

**Ministry of Higher Education and
Scientific Research**
Alfarabi University
Faculty of Health and Medical Technologies
Department of Radiology and Sonography
Technology



Academic Programs Description

2026-2025

University Name: Alfarabi University

Faculty/Institute: Faculty of Health and Medical Technologies Scientific Department:

Department of Radiological and Sonography

Academic or Professional Program Name: Bachelor of Science in Medical Technology
(Radiology and Sonography)

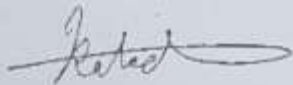
Final Certificate Name: Radiology and Sonography Technology

Academic System: Semester

Date of preparation of the description:

File filling date: 2026

Signature:



Head of Department Name:

Prof. Dr. Khalid Hadi Mahdi Aal-Shabeeb

Date:

Signature:



Scientific Associate Name

Ass. Prof. Dr. Ahmad Flayyih Hasan

Date: 31/8/2026

The file was checked by the Division of Quality Assurance and University Performance

Name of the Head of the Quality Assurance and University Performance Division.

Date: 31/8/2026

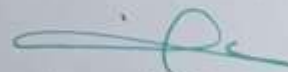
Signature:



د. خالد الحادي محي الدين



جامعة الفارابي
كلية التقنيات الصحية



Approval of the Dean

Prof. Dr.

A. M. Ka Abim

31/8/2026

1. Vision

The department should have a clear vision and a defined mission, and be a distinguished scientific authority in the field of radiology technology. It should also possess firmly established values that serve as the compass guiding its strategic decisions and daily practices in developing creative and innovative ideas, projects, and plans to enhance radiology technology education.

2. Program Mission

Preparing study programs that conform to the standards adopted by international educational institutions, to prepare specialized technical personnel equipped with the highest levels of ethical and professional training. Which effectively contributes to supplying the labor market with qualified personnel capable of competing locally and globally, and working to enhance the role of the university as an institution that contributes to the advancement of scientific research, community service, and the development of the university's human and financial resources.

3. Program Objectives

1. Graduates will understand the fundamental terminology and concepts of radiology, identify the components of radiological equipment, and review the principles of occupational safety.
- 2- They will learn about the use of modern technologies in diagnostic radiology, ultrasound, magnetic resonance imaging (MRI), nuclear medicine, computed tomography (CT), and radiotherapy
- 3- They will educate students about the risks of radiation exposure, how to protect staff and patients from these risks.
- 4- They will train students in compassionate and efficient healthcare delivery to all patient groups, within their respective specialties in healthcare institutions.
- 5- Graduates will participate in applied research studies supported by artificial intelligence that contribute to improving the quality of diagnostic services and analyzing research results related to radiation technologies.
- 6- Graduates will evaluate the efficiency of radiological equipment, assess the quality of diagnostic outputs, and conduct ongoing reviews of their professional performance in accordance with ethical principles and safety standards.
- 7- Graduates will design customized imaging protocols, develop technological solutions to reduce radiation doses, and participate in developing awareness programs on radiation safety

4. Program Accreditation

Newly established department / First phase only

5. External influences

Twinning with the University / Middle Technical College / College of Health and Medical Technologies

6. Program Structure				
Reviews*	Percentage	Credit Hours	Number of cycles	Program Structure
nothing	%16.3	7	3	Requirements of the institution
nothing	%4.7	2	1	College Requirements
nothing	%79	34	11	Department Requirements
nothing	-----	—	—	Summer Training
				Other

Study Plan for the Department of Radiology					
Grades	Course or Course Code	Course Name			Unites
			Theoretical	Practical	
First stage Semester 1		Skeletal Anatomy	2	3	3
		General Physics	2	3	3
		General Physiology	2	3	3
		Biology	2	3	3
		General Chemistry	2	3	3
		Computer Principles 1	1	2	2
		Human Rights and Democracy	2	-	2
		English Language	2	-	2
First stage Semester 2		Anatomy of Body Systems	2	4	3
		Atomic physics	2	4	3
		Functional Physiology	2	3	3
		Radiobiology	2	3	4
		Fundamentals of Nursing	2	3	4
		Medical Terminology	2	-	2
		Arabic language	2	-	2

1. Expected learning outcomes of the program

Knowledge

- 1- The student will learn about human anatomy, the functions of body systems, and medical terminology.
- 2- The student will understand the effects of ionizing and non-ionizing radiation on human cells and tissues, and the principles of radiation safety.
- 3- The student will learn about different types of medical imaging techniques, such as X-rays, CT scans, MRI, and ultrasound, and their respective protocols.
- 4- The student will learn the technical principles of operating and configuring X-ray equipment according to the type of examination.

