3. Semester / Level					
Second/First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Raihan Jabbar Jasim raihan.jj@ntu.edq.iq					
8. Course Objectives					
Course Objectives			- Identify the different laboratory techniques for detecting various diseases within different body fluids - Identify the basics of quality control		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to laboratory techniques, including the basics of testing techniques for diagnosing various diseases, how to manage the laboratory, prepare samples, classify and teach	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

		them, and occupational safety			
Second	3	Definition of microorganisms, their composition, classification and ways of living	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	The mechanism of action of bacteria in terms of metabolism, nutrition, reproduction and growth	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Sterilization methods and tools used in it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Methods of detecting bacteria through the use of coloring with special chemical colorants	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Methods of detecting bacteria through culture in different culture media	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Bacterial culture methods depending on the type of culture medium and the type of bacteria	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Different methods of collecting bacterial samples	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Methods of preserving bacterial samples and how to deliver them to the laboratory	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Tenth	3	Introduction to blood and its components	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Methods of preserving blood samples and anticoagulants	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Definition of hemoglobin Hb and the different ways to determine its levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Definition of the volume of compressed blood cells PCV and the different methods for determining their levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Definition of ESR and different methods for determining ESR levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Definition of white blood cells and the different ways to detect their levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

Daily, monthly and final exams as well as weekly reports

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Main references

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Computer Course Description Form

1. Course Name					
Computer					
2. Course Code					
NTU102					
3. Semester / Level					
First / First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Abo Dhar Saad Mohsen abuther.sm@ntu.edu.iq					
8. Course Objectives					
Course Objectives			The student is familiar with the different computer applications and can distinguish between the types of software that can be dealt with		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	The concept of networks and their types - the concept of the Internet and its operation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Description of the home screen and its components	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

		-How to connect to the World Wide Web	illustration and practical application		
Third	3	How to take advantage of popular search engines such as Google	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Learn how to search for information and how to access it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Excel program to identify the concept of the program - benefits - specifications, features and methods of operation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Learn about the home screen and its components and contain various menus and active tools	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	The concept of the cell - the types of basic data and how to enter it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	How to save a work page - Close the program and close the file	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Using some functions provided by the program such as count, SQRT, Ave, sum, Min, Max and other	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

		relevant useful statistical functions			
Tenth	3	Learn about the editing process provided by the software and	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	How to copy data or transfer data and learn about the concept of copying calculations as well as the concept of relative cells and absolute cells	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Control cell width – change its style and theme through the use of formatting tools	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Word program to identify the concept of the program - its benefits - specifications, features and methods of operation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Various Word applications	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	SPSS Statistical Program - Program Concept and Operation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

Daily, monthly and final exams as well as weekly reports

12. Learning and Teaching Resources

Textbooks , Main references , Scientific resources within the Internet

Human Rights and Democracy Course Description Form

1. Course Name					
Human Rights and Democracy					
2. Course Code					
MLT114					
3. Semester / Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Adnan Abdulkarim Khalil adnan.akh@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Identify the freedoms due to members of society and the role of each individual in terms of rights and duties, as well as identify the various state policies		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	2	The concept of freedom and democracy	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Second	2	Rights and duties of the citizen	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Third	2	The concept of the state and government	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams

Fourth	2	Intellectual and cultural freedom	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Fifth	2	Economic and social freedom	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Sixth	2	Right to vote and participate in elections	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Seventh	2	Freedom to form trade unions and associations	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Eighth	2	Freedom of social security and health care	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Ninth	2	Democracy, its goals and ways to achieve it	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Tenth	2	Forms of democracy	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Eleventh	2	Democracy in Iraq	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Twelfth	2	People's participation in legislative work	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Thirteenth	2	The referendum and its types and causes	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Fourteenth	2	Popular referendum and popular solution	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams
Fifteenth	2	Election of the Iraqi Transitional National Assembly	Explanation of the lecture with the presence of means of illustration	Classroom and laboratory	Exams

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Sport Course Description Form

1. Course Name					
Sport					
2. Course Code					
NTU104					
3. Semester/Level					
Second /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Ali Yahya Ahmad ali.ya@ntu.edu.iq					
8. Course Objectives					
Course Objectives		The course aims to provide the student with the concept of exercises and their historical development, introduce him to the different exercise schools, introduce him to the original and derived exercise situations and special situations, develop the basic motor skills of exercise, as well as identify some types of sports, their laws and benefits.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	2	Introduction to sport and its benefits	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams

