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

Academic Program and Course Description Guide

2025

Program description templateAcademic

University name: Northern Technology

College/Institute: Technical Institute of the Round

Scientific Department: Medical Laboratories

Academic or professional program name: Diploma in Medical Laboratories

Final Certificate Name: Diploma in Medical Laboratories

Study system: Courses

Description prepared on: 1/9/2025

Date the description was filled: 15/9/2025

Signature:

Department Head:

Dr. Ansam Hussein Ali

Signature:

Assistant Dean for Scientific Affairs:

Dr. Hanan Shehab Ahmed

The file was reviewed by

Quality Assurance and University Performance Division

Name of the Director of the Quality Assurance and University Performance Division:
Eng. Haider Ali Mohsen

the date:

the signature:

Dean's approval

Prof. Dr. Maha Al-Taif Jassim

1. Program Vision
Leading in preparing specialized medical laboratory technicians who possess the scientific and practical skills to conduct laboratory tests and manage laboratories with high efficiency, which contributes to improving the quality of diagnostic health services at the local and regional level.

2. Program Message
The Department of Medical Laboratories is committed to providing outstanding technical education that keeps pace with the latest scientific advancements in laboratory analysis. It focuses on graduating qualified professionals capable of performing biochemical, microscopic, immunological, and hematological tests with accuracy and professionalism. The department also strives to support applied scientific research and strengthen partnerships with healthcare institutions, contributing to the advancement of public health and the achievement of sustainable development goals.

3. Program Objectives
1- Preparing qualified technical personnel in medical laboratories who are capable of conducting routine tests and biochemical examinations according to approved scientific standards, and this is measured by the percentage of students passing the practical laboratory evaluation. 2- Equipping the student with the skills to handle and maintain modern laboratory equipment and to draw biological samples correctly, as observed through the student's performance in documented practical exercises.

3- Developing the student’s ability to apply quality control standards in the laboratory work environment, which is measured through periodic evaluation of laboratory practices.

4- Establishing professional and ethical values in the student (accuracy, scientific integrity, confidentiality of patient results, biosafety), which are measured through the evaluation of professional behavior during field training.

5- Linking the program's outputs to the needs of the labor market and the healthcare sector through field training in accredited hospitals and laboratories.

6- Supporting continuous learning and applied research among students and faculty to keep up with developments in the field of medical laboratory sciences.

4. Program accreditation

Application for program accreditation submitted - under process.

5. Other external influences

1. Linking the program to the labor market: Ensuring that the program's outputs are compatible with the needs of governmental and private hospitals and laboratories, and strengthening partnerships with health institutions that provide laboratory analysis services.

2. Technological and legislative influences: Technological development and the emergence of modern automated laboratory testing equipment, health laws and regulations governing the work of medical laboratories, and the requirements of international accreditation ISO 15189.

3. Facilitating employment and practical training: Providing field training opportunities in accredited laboratories, and opening employment channels for program graduates.

4. Continuous guidance of the program: Submitting proposals to develop curricula to keep pace with the requirements of modern laboratory work.

6. Program Structure				
Program structure	**Number of courses**	**Study unit**	**Percentage**	**comments***
Institution (university) requirements	**8**	**18**	**22.9%**	**Core course**
College requirements	**5**	**14**	**14.2%**	**Core course**
Department requirements	**22**	**64**	**62.9%**	**Core course**
Summer training	**There is summer training available**			
Other				

7. Program Description				
Year/Level	Course code	Course name	Credit Hours	
			theoretical	practical
Level One	MLT115	Analytical Chemistry	1	2
	MLT113	tissue slices	1	2
	MLT114	Laboratory equipment	1	2
	MLT118	tissues	1	2
	TID108	Laboratory and workshop safety	2	–
	MLT117	Foundations of Nursing	1	2
	NTU102	Computer principles	1	1
	NTU101	English language	2	–
	NTU100	Human rights and democracy	2	–
	NTU103	Arabic	2	–
	MLT119	Organic Chemistry	1	2
	MLT112	Laboratory techniques and quality control	1	2
	TID109	Medical terminology	2	–
	MLT120	First aid	2	–
	MLT116	blood transfusion	1	2
	TID106	Physiology	2	2
	TID110	anatomy	2	2
	NTU104	Physical education	1	1

7. Program Description				
Year/Level	Course code	Course name	Credit Hours	
			theoretical	practical
Level Two	MLT208	Biochemistry	1	2
	MLT206	Fundamentals of Immunology	1	2
	MLT206	Primary schools	1	2
	MLT210	Fundamentals of Bacteriology	1	2
	TID209	Viruses	1	2

	MLT205	Introduction to Hematology	1	2
	NTU204	Professional ethics	2	–
	TID202	count	2	–
	NTU203	Crimes of the Ba'ath regime in Iraq	1	–
	MLT211	Clinical Chemistry	1	2
	MLT216	Immunity and Pathogenesis	1	2
	MLT113	worms	1	2
	MLT210	Pathogenic bacteria	1	2
	MLT212	medicinal fungi	1	2
	MLT217	Cellular blood disorders	1	2
	NTU202	Arabic	2	–
	MLT215	Research project	2	–

8. Expected learning outcomes of the program
Knowledge
A1-To qualify the student to apply scientific knowledge in the field of medical laboratories and to understand the basics of medical sciences related to laboratory analyses. A2 - Knowledge of the structure and functions of the different body systems and their relationship to the results of laboratory tests.. A3 - FamiliarityPrinciples of laboratory analysis and methods of conducting it. A4 - Understanding quality control standards and ISO 15189 international accreditation systems and their applications in the laboratory work environment.
Skills

B1 - The ability to perform various laboratory analyses accurately and efficiently in accordance with Standard Operating Procedures (SOPs), as observed through documented practical evaluation.. B2-Handling and basic maintenance of laboratory equipment. B3 - Collecting biological samples (blood and others) and handling them in a correct and safe manner in accordance with biosafety standards.. B4 - Recording, analyzing, and interpreting results using computer systems and laboratory softwareSpecialized
Values
C1 - Commitment to accuracy and scientific integrity in conducting analyses, recording results and interpreting them.. C 2-Handling and basic maintenance of laboratory equipment. C3 - Applying occupational and biological safety standards within the laboratory environment and adhering to prevention procedures.. C4 - The ability to work within a multidisciplinary team and communicate effectively with healthcare professionals.

9. Teaching and learning strategies
Theoretical lectures
Scientific lectures
Field visits
discussion panels

Discussions
Office activities
laboratories
Graduation project
Summer training

9. Assessment methods
Assessment methods vary according to the nature of the subject matter; they include: daily, term and final written tests, oral tests, weekly reports and documented laboratory reports, practical laboratory activities, and evaluation of field performance during training that reflects the student's ability to apply in practice in a laboratory work environment.

Faculty members (list all faculty members in the academic department, including external and internal lecturers)						
Scientific rank	**Specialization**		**Special requirements/skills (if any)**		**Faculty preparation**	
	general	**private**			**angel**	**lecturer**
Mr	Chemistry	Biochemistry			1	
Mr	Life Sciences	Physiology of life			1	
assistant professor	Life Sciences	Physiology of life			2	
assistant professor	Life Sciences	Microbiology			1	
assistant professor	History education	Islamic etiquette			1	
Assistant teacher	Life Sciences	Animal record			3	

Assistant teacher	Life Sciences	Pathological analyses			1	
Assistant teacher	Life Sciences	Biochemistry			1	

Professional development

Orienting new faculty members

1. **Basic Educational Training**

Initially, it is essential to train teachers in teaching skills such as:

- Modern teaching strategies (active learning, project-based learning)
- Classroom management
- Preparing study plans and evaluating students

2. **AFor academic guidanceMentorship**

Assigning an experienced faculty member to each new instructor to help them in:

- Understanding the institute's environment
- Developing teaching methods
- Dealing with daily challenges

3. **Ongoing courses and workshops**

Organizing periodic training programs that include:

- Using technology in education (such as e-learning platforms)
- Developing research skills

- Communication and presentation skills

Professional development of faculty members

1. **Focus on updating knowledge rather than the basics:**

- Stay informed about the latest developments in the field.
- Advanced courses in specialized (technical or technical) fields
- Keeping up with modern trends in technical education

2. **Training in modern technologies**

Many of the challenges are on the technological side:

- Using e-learning systems and digital platforms
- Integrating artificial intelligence and digital tools into teaching
- Developing blended learning skills (in-person + online)

12. Admission Criteria

Scientific branch / Average according to the admission requirements approved at the Northern Technical University.