Skills

- 1- The student will be able to identify the parts of the human body and their functions.
- 2- The student prepares medical imaging equipment and adjusts it according to the type of examination required
- 3- The student applies different imaging modes to obtain clear, accurate, and high-quality radiographs before submitting them to the specialist doctor
- 4- The student can communicate with the patient and explain the nature of the examination and the necessary procedures for examination and safety.

Values

1. Adheres to professional ethics and maintains the confidentiality of patients' radiological information, especially with critical and special cases.
2. Takes responsibility during working hours and field training, and applies radiation safety standards.
3. Demonstrates respect and cooperation with medical staff and patients while providing services.
4. Commits to self-development and staying up-to-date with advancements in medical imaging, as well as supporting the professional development of newly appointed staff.

2. Teaching and Learning Strategies

1. Lectures
2. Dialogue and Discussion
3. Cooperative Learning (Group Classes)
4. Brainstorming
5. Reciprocal Teaching
6. Posting lectures on the college or department website, for all professors and all courses
7. Using presentation and audio equipment
8. Writing research papers and reports in English
9. Speaking English in class and during participation
10. Conducting research and experiments to achieve the Sustainable Development Goals

3. Evaluation methods						
1. Questions and answers during lectures. 2. Daily, unannounced quizzes. 3. Evaluation of research and writing in terms of style, expression, and spelling. 4. Questions to assess listening and attention skills in English. 5. Student participation in evaluating peer performance. 6. Practical assessment tests in listening, speaking, and reading. 7. Monthly and term exams. 8. Final written exams.						

1- Faculty						
Faculty members						
Faculty Preparation		Requirements/Skills (if any)		Specialization,		Academic Rank,
lecturer	Stafe			private	General	
	√			Applied Nuclear Physics	Applied Nuclear Physics	Prof. Dr. Khalid Hadi Mahdi
	√			General medicine, gynecology, and infertility	General medicine, gynecology, and infertility	Prof. Dr. Abdul-Adheem Yousef Jassim
	√			Life Sciences: Microbiology	Life Sciences: Microbiology	Assistant Lecturer Mohammed Nassif Jassim Mohammed
	√			Laser Physics and Electro-Optics	Laser Physics and Electro-Optics	Assistant Lecturer Taqa Akram Khalifa Hassan
√				Atomic Physics	Atomic Physics	Dr. Huda Razzaq Katafa
	√			Life Sciences: Biotechnology	Life Sciences: Biotechnology	Assistant Professor Dr. Ahmed Falyiyh Hasan
	√			General Chemistry	General Chemistry	Assistant Lecturer Hussam Ali Atallah Saeed
	√			Nuclear Physics	Nuclear Physics	Dr. Ali Khalid Aboud
	√			Arabic Language: Modern Literature	Arabic Language: Modern Literature	Assistant Professor Dr. Lamia Hussein Ali
√				Life Sciences: Pathological Analysis	Life Sciences: Pathological Analysis	Assistant Lecturer Khattab Azhar Musleh Hamad
	√			General Law	General Law	Prof. Dr. Azhar Musleh Hamad Obaid
	√			Physics: Medical Physics	Physics: Medical Physics	Assistant Lecturer Haider Mahmoud Hassan

Professional Development

Mentoring new faculty members

- 1- Work on diversifying classroom management methods and giving lectures
- 2- The new faculty is exposed to the visit of the head of the department and the old teachers during the lectures
- 3- Conducting personal interviews to know the teaching competence and skill in teaching
- 4- Publishing research in international journals with an impact factor, writing literature, and participating in workshops and conferences

Professional development of faculty members

Encouraging and training instructors to develop curriculum content, incorporate scientific advancements, and utilize diverse teaching and learning strategies (outcome-based learning, project-based learning, collaborative learning, problem-based learning, community-based learning, and self-directed learning), as well as assessment mechanisms and methods, through a training plan in collaboration with the university's Continuing Education Center. Active participation in the Ministry's platforms, particularly eduba, is also encouraged to enhance faculty members' ability to use smart learning platforms, publish research in reputable journals, stay informed about modern teaching strategies, and explore the use of artificial intelligence and sustainable development.