Second	2	Terms in the anatomy of the human body	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Third	2	The skeletal system of the human body	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Fourth	2	Muscular system of the human body	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Fifth	2	The nervous system of the human body	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Sixth	2	Sports Medicine and Sports Injuries	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Seventh	2	First aid for sports injuries	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Eighth	2	Fatigue and ways to treat it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Ninth	2	Ethics and sportsmanship	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams

Tenth	2	Football Laws	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Eleventh	2	Basketball Laws	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Twelfth	2	Volleyball Laws	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Thirteenth	2	Tennis Laws	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Fourteenth	2	Swimming radiance and its benefits	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
Fifteenth	2	Athletes of the arena and the field and its laws	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and sports hall	Exams
11. Course Evaluation					
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12. Learning and Teaching Resources					
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Laboratory and Workshop Safety Course Description Form

1. Course Name					
Safety of laboratories and workshops					
2. Course Code					
TID108					
3. Semester/Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Tagreid Mustafa Zaiyn tagreid.mz@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Identify the rules of safety and security and the ability to deal with sources of hazards in laboratories and workshops		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Basic equipment to be available in the laboratory (laboratory arrangements)	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Safety precautions when handling laboratory	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

		instruments, chemicals	illustration and practical application		
Third	3	Safety precautions upon completion of laboratory work	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Fires and their types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
fifth	3	Fire extinguishing means	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Personal Protective Equipment	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Chemical hazards - and how to deal with them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Radiological hazards	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Biological hazards	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Laboratory (medical) waste disposal	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Eleventh	3	First aid in laboratories	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Use of warning signs in the laboratory	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Environmental factors and their impact on safety and health (light, noise, heat, humidity)	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Safety in Field Studies	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Chemical and medical storage methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Main references

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Course Description Form for Micro techniques

1. Course Name					
Micro techniques					
2. Course Code					
MLT113					
3. Semester/Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Mustafa Taleb Khalaf mustafa.tk@ntu.edu.iq					
8. Course Objectives					
Course Objectives			• Give a general idea of how to prepare permanent tissue segments for different organs of the body		
9. Teaching and Learning Strategies					
• Adequate explanation of the course • Daily Tests • Student groups • Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Define some terms that deal with histology and cytology,	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Sample collection methods	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Third	3	Steps for the preparation of tissues for the purpose of study, fixation and fixatives	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Routine and special fixatives	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Sample washing solutions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Drying and types of dryers	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Clearing	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Infiltration and embedding medium	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Casting and Trimming	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Sectioning	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Eleventh	3	Microtomes	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Staining	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Routine colorants for tissue slides	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Special colorants for tissue slides	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Microscopy	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Main references

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Arabic Course Description Form

1. Course Name					
Arabic Language					
2. Course Code					
NTU103					
3. Semester / Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Dr. Layla Talal Ahmad layla.ta@ntu.edu.iq					
8. Course Objectives					
Course Objectives			It aims to enable students with Arabic language skills and issues at all levels: phonetic, morphological, grammatical, semantic, stylistic, and written		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to linguistic errors	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Second	3	Rules for writing an elongated and	Explanation of the lecture with the presence of means of	Classroom	Exams

		compartment thousand	illustration and practical application		
Third	3	Al-Daad and Al-Zaa	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fourth	3	Hamza writing	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifth	3	Punctuation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Sixth	3	Noun and verb and differentiate between them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Seventh	3	Effects	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eighth	3	Number	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Ninth	3	Applications of common linguistic errors	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Tenth	3	Noon and Tanween	Explanation of the lecture with the presence of means of	Classroom	Exams

			illustration and practical application		
Eleventh	3	Formal aspects of administrative discourse	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Twelfth	3	Meanings of prepositions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Thirteenth	3	Solar and lunar letters	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fourteenth	3	T tied and long	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifteenth	3	T Open	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

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Physiology Course Description Form