13. Key sources of information about the program

1.Approved textbooks include: Clinical Laboratory Science, Clinical Chemistry

Tietz Textbook of Clinical Chemistry and Molecular Diagnostics

2.Peer-reviewed scientific journals: Journal of Clinical Microbiology.

3.Global organizations: World Health Organization (WHO), Centers for Disease Control and Prevention

4.Scientific databases:PubMed, Google Scholar.

3. The institute's library and specialized electronic resources.
4. Scientific papers and applied studies in the field of medical laboratories.

14. Program Development Plan

1. Review of the curriculum:

- Updating curricula based on modern research and new technologies in
- Updating academic content: The curriculum is updated based on the latest research and technologies in the field of medical laboratories, such as molecular analyses and modern automated devices.
- Introducing modern skills

2. Advanced scientific training:

- Intensive clinical training: Improving practical training in hospitals and health centers

3. Integrating modern technology:

- UsemModern treatment techniques
- Developing health information systems

4. Scientific research:

- Encouraging scientific research in the field
- Supporting research publication

5. Continuing training and education

Program Skills Plan															
				Learning outcomes required from the program											
Level	Course code	Course Name	Essential or optional	Knowledge				Skills				Values			
				1a	2a	3a	4a	1b	2b	3b	4b	1J	2J	3J	4J
Level Two	MLT208	Biochemistry	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT214	Fundamentals of Immunology	essential	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
	MLT206	Primary schools	essential	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
	MLT210	Fundamentals of Bacteriology	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	MLT209	Viruses	essential	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
	MLT205	Introduction to Hematology	essential	✓	✓			✓	✓	✓		✓	✓		
	NTU204	Professional ethics	essential	✓	✓			✓	✓	✓	✓	✓	✓		
	TID202	count	essential	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓

	NTU203	Crimes of the Ba'ath regime in Iraq	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	MLT211	Clinical Chemistry	essential	✓	✓	✓			✓	✓	✓	✓	✓	✓	
	MLT216	Immunity and Pathogenesis	essential	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓
	MLT213	worms	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	MLT210	Pathogenic bacteria	essential	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓
	MLT212	medicinal fungi	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	MLT217	Cellular blood disorders	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NTU202	Arabic	essential	✓	✓			✓	✓	✓	✓	✓	✓		
	MLT215	Research project	essential	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓
Level One	MLT115	Analytical Chemistry	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT113	tissue slices	essential	✓	✓			✓	✓	✓	✓	✓	✓		
	MLT114	Laboratory equipment	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT118	tissues	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	TID108	Laboratory and workshop safety	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MLT117	Foundations of Nursing	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NTU102	Computer principles	essential	✓	✓			✓	✓	✓	✓	✓	✓	✓	
	NTU101	English language	essential	✓	✓	✓		✓	✓			✓	✓	✓	✓
	NTU100	Human rights and democracy	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	NTU103	Arabic	essential	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
	MLT119	Organic Chemistry	essential	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓
	MLT112	Laboratory techniques and quality control	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TID109	Medical terminology	essential	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
	MLT120	First aid	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	MLT116	blood transfusion	essential	✓	✓			✓	✓	✓		✓	✓	✓	✓
	TID106	Physiology	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

	TID110	anatomy	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NTU104	Physical education	optional	✓	✓			✓	✓	✓	✓	✓	✓		
	MLT115	Analytical Chemistry	essential	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
	MLT113	tissue slices	essential	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Protozoa Course Description Template

1. Course Name:
Protozoa
2. Course code:
MLT206
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M. M. Taqi Muhammad Abd e-mail: tuqa.mohamad@ntu.edu.iq
8. Course Objectives:
Introducing the student to primary parasites (protozoa), methods of diagnosing them, the diseases they cause, and familiarity with their epidemiological information, which helps in preventing and eradicating prevalent parasitic diseases.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to Parasites	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Parasite classification	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Host and its types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Classification and specifications of protozoa	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	radicals	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Entamoeba: Form, Pathogenesis and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	flagellate	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Giardia-Trichomonas: Morphology, Pathogenesis, and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Leishmaniasis: Form, Pathogenesis and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Trypanosoma: Morphology, Pathogenesis, and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Ciliates	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Plantidium: Morphology, Pathogenesis and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	sporozoites	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Plasmodium: Morphology, Pathogenesis and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Toxoplasmosis: Form, Pathogenesis and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the Elementary School subject, prepared byCourse instructor
Main references (sources)	١. Medical Laboratory Science Review. ٢. Clinical Laboratory Science.
Recommended books and references (scientific journals and reports…)	Journal of Clinical Microbiology.
Electronic references and websites	Global Health Organization(WHO)

Course description template for Fundamentals of Immunology

1. Course Name:
Fundamentals of Immunology
2. Course code:
MLT214
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Prof. Dr. Hanan Shehab Ahmed e-mail: hanan.Sha@ntu.edu.iq
8. Course Objectives:
The course aims to clarify the basic elements and terms used in immunology, with a focus on the important elements in the body's defense: natural immunity: chemical, biochemical, physiological, and cellular immune barriers, with a focus on antivirals.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Definition of immunity, its types, and its relationship to other natural and biological medical sciences.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Natural immunity and components of the immune system, factors affecting immunity, and mechanisms of natural immunity.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Acquired immunity and its types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Innate immunity and its types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	(Immunization) Vaccines and their types, their importance, how to prepare a vaccination schedule, and the duration. The student is required to prepare a report on the vaccinations.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	The complementary systemComplement system), definition. Physical and chemical properties and the ratio of its components in the body.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Antigens: their types, sizes, and methods of detection	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Antibodies: Types, Sizes, and Methods of Detection	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Ninth	3	Knowledge and Application	Links to the interaction between antigens and the antibodies responsible for the reaction, types of reactions, affinity, effects of monovalent and multivalent antigens.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Adhesion: Definition and Application	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	indirect aggregation – a testLatex Pregnancy Test Comp Test	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	General instructions for the laboratory: Guidance for the student regarding immunology and the laboratory.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Viral hepatitis: principle, causative agent, mode of transmission, and	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

			method of laboratory diagnosis	practical experiments	written exams
fourteenth	3	Knowledge and Application	Rose – Bengal method	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	Toxoplasmosis test	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Lectures for the subjectImmunityPrepared byCourse instructor	Required textbooks (curriculum books, if available)
Kuby Immunology.	Main references (sources)
The Journal of Immunology. Nature Reviews Immunology.	Recommended books and references (scientific journals and reports...)
Global Health Organization(WHO)	Electronic references and websites