1. Course Name					
Physiology					
2. Course Code					
TID106					
3. Semester / Level					
Second /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
60 / 4					
7. Course administrator name					
Dr. Ansam Hussein Ali					
Ansam.ha@ntu.edu.iq					
8. Course Objectives					
Course Objectives			The student's knowledge of the function of each organ in the human body and its role in the balance of the body		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Blood – its components – blood swab – blood volume – red blood cells – number of red blood cells – shape – method of counting them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Leukocytes - their number - types - the normal proportions of each type - the work of white blood cells.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Blood clotting – blood acidity – blood discs and their function.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Anemia – types of anemia.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Jaundice - its types - causes of jaundice - erythrocyte decomposition.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Cardiovascular system – Overview of the anatomy of the circulatory system – Anatomy of the heart – Heart valves.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	The location of the heart relative to the surface of the living body - the heart as a pump - cardiac subtraction.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	ECG – cardiac sounds – cardiac valve areas – natural sounds.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Ninth	3	Arterial blood pressure – silent blood flow – atmospheric pressure – blood pressure measurement.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Factors affecting blood pressure - high - low - central control of blood vessels - measurement of high blood pressure - low.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Respiratory system – respiratory muscles – diaphragm – diaphragm function relative to the lungs.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Respiratory volumes – spare volume of exhalation – reserve volume of inhalation – vital capacity – factors affecting vital capacity.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Diseases that affect the effectiveness of respiratory volumes – nasal function.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Pulmonary alveoli function	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Digestive system – mouth – pharynx.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Analytical Chemistry Course Description Form

1. Course Name					
Analytical Chemistry					
2. Course Code					
MLT115					
3. Semester / Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Mohand Habib Ahmad mohaned.ha@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Give a general idea of organic and biochemical compounds, which increases the student's knowledge and ability to conduct experiments and various chemical reactions			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	atoms, elements, contamination of radioactive isomers with radioactive isomers, contamination with elements.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	The relationship between atoms, molecules and energy, according to the theory of the new atom. (Debroguli's equation). Article and classification.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Chemical bonds, covalent, ionic, coordination, hydrogen	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Analysis methods. Qualitative, quantitative and statistical methods of quantitative analysis, errors in quantitative analysis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Methods of expressing the concentration of solution, molar solution, normal solution	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Preparation of the molar solution, dilution, questions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Percentage and ppm composition	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Chemical balance, ionization, water constant (PH and POH)	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Ninth	3	Ionization of weak electrolytes. Calculate the pH of weak acids and weak bases.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Neutral solutions and classification	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Calculation of neutral solutions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Volumetric analysis, classification, standard solution, examples.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Neutralization, oxidation, and reduction reactions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Reagent theory, interaction, properties, examples.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Principles of colorimetry	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Organic Chemistry Course Description Form

1. Course Name					
Organic Chemistry					
2. Course Code					
MLT119					
3. Semester/Level					
Second /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Abeer Salih Hasan abeer.sa@ntu.edu.iq					
8. Course Objectives					
Course Objectives			• Give a general idea of organic and biochemical compounds, which increases the student's knowledge and ability to conduct experiments and various chemical reactions		
9. Teaching and Learning Strategies					
• Adequate explanation of the course • Daily Tests • Student groups • Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to Organic Chemistry Organic compounds found in nature	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Contamination with organic compounds	Explanation of the lecture with the presence	Classroom and laboratory	Exams

			of means of illustration and practical application		
Third	3	Hydrocarbons, classification, alkanes, alkenes, alkynes, benzene example, nomenclature, properties	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Alcohols, classification and properties	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Aldehydes, preparation, classification, properties	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Ketones, classification, properties, preparation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Ketone preparation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Carboxylic acids, classification, properties	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Classification of carboxylic acids	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Classification of carboxylic acids	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Properties of carboxylic acids	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Physical properties of organic compounds	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Separation of organic compounds	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Purification of organic compounds. Filtration and extraction	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Melting points and boiling points	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Medical Terminology Course Description Form

1. Course Name					
Medical terminology					
2. Course Code					
TID109					
3. Semester / Level					
Second /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Ghofran luaay Naji ghofranluaay95@gmail.com					
8. Course Objectives					
Course Objectives		The student's knowledge of comprehensive and detailed information about the terminology used to describe the organs and structures of the human body, the different types of tests and their medical abbreviations, and enable him to understand the bulk of the discussions in English for any topic within the systematic lectures, seminars and external conferences.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to Medical Terminology	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Second	3	Root	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Prefix	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Subsequent	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Mobile Splicing Rules	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Connecting forms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Medical terminology and pathology	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Terminology of the heart, circulation and nervous system	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Gastrointestinal and urinary terminology	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Tenth	3	Lymphatic system terminology	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Respiratory terminology	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Teeth and maxillofacial	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Terms of conditions and trends	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Musculoskeletal terminology	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Terminology of the skeletal system	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Blood Transfusion Course Description Form

1. Course Name					
Blood transfusion					
2. Course Code					
MLT116					
3. Semester / Level					
First /First					
4. Description preparation date					
9 / 9 / 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Huthaifa.A.Mansour huthaifa.assim@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Identify the characteristics , sections and importance of blood bank and how to perform blood transfusions			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to Blood Transfusions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Blood components, blood collection, donor selection,	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

		physiological examination and collection time.	illustration and practical application		
Third	3	Blood type, ABO system , Rh factor and Lewis system	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Blood type classification (long and short)	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Direct and indirect comb blood test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	The process of cross-matching testing and reporting and recording of results.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	The importance of blood transfusion and its relationship to blood diseases	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Care of pregnant women and leukemia in infants	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Division of blood, methods of use and division.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Tenth	3	Blood components after storage and anticoagulants	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Disadvantages of blood transfusion	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Anticoagulants, their types, properties, methods of preparation and storage	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Education of test samples and methods of recording the history of medical conditions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Quality control, tools, people, and method	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Blood transfusion tools and fluid administration.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Statistics Course Description Form

1. Course Name					
Statistics					
2. Course Code					
TID202					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (College) / Number of Units (College)					
2 / 30					
7. Course administrator name					
Mustafa Talib Khalf mustafa.tk@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Ability to deal with various statistical methods and their vital applications within the field of medical laboratories.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Basic concepts in mathematics	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Second	3	Division equation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Third	3	Purpose and continuity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

Fourth	3	Biostatistics	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifth	3	Statistical concepts	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Sixth	3	The concept of probability	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Seventh	3	Calculation and counting techniques	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eighth	3	Probability distribution	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Ninth	3	Frequency distribution table	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Tenth	3	Measures of central tendency	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eleventh	3	Methods of data classification and tabulation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Twelfth	3	Derivative	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Thirteenth	3	Derivative of Trigonometric Functions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fourteenth	3	Integration	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifteenth	3	Deviation and contrast	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

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Professional Ethics Course Description Form

1. Course Name					
Professional Ethics					
2. Course Code					
NTU204					
3. Semester / Level					
First / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Adnan Abdulkarim Khalil adnan.akh@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Identify the basic ethics of the profession for workers in medical specialties and qualify the graduate to deal professionally with his profession and achieve compatibility with himself and his professional environment (the patient, his companions, health workers and medical devices).		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	- Principles of professional ethics in the stages of civilizational developments.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

		- Principles of professional ethics in Arab and Islamic civilization. - Etiquette of dealing with patients in hospitals since ancient times until now.			
Second	3	Professional behavior: definition, concept, practical applications, relationship between employees and their superiors.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Third	3	Basic ethics of the profession - Characteristics of professional ethics as a guide and guide for behavior. - How to employ professional ethics from the position of the guide to the behavior of the individual and his emotions and his ability to make the appropriate decision. -Characteristics and qualities of health workers... - Appearance, behavior and commitment. Moral and legal rights of the patient	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fourth	3	Behavioral / human - interactive - collective patterns. Its definition, nature, motives, interpretations, and factors affecting it.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifth	3	Communication/linguistic and non-linguistic styles - Definition, types, effects, design of successful communication methods. - How communication styles affect behavior, listening and listening, and how to practice it with practical examples.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Sixth	3	Behavioral attitudes and tendencies.	Explanation of the lecture with the presence of means	Classroom	Exams

		- Definition, classification, factors affecting them, methods of measurement.	of illustration and practical application		
Seventh	3	Values, customs and traditions. - Definition, classification, factors affecting them, methods of measurement.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eighth	3	Personality styles and how to deal with them. - Definition of personality - types - relationship to the profession. - Technician's personality and manifestations	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Ninth	3	Conditions for improving mental health - Definition, factors affecting it, prevention of mental illness, the role of mental health in professional preparation.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Tenth	3	Conditions of professional compatibility and associated employment relationship. - Concept, conditions, poor professional availability.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eleventh	3	Job description of the graduate's work	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

Twelfth	3	- Behavioral dealing with the patient. - Receiving the patient, dealing with him, gaining his trust and maintaining the secrets of the profession. - Scheduling the requirements of the required procedure. - Maintaining the patient's needs.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Thirteenth	3	Behavioral handling of medical devices and equipment. - Daily access to devices, tools, solutions and other requirements and preparing them for daily work, sustaining, maintaining and maintaining them. - Preparing the necessary medicines for work and good disposition of them.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

Fourteenth	3	Occupational Safety -Prevention of work hazards and accidents. - Prevention of the risks of bacterial, toxic and radioactive contamination. - Prevention of thoughts of infection with infectious and communicable diseases. - Avoid wrong practices in the field of work.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifteenth	3	Applications in professional conduct. - Field visits to hospitals and other health institutions to view and exchange experience and information.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