Sample Course Description for Fundamentals of Bacteriology

1. Course Name:
Fundamentals of Bacteriology
2. Course code:
MLT210
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Dr. Luay Manna Ibrahim e-mail: dr.luay.m.Ibrahim@ntu.edu.iq
8. Course Objectives:
It aims to provide a comprehensive introduction to bacteriology, bacterial classification, bacterial cell structure and function, bacterial growth and methods of estimation and factors affecting it, metabolism, genetics and the biological and economic importance of bacteria.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to Bacteriology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Structure and shape of bacteria, classification of bacteria, chemical composition and secondary structure of the bacterial cell.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Bacterial physiology, growth requirements, types of nutrition and factors affecting growth.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Sterilization and disinfectionClassification of sterilization methods: physical and chemical.	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
Fifth	3	Knowledge and Application	Tools, equipment and devices used in diagnosing bacteria	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Infection, sources of infection, virulence, toxins, and enzymes related to bacteria	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Culture media and their types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Chemical tests for detecting bacteria	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Anaerobic bacteria	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	ClostridiumClostridium	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Aerobic bacteria	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Staphylococcus, general characteristics, toxin production, enzyme, immunity Allergy test.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Streptococcus, general characteristics, toxin production, enzyme, immunity Allergy test.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	bacilli(Anthrax) General characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Bordetella and Haemophilus, general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subjectbacteriaPrepared byCourse instructor
Main references (sources)	Medical Laboratory Science Review. Clinical Laboratory Science.
Recommended books and references (scientific journals and reports…)	Journal of Clinical Microbiology.
Electronic references and websites	Global Health Organization(WHO)

Sample course description for virology

1. Course Name:
viruses
2. Course code:
MLT209
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Rehan Jabbar Jassim e-mail: raihan.jj@ntu.edu.iq
8. Course Objectives:
It aims to introduce the nature of viruses and their relationship to living organisms, to study their properties, and their medical and economic importance.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum

- Daily tests
- student groups
- Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction, general characteristics of the virus, its structure and classification based on nucleic acid. DNA or RNA	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Mechanisms for isolating and growing viruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Chemotherapy, antiviral drugs, and vaccines	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fourth	3	Knowledge and Application	Tools, equipment and devices used in a virology laboratory	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	Different mechanisms of viral DNA isolation and replication	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Various immunological tests for diagnosing viruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Paramyxoviruses and rubella	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Enteroviruses, a group of rhinoviruses.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Ninth	3	Knowledge and Application	Hepatitis viruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	carcinogenic viruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Adenoviruses, smallpox, and parvovirus	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Arthropod-borne viruses and hemorrhagic viruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	immunodeficiency retroviruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fourteenth	3	Knowledge and Application	neuroviruses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	viral inheritance	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subjectvirusesPrepared byCourse instructor
Main references (sources)	Medical Laboratory Science Review. Clinical Laboratory Science.
Recommended books and references (scientific journals and reports…)	Journal of Clinical Microbiology.
Electronic references and websites	Global Health Organization(WHO)

Sample Biochemistry Course Description

1. Course Name:
Biochemistry
2. Course code:
MLT208
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Prof. Dr. Maha Al-Taif Jassim e-mail: maha.aj@ntu.edu.iq
8. Course Objectives:
Introducing chemical compounds and enriching the student with sufficient information that enables him to understand the vital activities that take place within the human body, and explaining the different methods used in diagnosing diseases.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to methods of collecting and preserving blood and urine samples	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	electrolytes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Rare earth minerals and diseases associated with low levels of them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Acid-base balance and problems caused by its imbalance	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Carbohydrates	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Digestion and absorption in normal and abnormal conditions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Glucose tolerance test	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Glucose metabolism and the hormones responsible for regulating it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Diabetes and its types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	proteins	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Types of abnormal proteins and the diseases they cause	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Types of proteins and how they are digested	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Electrophoresis of body fluid proteins	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Liver functions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Kidney functions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Biochemistry lectures prepared by the instructorsThe course
Main references (sources)	Lehninger Principles of Biochemistry.
Recommended books and references (scientific journals and reports...)	Clinical Biochemistry. The Journal of Biological Chemistry.
Electronic references and websites	American Society for Clinical Chemistry(ADLM)

Sample Course Description: Introduction to Hematology

1. Course Name:
Introduction to Hematology
2. Course code:
MLT205
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Dr. Ansam Hussein Ali e-mail: ansam.ha@ntu.edu.iq
8. Course Objectives:
Understanding the components of blood, the problems caused by imbalances in these components within the body, and the most important tests used for diagnosis.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to types of blood diseases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Blood components	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	The process of blood formation in the body in children and adults	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	leukemiaPolycethemia: Clinical Signs and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Normal and abnormal red blood cell shapes and methods of testing them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Definition of hemoglobin and the different methods for determining its levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Definition of compressed red blood cell volume PCV and the different methods for determining its levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Definition of erythrocyte sedimentation rateESR and the different methods for determining its levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Anemia: Clinical Signs, Types and Diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Sickle cell anemia: causes, clinical signs and diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Aplastic anemia: causes, clinical signs and diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Bacterial blood diseases and methods of diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Viral blood diseases and methods of diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Parasitic blood diseases and methods of diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	An introduction to white blood cells and the different methods for detecting their levels.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures on Hematology prepared by the instructorsThe course
Main references (sources)	Dacie and Lewis Practical Haematology.
Recommended books and references (scientific journals and reports...)	British Journal of Haematology.
Electronic references and websites	American Society of Hematology(ASH)

Sample Course Description for Professional Ethics

1. Course Name:
Professional ethics
2. Course code:
NTU204
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: M.M. Taghreed Mustafa Zayan e-mail: tagreid.mz@ntu.edu.iq
8. Course Objectives:
Understanding the basic principles of professional ethics for those working in medical specialties The graduate is trained to deal professionally with his profession and to achieve harmony with himself and his professional environment (the patient, his companions, health workers, and medical equipment).
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	– Principles of professional ethics in the stages of civilizational development. – Principles of professional ethics in Arab and Islamic civilization. – Etiquette of dealing with patients in hospitals from ancient times until now.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Professional conduct: its definition, concept, practical applications, and the relationship between employees and their superiors.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Basic professional ethics – The characteristics of professional ethics as a guide and mentor for behavior.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

			- How to employ professional ethics from the position of a guide to the individual's behavior, emotions, and ability to make the appropriate decision. Characteristics and attributes of healthcare workers... Appearance, behavior, and commitment. Patient's moral and legal rights		
Fourth	3	Knowledge and Application	Behavioral/Human-Interactive-Associative Patterns. Its definition, nature, motives, interpretations, and influencing factors.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	Communication methods/linguistic and non-linguistic - Its definition, types, effects, and design of successful communication methods.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

			– How do communication methods affect behavior, listening, and how can one practice them, with practical examples?		
Sixth	3	Knowledge and Application	Behavioral trends and tendencies. – Its definition, classification, factors affecting it, and methods of measuring it.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Values, customs, and traditions. – Its definition, classification, factors affecting it, and methods of measuring it.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Personality types and how to deal with them. – Definition of personality – its types – its relationship to the profession. The technician's personality and characteristics	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Ninth	3	Knowledge and Application	Conditions for improving mental health - Its definition, the factors affecting it, prevention of mental illness, the role of mental health in vocational preparation.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Conditions for professional compatibility and the associated working relationship. - Its concept, its conditions, and poor professional availability.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Job description for graduate work	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	- Behavioral approach to dealing with the patient. - Receiving the patient, dealing with him, gaining his trust, and maintaining professional confidentiality.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

			- Setting dates for the required procedure. -Maintaining the patient's belongings.		
thirteenth	3	Knowledge and Application	Behavioral behavior in dealing with medical devices and equipment. -Daily inspection of equipment, tools, solutions and other requirements, preparing them for daily work, maintaining and preserving them. -Preparing the necessary medications for the job and handling them properly.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Occupational safety -Prevention of work hazards and accidents. - Protection from the risks of bacterial, toxic, and radioactive contamination. - Prevention of thoughts of infection with	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

			contagious and infectious diseases. – Avoid wrong practices in the workplace.		
fifteenth	3	Knowledge and Application	Applications in professional conduct. – Field visits to hospitals and other health institutions to learn and exchange experiences and information.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Guide to Ethics in Approved Medical Laboratories	Required textbooks (curriculum books, if available)
Principles of Biomedical Ethics.	Main references (sources)
Accountability in Research.	Recommended books and references (scientific journals and reports…)
UNESCO – Ethics of Science and Technology	Electronic references and websites