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Fundamentals of Bacteriology Course Description Form

1. Course Name					
Fundamentals of Bacteriology					
2. Course Code					
MLT210					
3. Semester/Level					
First / Second					
4. Description preparation date					
9/9/2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Mohammad Hasan Mohammad mohammed.hasan@ntu.edu.iq					
8. Course Objectives					
Course Objectives		It aims to provide a broad introduction to bacteriology, classification of bacteria, bacterial cell structure and mode of operation, bacterial growth and methods of estimation and factors affecting it, metabolism, genetics and the biological and economic importance of bacteria.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to Bacteriology	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	The structure and shape of bacteria, the classification of bacteria, the chemical composition and secondary structure of the bacterial cell.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Physiology of bacteria, growth requirements, types of nutrition and factors affecting growth.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Sterilization and disinfection . Classification of sterilization, physical and chemical methods.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Tools, equipment and devices used in the diagnosis of bacteria	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Infections, sources of infection, virulence, toxins and enzymes related to bacteria	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Cultivation media and their types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Chemical tests for the detection of bacteria	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Ninth	3	Anaerobic bacteria	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
X	3	Clostridium	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Aerobic bacteria	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	staphylococcus, general characteristics, toxin production, enzyme, immunomodulator, Allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	streptococci, general characteristics, toxin production, enzyme, immunomodulator, Allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Bacilli (Anthrax), general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Bordetella and Haemophilus, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Immunology Fundamentals Course Description Form

1. Course Name					
Fundamentals of Immunology					
2. Course Code					
MT214					
3. Semester/Level					
First / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Dr. Hanan Shahab Ahmad hanan.sha@ntu.edu.iq					
8. Course Objectives					
Course Objectives			The course aims to clarify the basic elements and terminology used in immunology, with a focus on the important elements in the defense of the body: natural immunity: chemical, biochemical, physiological and cellular immune barriers with emphasis on antivirals.		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Definition of immunity, its types and its relationship to other natural and biological medicine sciences	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Natural immunity and components of the immune system, factors affecting immunity and natural immune mechanisms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Acquired immunity and its types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Congenital immunity and its types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	(Immunization) Vaccines and their types, their importance, how to prepare the vaccine schedule, with duration. Require the student to prepare a report on vaccines.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Complement system, definition. Chemical-physical properties and the proportion of their components in the body	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Antigens, types, sizes and methods of detection	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eighth	3	Antibodies types, sizes and methods of detection	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Interaction links between antigens and antibodies responsible for interaction, types of reactions, affinity, monovalent and polyvalent antigen effects.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Synergy definition and application	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Indirect conjugation - Latex test - Pregnancy Test - Comp Test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	General instructions for the laboratory guide the student about immunity and the laboratory.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Viral hepatitis principle, causative agent, method of infection and laboratory diagnostic method	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Rose – Bengal method	Explanation of the lecture with the presence of means	Classroom and laboratory	Exams

			of illustration and practical application		
Fifteenth	3	Toxoplasmosis test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
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Primary Course Description Form

1. Course Name					
Protozoa					
2. Course Code					
MLT206					
3. Semester / Level					
First / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (College) / Number of Units (College)					
45 / 3					
7. Course administrator name					
Tuqa Abd Muhammad tuqa.mohamad@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Introducing the student to primary parasites (protozoa), methods of diagnosis and the diseases they cause, and familiarity with their epidemiological information, which helps to prevent and eradicate the prevailing parasitic diseases.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to parasites	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Classification of parasites	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Host and its types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Classification of protozoans and their specifications	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Roots	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Antamoeba: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Flagella	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Giardiasis - Trichomonas: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Leishmaniasis: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Tenth	3	Trypanosoma: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Ciliary	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Plantidium: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Spores	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Plasmodium: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Toxoplasma: form, pathogenesis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Pathogenic Bacteriology Course Description Form

1. Course Name					
Pathogenic bacteria					
2. Course Code					
MLT210					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 3					
7. Course administrator name					
Mohammad Hasan Mohammad mohammed.hasan@ntu.edu.iq					
8. Course Objectives					
Course Objectives		It aims to introduce the bacteria that cause diseases to humans and animals and the different ways to detect them and how to prevent and treat them in the event of infection			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	staphylococcus, general characteristics, toxin production, enzyme, immunomodulator, Allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	streptococci, general characteristics, toxin production, enzyme, immunomodulator, Allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Bacilli (Anthrax), general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Bordetella and Haemophilus, general traits.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Production of toxins for Bordetella and Haemophilus bacteria, enzyme, immunomodulatory, allergy testing.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Mycobacterium bacteria, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Corynebacterium, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Pneumococcus, general characteristics, toxin production, enzyme,	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

		immunology, allergy test.			
Ninth	3	Salmonella bacteria, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Escherichia coli bacteria, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Klebsiella, general characteristics, toxin production, enzyme, immunity, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Pseudomonas (Pseudomonas), general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Brucella bacteria, general characteristics, toxin production, enzyme, immunology, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Francisella bacteria, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Fifteenth	3	Chlamydia, general characteristics, toxin production, enzyme, immunomodulatory, allergy test.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
11. Course Evaluation					
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Worms Course Description Form

1. Course Name					
Worms					
2. Course Code					
ML213					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Tuqa Abd Muhammad tuqa.mohamad@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Definition of parasitology and a detailed study of parasites that infect humans and animals (general form and life cycle) and definition of the medical and economic importance of their role in disease, in addition to studying how to identify and resist them and prevent exposure to infection and how to eliminate them			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to parasites	Explanation of the lecture with the presence of means of	Classroom and laboratory	Exams

			illustration and practical application		
Second	3	Classification of parasites	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Various general methods of diagnosing parasites	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Tapeworms, their types and life cycle	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Methods for diagnosing tapeworms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Worms of trypanosis, types and life cycle.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Methods for diagnosing worms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Hidden human spores, their types and life cycle.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Ninth	3	Methods for diagnosing human cryptworms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Dwarf squamous worms, types and life cycle	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Methods for diagnosing dwarf squamous worms	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Liver trypanosomiasis and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Lung trypanosomiasis and methods of diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Nematodes, types, life cycle and methods of diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Quarterly worms, types, life cycle and methods of diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Biochemistry Course Description Form

1. Course Name					
Biochemistry					
2. Course Code					
MLT208					
3. Semester / Level					
First / Second					
4. Description of preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Dr. Maha Elttayef Jasim maha.aj@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Introducing chemical compounds and enriching the student with adequate information that enables him to understand the vital activities within the human body, and clarify the different methods used in diagnosing diseases.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to methods of collecting blood and urine samples and methods of preservation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	strays	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Rare metals and diseases associated with low levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Acid-base balance and problems caused by its imbalance	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Carbohydrates	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Digestion and absorption in normal and abnormal states	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Glucose tolerance test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Glucose metabolism and the hormones responsible for regulating it	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Diabetes and its types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Proteins	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Types of abnormal proteins and diseases resulting from them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Types of proteins and ways to digest them	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Electrorelay of body fluid proteins	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Liver function	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Kidney function	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Arabic Course Description Form

1. Course Name					
Arabic Language					
2. Course Code					
NTU202					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Dr. Layla Talal Ahmad layla.ta@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Introducing the Arab culture by understanding the rules and principles of the Arabic language and enabling students to master their Arabic language through the ability to write the correct texts and the appropriate expression of various situations and situations within their medical specialization.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	2	Language is human identity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Second	2	The Arabic language and its origins	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

Third	2	Syntax	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fourth	2	Counting rules	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fifth	2	The style of the condition in the Arabic language	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Sixth	2	Dictation and writing	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Seventh	2	Punctuation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eighth	2	Calligraphy	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Ninth	2	Arabic literature	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Tenth	2	The merits of writing for Al-Jahiz	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Eleventh	2	Short Story (Tigers on the Tenth Day)	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Twelfth	2	The poem of the night lover by Nazik Al-Malaika	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Thirteenth	2	Study of Surat Al-Fajr	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
Fourteenth	2	T tied	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams

Fifteenth	2	Communication in the language	Explanation of the lecture with the presence of means of illustration and practical application	Classroom	Exams
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Immunology and Pathogenesis Course Description Form

1. Course Name					
Immunology and pathogenicity					
2. Course Code					
MLT216					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Dr. Hanan Shahab Ahmad hanan.sha@ntu.edu.iq					
8. Course Objectives					
Course Objectives			The course aims to clarify the basic elements and terminology used in immunology, with a focus on the important elements in the defense of the body: natural immunity: chemical, biochemical, physiological and cellular immune barriers with a focus on antivirals , as well as the different mechanisms taken by microorganisms to resist the body's immunity and the different mechanisms for causing diseases.		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method