Statistics Course Description Template

1. Course Name:
Statistics
2. Course code:
TID202
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: Mustafa Talib Khalaf e-mail: mustafa.tk@ntu.edu.iq
8. Course Objectives:
The ability to deal with different statistical methods and their vital applications within the field of medical laboratories.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Basic concepts in mathematics	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	division equation	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Purpose and continuity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Biostatistics	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Statistical concepts	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	The concept of probability	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Calculation and counting techniques	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Probability distribution	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Frequency distribution table	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Measures of central tendency	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Methods of classifying and categorizing data	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Derived	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Derivative of trigonometric functions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	integration	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Deviation and contrast	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Statistics lectures prepared by the instructorsThe course
Main references (sources)	Essential Medical Statistics.
Recommended books and references (scientific journals and reports...)	Biometrical Journal.
Electronic references and websites	platformIBM SPSS Statistics

Sample course description: Crimes of the Ba'ath regime in Iraq

1. Course Name:
Crimes of the Ba'ath regime in Iraq
2. Course code:
NTU203
3. Semester/Year:
Level Two / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: A.M. Adnan Abdul Karim Khalil e-mail: adnan.akh@ntu.edu.iq
8. Course Objectives:
Defining the Baath regime and its origins in Iraq, the types of crimes it committed over decades, and studying the motives behind the various crimes committed against the Iraqi people.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Basic political terms	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	The emergence of the Ba'ath Party in Iraq	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Types of crime	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Causes and motives for crime	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	Perpetrators of Ba'ath regime crimes	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
Sixth	3	Knowledge and Application	The United Nations' view of the crimes of the Ba'ath regime	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Human rights and the crimes of the Ba'ath regime	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Baath regime human rights violations	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	military crimes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Political crimes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

eleventh	3	Knowledge and Application	economic crimes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	civil crimes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	social crimes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	genocide	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	mass graves	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	The curriculum adopted by the Iraqi Ministry of Higher Education and Scientific Research for the subject of Ba'ath regime crimes
Main references (sources)	The Iraqi High Tribunal: Origins, Controversies, and Contributions.
Recommended books and references (scientific journals and reports...)	ReportsHuman Rights Watch Iraq.
Electronic references and websites	Office of the United Nations High Commissioner for Human Rights(OHCHR)

Sample description of the Worms course

1. Course Name:
worms
2. Course code:
NTU203
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M. M. Tuqa Muhammad Abid e-mail: Tuqa.mohamad@ntu.edu.iq
8. Course Objectives:
This course introduces parasitology and provides a detailed study of parasites that infect humans and animals (general morphology and life cycle), highlighting their medical and economic importance in disease transmission. It also covers methods for identifying, controlling, and preventing infection, as well as strategies for eradicating these parasites.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to Parasites	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Parasite classification	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Various general methods for diagnosing parasites	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Tapeworms, their types and life cycle	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Methods for diagnosing tapeworms	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Fluke worms, their types and life cycle.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Methods for diagnosing flukes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Cryptospores of humans, their types and life cycle.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Methods for diagnosing human cryptosporidiosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Dwarf scale worms, their types and life cycle	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Methods for diagnosing dwarf scalyworms	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	liver trypanosomiasisandMethods of diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Lung trypanosomiasis and methods of diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Threadworms: Types, Life Cycle, and Diagnostic Methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Parasitic worms: their types, life cycle, and methods of diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subjectwormsPrepared byCourse instructor
Main references (sources)	٣. Medical Laboratory Science Review. Clinical Laboratory Science.
Recommended books and references (scientific journals and reports...)	Journal of Clinical Microbiology.
Electronic references and websites	Global Health Organization(WHO)

Sample Course Description for Immunology and Pathology

1. Course Name:
Immunity and Pathogenesis
2. Course code:
MLT216
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Prof. Dr. Hanan Shehab Ahmed e-mail: hanan.Sha@ntu.edu.iq
8. Course Objectives:
The course aims to clarify the basic elements and terms used in immunology, with a focus on the important elements in the body's defense: natural immunity: chemical, biochemical, physiological, and cellular immune barriers, with a focus on antivirals, as well as the different mechanisms that microorganisms take to resist the body's immunity and the different mechanisms for causing disease.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Definition of immunity, its types, and its relationship to other natural and biological medical sciences.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Immune response and its types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Biological mechanisms causing disease conditions.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Immunization or immunity against viruses and their types - Specialized immunity Non-specific immunity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Immunization or resistance against bacteria and their types – Specialized immunity Non-specific immunity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Immunization or resistance against parasites and their types – Specialized immunity Non-specific immunity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Immunization or resistance against fungi and their types – Specialized immunity Non-specific immunity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Mechanisms for neutralizing or neutralizing bacterial and fungal toxins	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Osmosis and phagocytosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Autoimmunity and theories of the development of various autoimmune diseases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Types of autoimmune diseases Systemic lupus erythematosus Rheumatoid arthritis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Agent mechanismRh in hemolysis at birth	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	hypersensitivity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	TestELIZA	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	TestRIA	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subjectImmunityPrepared byCourse instructor
Main references (sources)	Kuby Immunology.
Recommended books and references (scientific journals and reports...)	The Journal of Immunology. Nature Reviews Immunology.
Electronic references and websites	Global Health Organization(WHO)

Sample Course Description for Pathogenic Bacteria

1. Course Name:
Pathogenic bacteria
2. Course code:
MLT210
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Dr. Luay Manna Ibrahim e-mail: dr.luay.m.Ibrahim@ntu.edu.iq
8. Course Objectives:
It aims to introduce bacteria that cause infection.forFor theADiseaseshumanThe animal, the different methods of detecting it, and how to prevent and treat it if it occurs.In injury
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Staphylococcus, general characteristics, toxin production, enzyme, immunity Allergy test.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Streptococcus, general characteristics, toxin production, enzyme, immunity Allergy test.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	bacilli (Anthrax), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Bordetella and Haemophilus, general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application		Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
Sixth	3	Knowledge and Application	Tuberculosis bacteria (Mycobacterium), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	CorynebacteriumCorynebacterium), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	pneumococci (Pneumococcus), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Salmonella bacteria (Salmonella), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Escherichia coli bacteria (Escherichia coli), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

eleventh	3	Knowledge and Application	Klebsiella bacteria (Klebsiella), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Pseudomonas bacteriaPseudomonas), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Brucellosis bacteria (Malta fever)Brucella), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Francisella bacteriaFrancisella), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	Chlamydia bacteriaChlamydia), general characteristics, toxin production, enzyme, immunity, allergy testing.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subjectbacteriaPrepared byCourse instructor
Main references (sources)	Medical Laboratory Science Review. Clinical Laboratory Science.
Recommended books and references (scientific journals and reports…)	Journal of Clinical Microbiology.
Electronic references and websites	Global Health Organization(WHO)

Sample Course Description for Medical Mycology

1. Course Name:
medicinal fungi
2. Course code:
MLT212
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Rehan Jabbar Jassim e-mail: raihan.jj@ntu.edu.iq
8. Course Objectives:
An introduction to the science of medical mycology, its nature of formation and reproduction, and the important methods in its diagnosis and isolation, as well as its economic and medical importance.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Definition and classification of medicinal fungi	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	The cultivation properties of fungi and types of culture media	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Methods of growing and isolating fungi	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Tools, equipment and devices used in fungal diagnosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	TestsBiochemistryUsed to diagnose fungi	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Microscopic tests used to diagnose fungi	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	General principles in the treatment of fungal diseases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	skin fungi	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Candidiasis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Cryptococcus giannica	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	cellular cocci	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Aspergillosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	sporotrichosis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Antifungal antibiotics	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Various antibiotics produced from fungi	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subjectfungiPrepared byCourse instructor
Main references (sources)	Medical Laboratory Science Review. Clinical Laboratory Science.
Recommended books and references (scientific journals and reports…)	Journal of Clinical Microbiology.
Electronic references and websites	Global Health Organization(WHO)