First	3	Definition of immunity, its types and its relationship to other natural and biological medicine sciences	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Immune response and its types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	The biological mechanisms causing pathological conditions.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Immunization or immunity against viruses and their types - Specialized immunity - Non-specialized immunity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Immunization or immunity against bacteria and their types - Specialized immunity - Non-specialized immunity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Immunization or immunity against parasites and their types - Specialized immunity - Non-specialized immunity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Immunization or immunity against fungi and its types - Specialized immunity - Non-specialized immunity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eighth	3	Mechanisms of neutralization or neutralization of bacterial and fungal toxins	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Osmosis and phagocytosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Autoimmune and theories of the formation of various autoimmune diseases	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Types of immune diseases - Systemic lupus erythematosus - Rheumatoid arthritis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	The mechanism of Rh factor in hemolysis at birth	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Hypersensitivity	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	ELIZA Test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	RIA Test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Cellular Hematology Course Description Form

1. Course Name					
Cellular blood diseases					
2. Course Code					
MT217					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Sayar Aswad Ali sayar.aswad@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Introducing hematology and focusing on understanding the normal mechanism of action of blood components in addition to the accompanying pathological conditions and for various reasons.		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to the importance of blood diseases and the study of blood components	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Hemostasis, its definition and types and the role of blood vessels	Explanation of the lecture with the presence of means	Classroom and laboratory	Exams

		and platelets in the hemostasis process	of illustration and practical application		
Third	3	Blood clotting factors	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	The mechanism of the blood clotting process	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Hemoglobin and problems associated with low and high blood	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Red blood cells, their mechanism of formation and functions, and the problems associated with their imbalance	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Tools, equipment and devices used to diagnose various blood diseases	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	White blood cells and the mechanism of their formation	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	White blood cell functions	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Tenth	3	Causes and symptoms associated with white blood cell deficiency	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Causes and symptoms associated with increased white blood cells	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Leukemia, its causes and types	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Acute and chronic myelogenous leukemia	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Monocytic leukemia	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Differential white blood cell test	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
11. Course Evaluation					
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Crimes of the Baath Regime in Iraq Course Description Form

1. Course Name					
Crimes of the Baath regime in Iraq					
2. Course Code					
NTU203					
3. Semester / Level					
First / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
2 / 30					
7. Course administrator name					
Adnan Abdulkarim Khalil adnan.akh@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Introducing the Baath regime and its emergence in Iraq and the types of crimes practiced by it over decades and studying the motives behind the implementation of various crimes against the Iraqi people.		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Basic political terminology	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Second	3	The emergence of the Baath Party in Iraq	Explanation of the lecture with the	Classroom	Exams

			presence of means of illustration		
Third	3	Types of crime	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Fourth	3	Causes and motives of the crime	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Fifth	3	Perpetrators of Baath regime crimes	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Sixth	3	The United Nations' view of the crimes of the Baath regime	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Seventh	3	Human rights and crimes of the Baath regime	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Eighth	3	Human rights violations by the Baath regime	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Ninth	3	Military crimes	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Tenth	3	Political crimes	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Eleventh	3	Economic crimes	Explanation of the lecture with the presence of means of illustration	Classroom	Exams

Twelfth	3	Civil offenses	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Thirteenth	3	Social crimes	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Fourteenth	3	Genocide	Explanation of the lecture with the presence of means of illustration	Classroom	Exams
Fifteenth	3	Mass graves	Explanation of the lecture with the presence of means of illustration	Classroom	Exams

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Medical Mycology Course Description Form

1. Course Name					
Medicinal fungi					
2. Course Code					
MT212					
3. Semester / Level					
Second / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (College) / Number of Units (College)					
45 / 3					
7. Course administrator name					
Alyaa Salih Jwad alya.sj@ntu.edu.iq					
8. Course Objectives					
Course Objectives		Introducing medical mycology, the nature of its formation and reproduction, important methods of diagnosis and isolation, as well as its economic and medical importance.			
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Definition and classification of medicinal fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Farming characteristics of fungi and types of culture media	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Methods of growing and insulating fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Tools, equipment and devices used in the diagnosis of fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Biochemical tests used to diagnose fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Microscopic tests used to diagnose fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	General basics in the treatment of fungal diseases	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Dermal fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Candidiasis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Cryptococci Ghati	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Cytocytopenia	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Aspergillosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Trichophytosis sporosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Fungicidal antibiotics	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Various antibiotics produced from fungi	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Virus Course Description Form