Clinical Chemistry Course Description Template

1. Course Name:
Clinical Chemistry
2. Course code:
MLT211
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Prof. Dr. Maha AlTaif Jassim e-mail: maha.aj@ntu.edu.iq
8. Course Objectives:
Providing biochemical investigations to help diagnose the disease condition facilitates reaching the ultimate goal of treating and managing the patient. These tests help in studying disease prognosis and monitoring patients, in addition to conducting disease surveys in communities.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Methods for determining protein levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Fats, types of fats and their functions.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Digestion and absorption of fats.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Fat metabolism, medical conditions associated with abnormal fat levels.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Cholesterol, triglycerides, free fatty acids.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Lipid proteins, their types, and diseases associated with abnormal levels.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	ketone bodies	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Enzymes and their importance within the body	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Characteristics and classification of enzymes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Factors affecting enzyme activity.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Changes in enzyme activity and associated diseases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Liver function tests	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Hormones, their types, characteristics and function.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	The mechanism of hormone action and diseases associated with abnormal levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Functions of cauterization, its tests, and diseases associated with abnormal levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Chemistry lecturesClinicalPrepared by my instructorsThe course
Main references (sources)	Lehninger Principles of Biochemistry.
Recommended books and references (scientific journals and reports...)	Clinical Biochemistry. The Journal of Biological Chemistry.
Electronic references and websites	American Society for Clinical Chemistry(ADLM)

Course description templateCellular blood disorders

1. Course Name:
Cellular blood disorders
2. Course code:
MLT217
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Dr. Ansam Hussein Ali e-mail: ansam.ha@ntu.edu.iq
8. Course Objectives:
Introduction to hematology and focusing on understanding the normal working mechanism of blood components, in addition to the pathological conditions associated with them and for various reasons.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to the importance of blood diseases and the study of blood components	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Hemostasis: its definition, types, and the role of blood vessels and platelets in the hemostasis process.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Blood clotting factors	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	The mechanism of blood clotting	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Hemoglobin and the problems associated with low and high levels of it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Red blood cells, their formation mechanism, functions, and problems associated with imbalances in their levels.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Tools, equipment and devices used to diagnose various blood diseases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	White blood cells and the mechanism of their formation	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Functions of white blood cells	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Causes and symptoms associated with low white blood cell count	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Causes and symptoms associated with an increase in white blood cells	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Leukemia: its causes and types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Acute and chronic myeloid leukemia (AML)Myeloid leukemia	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Mononegen (monone) diseaseMonocytic leukemia	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	differential white blood cell test	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Lectures on Hematology prepared by the course instructors	Required textbooks (curriculum books, if available)
Dacie and Lewis Practical Haematology.	Main references (sources)
British Journal of Haematology.	Recommended books and references (scientific journals and reports…)
American Society of Hematology(ASH)	Electronic references and websites

Computer Science Course Description Template

1. Course Name:
Computer
2. Course code:
NTU201
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: M.M. Ali Tariq e-mail: ali.tareq@ntu.edu.iq
8. Course Objectives:
The student should be familiar with different computer applications and be able to distinguish between the types of software that can be dealt with, and learn about artificial intelligence, its prospects for dealing with it, and how to benefit from it in all areas of life.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	**Security and Networks: What is a network? Types of networks. Basic network components. Network security fundamentals. Understanding network threats. Network troubleshooting.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	**E-commerce: Concepts of electronic banking services, which include online banking: ATM and debit card services, telephone banking, SMS banking, e-alerts, and mobile banking..**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	**Computer Troubleshooting: Identifying and resolving common hardware and software problems encountered by computer users. Essential troubleshooting techniques and tools for diagnosing and resolving issues.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	**Introduction to Artificial Intelligence: Definition of artificial intelligence, history of artificial intelligence,**	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

			artificial intelligence techniques and methodologies, challenges and ethical considerations.	practical experiments	written exams
Fifth	3	Knowledge and Application	**Artificial intelligence in our daily lives: AI in smartphones and virtual assistants such asSiri or Google Assistant.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	**Artificial intelligence applications: education, healthcare, finance, transportation, marketing, and advertising..**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	**Artificial Intelligence and Society: (How artificial intelligence affects social relations, artificial intelligence, international relations, and the future of humanity.)**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	**Ethical challenges in artificial intelligence (AI ethics, privacy, surveillance, and the impact of AI on the labor market.)**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	**The future of artificial intelligence (future trends in artificial intelligence, modern research and emerging technologies).**	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
tenth	3	Knowledge and Application	**Security and Networks: What is a network? Types of networks. Basic network components. Network security fundamentals. Understanding network threats. Network troubleshooting.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	**E-commerce: Concepts of electronic banking services, which include online banking: ATM and debit card services, telephone banking, SMS banking, e-alerts, and mobile banking..**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	**Computer Troubleshooting: Identifying and resolving common hardware and software problems encountered by computer users. Essential troubleshooting techniques and tools for diagnosing and resolving issues.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	**Introduction to Artificial Intelligence: Definition of artificial intelligence, history of artificial intelligence, artificial intelligence techniques and methodologies, challenges and ethical considerations.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fourteenth	3	Knowledge and Application	**Artificial intelligence in our daily lives: AI in smartphones and virtual assistants such asSiri or Google Assistant.**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	**Artificial intelligence applications: education, healthcare, finance, transportation, marketing, and advertising..**	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Practical Computer Lab Guide(Computer Laboratory Manual)	Required textbooks (curriculum books, if available)
Computer Science: An Overview.	Main references (sources)
ReportsInstitute of Electrical and Electronics Engineers.	Recommended books and references (scientific journals and reports...)
Cisco Networking Academy	Electronic references and websites

Sample Arabic Language Course Description

1. Course Name:
Arabic
2. Course code:
NTU202
3. Semester/Year:
Level Two / Semester Two
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
The name :Dr. Layla Talal Ahmed email: layla.ta@ntu.edu.iq
8. Course Objectives:
Introducing Arab culture through understanding the rules and principles of the Arabic language and empowering students with their Arabic language through the ability to write correct texts and express themselves appropriately in various situations and cases within their medical specialization.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Language is human identity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	The Arabic language and its origins	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	syntax	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Counting rules	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Conditional sentences in Arabic	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Dictation and writing	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	punctuation marks	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Arabic calligraphy	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Arabic literature	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	The Merits of Writing by Al-Jahiz	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Short story (Tigers on the tenth day)	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	The Night Lover's Poem by Nazik al-Mala'ika	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Studying Surah Al-Fajr	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	The letter ta' marbuta	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Communicating in the language	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	The curriculum prescribed by the Iraqi Ministry of Higher Education and Scientific Research for the Arabic language subject
Main references (sources)	Arabic language: its meaning and structure
Recommended books and references (scientific journals and reports...)	Journal of the Arabic Language Academy in Cairo.
Electronic references and websites	The Arab League Educational, Cultural and Scientific Organization(ALECSO)

Histology Course Description Template

1. Course Name:
tissues
2. Course code:
MLT118
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Dhibya Dakhel Awad e-mail: dabyah.da@ntu.edu.iq
8. Course Objectives:
To give a general idea of the general anatomy of the human body, to see the structure of the organs, and to study all the tissue structures that make them up under a microscope.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Definition of some terms dealing with histology and cell biology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	The microscope and its parts	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Cell shapes	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	simple epithelial tissue	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	stratified epithelial tissue	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	connective tissue	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	soft connective tissue	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Dense connective tissue	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	connective tissue Specialist – Blood	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Specialized connective tissue – cartilage	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Specialized connective tissue – hard bone	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Specialized connective tissue – cancellous bone	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Muscle tissue – cardiac muscle	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Muscle tissues – skeletal muscles	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Muscle tissue – smooth muscle	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Histology lectures prepared by the instructors of For the decision..
Main references (sources)	Junqueira's Basic Histology: Text and Atlas.
Recommended books and references (scientific journals and reports...)	Journal of Histochemistry & Cytochemistry.
Electronic references and websites	Global Health Organization(WHO)

Course description template for Fundamentals of Nursing

1. Course Name:
Foundations of Nursing
2. Course code:
MLT117
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Taghreed Mustafa Zayan e-mail: tagreid.mz@ntu.edu.iq
8. Course Objectives:
To learn the fundamentals of nursing, first aid, laboratory and occupational safety in the field of nursing, and methods of dealing with the patient during their presence in medical laboratories.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to nursing and the need for it, the nursing process - stages of the nursing process.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Medical examination and its methods	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Vital signs – temperature – the body's homeostasis process – how to measure them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Pulse – Definition – Factors affecting it – How to measure it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Respiration – its definition – factors affecting it – how to calculate it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Blood pressure – definition – factors affecting it – conditions of low and high blood pressure – how to measure blood pressure	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Laboratory health and safety – definition – principles – most important factors affecting it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Key factors affecting the health of laboratory workers – natural factors – major diseases they cause	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Chemical agents – the most important diseases and conditions they cause	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Psychological factors – the most important diseases and conditions they cause	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Biological factors – their types – their effect on laboratory workers – the most important diseases they cause	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	First aid – its definition – the first aider and their qualifications – principles of first aid	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	First aid for wounds and bleeding	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	First aid for burns – First aid for all types of fractures	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Artificial respiration and suffocation	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the Fundamentals of Nursing course, prepared by the instructorsThe scheduled..
Main references (sources)	Kozier & Erb's Fundamentals of Nursing.
Recommended books and references (scientific journals and reports...)	Journal of Clinical Nursing.
Electronic references and websites	Global Health Organization(WHO)

Sample course description for laboratory equipment

1. Course Name:
Laboratory equipment
2. Course code:
MLT114
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Rehan Jabbar Jassim e-mail: raihan.jj@ntu.edu.iq
8. Course Objectives:
Covering and understanding the various tools and equipment used in medical laboratories
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Types of microscopes and their uses	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	The light microscope: its working principle and components	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Microscope maintenance: How to ensure its longevity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Electronic scales, their types and components	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	Principle of operation and use of the electronic scale	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
Sixth	3	Knowledge and Application	Electronic scale maintenance	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Definition of a photometer	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	light wavelength	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Beer–Lambert Law	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	optical spectrometer	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

eleventh	3	Knowledge and Application	Principle of operation of a spectrophotometer	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Types of optical spectrometers	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Components of a spectrophotometer	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Spectrophotometer maintenance	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	flame photometer	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Practical guide to laboratory equipment(Laboratory Instruments Manual)
Main references (sources)	Clinical Laboratory Instrumentation.
Recommended books and references (scientific journals and reports…)	Journal of Clinical Laboratory Analysis.
Electronic references and websites	Global Health Organization(WHO)

Computer Science Course Description Template

1. Course Name:
computer
2. Course code:
NTU102
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: Abu Dhar Saad Mohsen e-mail: abuther.sm@ntu.edu.iq
8. Course Objectives:
The student should be familiar with different computer applications and be able to distinguish between the types of software that can be used.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	The concept of networks Networks and their types – The concept of the internet and how it worksh	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Description of the main screen and its components How to connect to the World Wide Webweb	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	How to benefit from popular search engines such as Google	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Understanding methods of searching for information and how to access it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	programExcel tutorial to understand the program's concept – benefitsh– specificationshFeatureshand operating methodsh	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Understanding the main screen, its components, and its various menus and active tools.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Cell concept – basic data types and how to input them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	How to save a work page Close the program and close the file.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Using some functionsYThe program provides it, such ascount, SQRT, Ave, sum, Min, Max, and other useful related statistical functions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Understanding the editing processeditingYThe program provides it and	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	How to copy or transfer data, and to understand the concept of copying mathematical operations, as well as the concept of relative cells. relative and absolute cells	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Controlling cell display – changing its style and format using formatting tools	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	programWord document to understand the program concept – benefitsh– specificationshFeatureshand operating methodsh	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Program applicationsDifferent Word	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Statistical programSPSS – Program Concept and Operationh	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Practical Computer Lab Guide(Computer Laboratory Manual)
Main references (sources)	Computer Science: An Overview.
Recommended books and references (scientific journals and reports...)	ReportsInstitute of Electrical and Electronics Engineers.
Electronic references and websites	Cisco Networking Academy

Sample Analytical Chemistry Course Description

1. Course Name:
Analytical Chemistry
2. Course code:
MLT115
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Haider Essam Mahmoud e-mail: haydir.assim@ntu.edu.iq
8. Course Objectives:
To provide a general overview of organic compounds and biochemistry, thereby increasing the student's knowledge and ability to conduct various chemical experiments and reactions.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Atoms, elements, radioactive isomer contamination with radioactive isomers, elemental contamination.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	The relationship between atoms, molecules, and energy, according to the new atomic theory (De Broglie's equation). Matter and classification.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Chemical bonds: covalent, ionic, coordination, hydrogen	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Methods of analysis. Qualitative, quantitative, and statistical methods of quantitative analysis; errors in quantitative analysis.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Methods of expressing solution concentration, molar solution, normal solution	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Preparation of molar solution, dilution, questions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Configuring percentages and parts per million	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Chemical equilibrium, ionization, water constant ((PH and POH)	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Ionization of weak electrolytes. Calculation of the pH of weak acids and weak bases.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Neutral solutions and classification	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Calculating neutral solutions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Volumetric analysis, classification, standard solution, examples.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Neutralization, oxidation, and reduction reactions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Reagent theory, interaction, properties, examples.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Principles of color measurement	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Chemistry lectures prepared by the department's instructors.
Main references (sources)	Chemistry: The Central Science.
Recommended books and references (scientific journals and reports...)	Journal of Chemical Education.
Electronic references and websites	International Union of Pure and Applied Chemistry(IUPAC)

Sample course description for Laboratory and Workshop Safety

1. Course Name:
Laboratory and workshop safety
2. Course code:
TID108
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: M.M. Rehan Jabbar Jassim e-mail: raihan.jj@ntu.edu.iq
8. Course Objectives:
Understanding safety and security rules and the ability to deal with sources of hazards in laboratories and workshops
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Essential equipment that must be available in the laboratory (laboratory layout)	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Safety precautions when handling laboratory equipment and chemicals	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Safety precautions upon completion of laboratory work	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Fires and their types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Fire extinguishing equipment	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Personal protective equipment	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Chemical hazards and how to deal with them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Radiation hazards	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	biological hazards	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Disposal of laboratory (medical) waste	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	First aid in laboratories	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Use of warning signs in the laboratory	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Environmental factors and their impact on safety and health (light, noise, heat, humidity)	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Safety in field studies	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Methods of storing chemical and medical materials	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Laboratory Safety lectures prepared by the department's faculty.
Main references (sources)	Biosafety in Microbiological and Biomedical Laboratories (BMBL).
Recommended books and references (scientific journals and reports…)	American Journal of Clinical Pathology.
Electronic references and websites	Global Health Organization(WHO)