1. Course Name					
Viruses					
2. Course Code					
MLT209					
3. Semester / Level					
I / II					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 3					
7. Course administrator name					
Raihan Jabbar Jasim raihan.jj@ntu.edq.iq					
8. Course Objectives					
Course Objectives			It aims to introduce the nature of viruses and their relationship with living organisms and study their properties , medical and economic importance.		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction, general characteristics of the virus, its structure and classification based on DND or RNA	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Mechanisms of isolation and development of viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Chemotherapy, antivirals and vaccines	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Tools, equipment and devices used in the virology laboratory	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Different DNA isolation and replication mechanisms of viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Various immunological tests to diagnose viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Paramexo and rubella viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Enteroviruses, group of rhinoviruses.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Ninth	3	Hepatitis viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Carcinogenic viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eleventh	3	Adenoviruses, smallpox and parvoviruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Arthroviruses and hemorrhagic viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Immunodeficiency viruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Neuroviruses	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Virus inheritance	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Clinical Chemistry Course Description Form

1. Course Name					
Clinical Chemistry					
2. Course Code					
MLT211					
3. Semester / Level					
II / II					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Dr. Maha Elttayef Jasim maha.aj@ntu.edu.iq					
8. Course Objectives					
Course Objectives			• Providing biochemical surveys to help diagnose the disease condition that facilitates reaching the ultimate goal of treating and managing the patient , and these tests help in the study of disease prognosis and follow-up of patients in addition to conducting a survey of diseases in communities.		
9. Teaching and Learning Strategies					
• Adequate explanation of the course • Daily Tests • Student groups • Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Methods for determining protein levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Second	3	Fats, types of fats and their functions.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Third	3	Digestion and absorption of fats.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Lipid metabolism, conditions associated with abnormal levels.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifth	3	Cholesterol, triglycerides, free fatty acids.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Lipoproteins and their types and diseases associated with abnormal levels.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Ketone bodies	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Enzymes and their importance within the body	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Properties and classification of enzymes	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Factors affecting enzyme activity.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Change in enzyme activity and associated diseases	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Liver function and tests	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Hormones, their types, properties and function.	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	The mechanism of action of hormones and diseases associated with abnormal levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Cauterization functions, tests and diseases associated with abnormal levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

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Course Description Form Introduction to Hematology

1. Course Name					
Introduction to Hematology					
2. Course Code					
MLT205					
3. Semester / Level					
First / Second					
4. Description preparation date					
9 / 9/ 2024					
5. Available attendance formats					
Attendance on a weekly basis					
6. Number of Credit Hours (Total) / Number of Units (Total)					
45 / 3					
7. Course administrator name					
Sayar Aswad Ali sayar.aswad@ntu.edu.iq					
8. Course Objectives					
Course Objectives			Identify the components of blood and the problems caused by their imbalances within the body and the most important tests used to diagnose them		
9. Teaching and Learning Strategies					
- Adequate explanation of the course - Daily Tests - Student groups - Field visits					
10. Course Structure					
Week	Hours	Subject	Learning method	Attendance Forms	Evaluation method
First	3	Introduction to the types of blood diseases	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Second	3	Blood components	Explanation of the lecture with the presence of	Classroom and laboratory	Exams

			means of illustration and practical application		
Third	3	The process of blood formation in the body in children and adults	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourth	3	Leukemia (Polycythemia): clinical signs and diagnostic methods	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
fifth	3	Forms of red blood cells in the normal and abnormal state and methods of examination	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Sixth	3	Definition of hemoglobin Hb and the different ways to determine its levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Seventh	3	Definition of the volume of compressed blood cells PCV and the different methods for determining their levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Eighth	3	Definition of ESR and different methods for determining ESR levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Ninth	3	Anemia: clinical signs, types and diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Tenth	3	Sickle cell anemia: causes, clinical signs and diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

Eleventh	3	Aplastic anemia: causes, clinical signs and diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Twelfth	3	Bacterial blood diseases and methods of diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Thirteenth	3	Viral blood diseases and methods of diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fourteenth	3	Parasitic blood diseases and methods of diagnosis	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams
Fifteenth	3	Definition of white blood cells and the different ways to detect their levels	Explanation of the lecture with the presence of means of illustration and practical application	Classroom and laboratory	Exams

11. Course Evaluation

Daily, monthly and final exams as well as weekly reports

12. Learning and Teaching Resources

Textbooks

Main references

Scientific research

Scientific resources within the Internet