Course description template for Histology and Cytological Techniques

1. Course Name:
Histology and Cytological Techniques
2. Course code:
MLT113
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Mustafa Talib Khalaf e-mail mustafa.tk@ntu.edu.iq
8. Course Objectives:
To give a general idea of how to prepare permanent tissue grafts for different body organs
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Definition of some terms dealing with histology and cell biology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Methods of sample collection	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Steps for preparing tissues for study, fixation and fixatives	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Routine and special fixatives	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Sample washing solutions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Drying and types of dryers	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Clarification and types of clarifiers	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Leaching and types of burial media	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Casting and sculpting molds	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	cutting	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	The dissecting apparatus and its types	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	staining of tissue slides	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Routine stains for tissue slides	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Special dyes for tissue slides	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Microscopic examination	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subject tissue slides Prepared by the instructors of A For the decision..
Main references (sources)	Junqueira's Basic Histology: Text and Atlas.
Recommended books and references (scientific journals and reports...)	Journal of Histochemistry & Cytochemistry.
Electronic references and websites	Global Health Organization(WHO)

Blood Transfusion Course Description Template

1. Course Name:
Blood Transfusion
2. Course code:
MLT116
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Sayar Aswad Ali e-mail: sayar.aswad@ntu.edu.iq
8. Course Objectives:
Understanding the characteristics, departments, and importance of a blood bank, and how blood transfusions are performed.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to blood transfusions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Blood components, blood collection, donor selection, physiological examination and collection time.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Blood type, systemABO, Rh factor, and Lewis system	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Blood type classification (long and short)	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Coombs direct and indirect blood test	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	The process of cross-matching testing, reporting and recording the results.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	The importance of blood transfusion and its relation to blood diseases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Prenatal care and leukemia in infants	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Blood division, methods of use and division.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Blood components after storage and anticoagulants	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Disadvantages of blood transfusion	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Anticoagulants: their types, properties, preparation methods, and storage	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Teaching test samples and methods for recording patient history	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Quality control, tools, people, and method	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Blood transfusion and fluid administration equipment.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures on the subject of blood transfusion prepared by the course instructor.
Main references (sources)	Dacie and Lewis Practical Haematology.
Recommended books and references (scientific journals and reports...)	British Journal of Haematology.
Electronic references and websites	American Society of Hematology(ASH)

Course description template of Physiology

1. Course Name:
Physiology
2. Course code:
TID106
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Asmaa Abdelhak Mohamed e-mail: asmaa.am@ntu.edu.iq
8. Course Objectives:
The student's understanding of the function of each organ in the human body and its role in maintaining body balance
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Blood – its components – blood smear – blood volume – red blood cells – red blood cell count – their shape – how to count them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	White blood cells – their number – their types – the normal ratios for each type – the function of white blood cells.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Blood clotting – blood acidity – blood platelets and their function.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Anemia – Types of anemia.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Jaundice – its types – causes of jaundice – destruction of red blood cells.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	The cardiovascular system – an overview of the circulatory system anatomy – heart anatomy – heart valves.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	The position of the heart in relation to the surface of the living body – the heart as a pump – cardiac output.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Electrocardiogram – Heart sounds – Heart valve regions – Normal sounds.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Arterial blood pressure – silent blood flow – atmospheric pressure – blood pressure measurement.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Factors affecting blood pressure – high – low – central control of blood vessels – measuring high blood pressure – low.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	The respiratory system – respiratory muscles – diaphragm – the function of the diaphragm in relation to the lungs.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Respiratory volumes – Expiratory reserve volume – Inspiratory reserve volume – Vital capacity – Factors affecting vital capacity.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Diseases that affect the effectiveness of respiratory volumes – nasal function.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Function of the alveoli	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	The digestive system – the mouth – the pharynx.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Physiology lectures prepared by the department's faculty members
Main references (sources)	Guyton and Hall Textbook of Medical Physiology.
Recommended books and references (scientific journals and reports…)	The Journal of Physiology.
Electronic references and websites	American Society of Physiology(APS)

Course description template of Human rights and democracy

1. Course Name:
Human rights and democracy
2. Course code:
NTU100
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: A.M. Adnan Abdul Karim Khalil e-mail: adnan.akh@ntu.edu.iq
8. Course Objectives:
Covering and understanding the various tools and equipment used in medical laboratories
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	The concept of freedom and democracy	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Citizen's rights and duties	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	The concept of the state and government	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Intellectual and cultural freedom	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	Economic and social freedom	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
Sixth	3	Knowledge and Application	The right to vote and participate in elections	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Freedom to form unions and associations	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Freedom of social security and healthcare	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Democracy, its goals and means of achieving it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Forms of democracy	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

eleventh	3	Knowledge and Application	Democracy in Iraq	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	People's participation in legislative work	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Referendum, its types and reasons	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Popular referendum and popular solution	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	Election of the Iraqi Transitional National Assembly	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	The curriculum approved by the Ministry of Higher Education and Scientific Research
Main references (sources)	**Constitution of the Republic of Iraq for the year 2005.**
Recommended books and references (scientific journals and reports…)	Journal of Human Rights
Electronic references and websites	Office of the United Nations High Commissioner for Human Rights(OHCHR)

Course description template of Medical terminology

1. Course Name:
Medical terminology
2. Course code:
TID109
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: Nouras Khalil Ibrahim e-mail: nawras.khalil@ntu.edu.iq
8. Course Objectives:
The student's familiarity with comprehensive and detailed information about the terminology used to describe the organs and structures of the human body andThe different types of tests and their medical abbreviations, and enabling him to understand most of the discussions in English on any topic within the curriculum lectures, seminars, and external conferences.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to Medical Terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	root	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	prefix	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	The next	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	movable link rules	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Linking patterns	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Medical terminology and pathology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Cardiovascular, circulatory, and nervous system terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Gastrointestinal and urinary system terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Lymphatic system terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Respiratory System Terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Teeth, face and jaws	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Terms of situations and trends	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Muscular system terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Skeletal system terminology	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Medical Terminology for Health Professions.
Main references (sources)	Chabner, D. E. The Language of Medicine. Elsevier
Recommended books and references (scientific journals and reports...)	Stedman's Medical Dictionary
Electronic references and websites	BMC Medical Education

Course description template of Arabic

1. Course Name:
Arabic
2. Course code:
NTU103
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Dr. Layla Talal Ahmed email: Mlayla.ta@ntu.edu.iq
8. Course Objectives:
Covering and understanding the various tools and equipment used in medical laboratories
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to linguistic errors	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Rules for writing the long and short alif	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	The letters ض and ظ	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Writing the hamza	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	punctuation marks	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
Sixth	3	Knowledge and Application	Noun and verb, and the difference between them	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Objects	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Number	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Applications for common grammatical errors	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Noon and Tanween	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

eleventh	3	Knowledge and Application	Formal aspects of administrative discourse	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Meanings of prepositions	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Solar and lunar letters	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	The closed and long taa	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	Open T	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	The curriculum prescribed by the Iraqi Ministry of Higher Education and Scientific Research for the Arabic language subject
Main references (sources)	Arabic language: its meaning and structure
Recommended books and references (scientific journals and reports...)	Journal of the Arabic Language Academy in Cairo.
Electronic references and websites	The Arab League Educational, Cultural and Scientific Organization(ALECSO)

Course description template of Organic chemistry

1. Course Name:
Organic chemistry
2. Course code:
MLT119
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Haider Essam Mahmoud e-mail: haydir.assim@ntu.edu.iq
8. Course Objectives:
To provide a general overview of organic compounds and biochemistry, thereby increasing the student's knowledge and ability to conduct various chemical experiments and reactions.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to Organic Chemistry: Organic Compounds Found in Nature	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Organic pollution	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Hydrocarbons, classification, alkanes, alkenes, alkynes, example benzene, nomenclature, properties	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Alcohols, classification and properties	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Aldehydes: Preparation, Classification, Properties	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Ketones: Classification, Properties, Preparation	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Ketone preparation	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Carboxylic acids, classification, properties	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Classification of carboxylic acids	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Classification of carboxylic acids	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Properties of carboxylic acids	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Physical properties of organic compounds	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Separation of organic compounds	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Purification of organic compounds. Filtration and extraction.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Melting points and boiling points	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Chemistry lectures prepared by the department's instructors.
Main references (sources)	Chemistry: The Central Science.
Recommended books and references (scientific journals and reports...)	Journal of Chemical Education.
Electronic references and websites	International Union of Pure and Applied Chemistry(IUPAC)

Sample course description for laboratory techniques

1. Course Name:
Laboratory techniques
2. Course code:
MLT112
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Rehan Jabbar Jassim e-mail: raihan.jj@ntu.edu.iq
8. Course Objectives:
Identifying the various laboratory techniques used to detect different diseases in various body fluidsand Understanding the fundamentals of quality control
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	An introduction to laboratory techniques, including the fundamentals of testing techniques for diagnosing various diseases, laboratory management, sample preparation, classification, labeling, and occupational safety.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	An introduction to microorganisms, their structure, classification, and lifestyles.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	The mechanism of bacterial function in terms of metabolism, nutrition, reproduction, and growth	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fourth	3	Knowledge and Application	Sterilization methods and tools used in it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fifth	3	Knowledge and Application	Methods of detecting bacteria through the use of special chemical stains	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Methods of detecting bacteria through their culture in different culture media	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Bacterial culture methods depend on the type of culture medium and the type of bacteria.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Different methods of collecting bacterial samples	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Ninth	3	Knowledge and Application	Methods for preserving bacterial samples and how to transport them to the laboratory	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
tenth	3	Knowledge and Application	Introduction to blood and its components	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Methods of preserving blood samples and anticoagulants	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Definition of hemoglobinHb and the different methods for determining its levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Definition of compressed red blood cell volumePCV and the different methods for determining its levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fourteenth	3	Knowledge and Application	identificationErythrocyte sedimentation rate (ESR) and different methods for determining its levels	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fifteenth	3	Knowledge and Application	An introduction to white blood cells and the different methods for detecting their levels.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Basic Laboratory Methods in Medical Parasitology
Main references (sources)	Basic Laboratory Methods in Medical Parasitology
Recommended books and references (scientific journals and reports...)	Textbook of Diagnostic Microbiology
Electronic references and websites	American Institute of Laboratory Standards(CLSI

Anatomy Course Description Template

1. Course Name:
Anatomy
2. Course code:
TID110
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: M.M. Dhibya Dakhel Awad e-mail: dabyah.da@ntu.edu.iq
8. Course Objectives:
Covering and understanding the various tools and equipment used in medical laboratories
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Anatomical orientations and body surfaces	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Anatomy of the heart, its location relative to the chest wall, and the number of	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	Anatomy of the lungs, their location according to the chest wall, and the number of lungs.ضNo	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Abdominal dissection and division of the abdomen vertically and horizontally	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	Stomach anatomy, its parts and their relationshipsWith the membersThe other	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Anatomy of the liver and spleen and their location according to body surfaces	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Anatomy of the small intestine and its relationship to other organs in the abdominal cavity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Anatomy of the cecum and its location within the abdominal cavity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Dissection of the gallbladder and its location	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Anatomy of the uterus and its location within the pelvic cavity	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Skeleton, skull and spine	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Shoulder bones, scapula and clavicle	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	The forearm bone and its parts	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Hand and thigh bones	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	pelvic bones and lower limbs	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	Lectures for the subject Anatomy Prepared by the instructors of A For the decision..
Main references (sources)	Junqueira's Basic Histology: Text and Atlas.
Recommended books and references (scientific journals and reports...)	Journal of Histochemistry & Cytochemistry.
Electronic references and websites	Global Health Organization(WHO)

Sample sports course description

1. Course Name:
Sports
2. Course code:
NTU104
3. Semester/Year:
Level 1 / First Semester
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
45/3
7. Name of the course coordinator
Name: Ali Yahya Ahmed e-mail: ali.ya@ntu.edu.iq
8. Course Objectives:
The course aims to provide the student with the concept of exercises and their historical development, introduce him to the different schools of exercises, introduce him to the original, derived and special exercise positions, develop the basic motor skills of exercises, as well as learn about some types of sports, their rules and benefits.
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to sports and their benefits	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	Terms in human anatomy	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	The skeletal system of the human body	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	The muscular system of the human body	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	The nervous system of the human body	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Sports medicine and sports injuries	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	First aid for sports injuries	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Fatigue and ways to treat it	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Ethics and sportsmanship	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

tenth	3	Knowledge and Application	Laws of football	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Basketball rules	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Volleyball rules	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Laws of tennis	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Swimming and its benefits	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Track and field athletes and their rules	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	The approved physical education curriculum from Institute
Main references (sources)	Lifetime Physical Fitness and Wellness
Recommended books and references (scientific journals and reports…)	Journal of Sports Sciences
Electronic references and websites	Global Health Organization(WHO)

Course description template of first aid

1. Course Name:
first aid
2. Course code:
MLT120
3. Semester/Year:
Level 1 / Semester 2
4. Date the description was prepared:
15/9/2025
5. Available forms of attendance:
My presence
6. Number of credit hours (total) / Number of units (total)
30/2
7. Name of the course coordinator
Name: M.M. Taghreed Mustafa Zayan e-mail: tagreid.mz@ntu.edu.iq
8. Course Objectives:
The ability to take all necessary measures to preserve life The student's knowledge of first aid nursing and how to save emergency cases before transferring them to the hospital
9. Teaching and learning strategy:
• Comprehensive explanation of the curriculum • Daily tests • student groups • Field visits

10. Course Structure					
Week	Hours	Required learning outcomes	Unit/Topic Name	Teaching method	Evaluation Method
the first	3	Knowledge and Application	Introduction to First Aid and Emergency Medicine EMS	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the second	3	Knowledge and Application	System components EMS, management, policy, organization, and equipment	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
the third	3	Knowledge and Application	First aid kit, form, appearance and contents, airway and breathing, improvised uses, workplace first aid kit, historical first aid kits.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Fourth	3	Knowledge and Application	Ambulance, transportation, working with hospital staff, working with public safety agency training.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

Fifth	3	Knowledge and Application	The emotional aspect of emergency care, death and dying, dealing with the patient and family members, primary care for the dying patient, and critically ill patients.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Sixth	3	Knowledge and Application	Physical signs of death, presumptive signs of death, final signs of death, medical examination cases	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Seventh	3	Knowledge and Application	Anxiety, pain, fear, hostility, depression, dependency on mental health, and receiving bad news	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Eighth	3	Knowledge and Application	Infectious diseases (transmission routes), risk reduction and prevention systems. Scene safety and personal protection.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
Ninth	3	Knowledge and Application	Trauma, kinetic shock. Bleeding: its types, causes, and treatment.	Whiteboard, PowerPoint slides,	Reports, theoretical, oral, and

				practical experiments	written exams
tenth	3	Knowledge and Application	Trauma: its types, causes, and management.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
eleventh	3	Knowledge and Application	Wounds, soft tissue injuries, eye injuries, facial and throat injuries.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
twelfth	3	Knowledge and Application	Chest injuries, abdominal injuries, head injuries, and spinal injuries.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
thirteenth	3	Knowledge and Application	Heart structure, circulatory function, and arteriosclerosis.	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams
fourteenth	3	Knowledge and Application	Heart attack, signs and symptoms	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

fifteenth	3	Knowledge and Application	Physical signs of cardiogenic shock, sudden death and congestive heart failure	Whiteboard, PowerPoint slides, practical experiments	Reports, theoretical, oral, and written exams

11. Course Evaluation
Student reports and activities, oral and written theoretical and practical exams

12. Learning and teaching resources	
Required textbooks (curriculum books, if available)	First Aid Manual
Main references (sources)	Oxford Handbook of Emergency Medicine
Recommended books and references (scientific journals and reports…)	*Journal of Emergency Nursing*.
Electronic references and websites	Global Health Organization(WHO)