Acceptance Criteria

Students graduating from the scientific branch of secondary school are eligible to enroll in the Radiology Technology Department at the university after successfully completing their secondary education. Admission to the morning program requires a minimum grade of 70%, and the department accepts only graduates of the scientific branch of secondary school.

The most important sources of information about the program

1. Files stored in the department.
2. The curriculum approved by the Ministry of Higher Education and Scientific Research.
3. Recommendations from the Quality and Academic Performance Committees.
4. The official website of Al-Farabi University College.

5. Program Development Plan

1. Periodic review of the curriculum.
2. Preparation of annual course reports, including a development plan for each course.
3. Implementation of internal and external review processes for the program.
4. Active participation of program beneficiaries in program development.
5. Conducting workshops and advanced practical training courses.
6. Organizing summer training hours to enhance skills.

Curriculum Skills Outline															
Learning outcomes required from the program															
Emotional and value goals				Program Skills Objectives				Cognitive goals				Basic or optional	Course Name	Course Code	Year/ Level
4c	3c	2c	1c	4b	3b	2b	1b	4a	3a	2a	1a				
√	√			√	√	√	√	√	√	√	√	Specialized	Anatomy of skeleton		First stage Semester 1
√	√			√	√	√	√	√	√	√	√	Assistance	General physics		
√	√			√	√	√	√	√	√	√	√	Assistance	General physiology		
√	√			√				√	√	√		Assistance	Biology		
√	√			√				√	√	√		General	General chemistry		
√	√	√	√	√	√	√		√	√	√	√	General	Computer principles1		
√	√	√	√	√				√	√	√	√	General	Human rights and democracy		
√	√	√	√	√	√	√	√	√	√	√		Specialized	English language		
√	√			√	√	√		√	√	√	√	Assistance	Anatomy of body systems		First stage Semester 2
√	√	√			√	√			√	√		Assistance	Physics of atom		
√	√			√	√			√	√			Assistance	Systemic physiology		
√	√			√	√	√		√	√	√	√	General	Radiobiology		
√		√		√	√			√	√	√		Specialized	Principles of Nursing		
√		√		√	√			√	√	√		Assistance	Computer principles2		
√	√	√	√	√	√	√	√	√	√	√		Assistance	Medical Terminology		
√	√	√	√	√	√	√	√		√	√	√	Assistance	Arabic Language		

Course Description Form

13. Course Name:	
skeletal anatomy	
14:Course Code	
15: Semester / Year	
Semester (1) / Stage (1)	
16:Description Preparation Date	
2025- 2026	
17:Available Attendance Forms	
Weekly attendance to college classrooms and labs	
18: Number of Units (Total)/8Number of Credit Hours (Total)	
Total hours 75 \ units 3	
19:Course administrator's name (mention all, if more than one name) .	
Name: Professor Dr. Abdaladeem Yousif Jasem Email: abdulazim.yusuf@alfarabiuc.edu.iq	
20. Course Objectives	
Course Objectives	Define the surface anatomy, anatomical positions & planes of the body and: 1-The general anatomy of the upper limbs skeleton. 2-The general anatomy of the chest skeleton. 3-The general anatomy of the vertebral column. 4-The general anatomy of the lower limbs skeleton. 5-The general anatomy of the upper & lower limbs muscles. 6-The general anatomy of the joints, type of joints & mechanism of movement. 7-The general anatomy of the skull, fascial bones, paranasal sinuses.

21. Teaching and Learning Strategies	
Strategy	1-Scientific and written lectures. 2-practical lectures 3- Use illustrative means, such as displaying photos and videos 4- conversation and discussion 5-brain storm 6-change jobs

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	5	Knowledge and skills	Introduction, definition Surface anatomy and anatomical position, vertical, horizontal lines and planes of abdominal organs cell and tissue types	Explanations Videos and pictures Practical methods	Oral Written Quizzes
2nd	5	Knowledge And Skills	skeleton of upper limb Shoulder girdle clavicle and scapula bone	Explanations Videos and pictures Practical methods	Oral Written Quizzes
3rd	5	Knowledge and skills	The humerus, radius, and ulna bones	Explanations Videos and pictures Practical methods	Oral Written Quizzes
4th	5	Knowledge and skills	The hand	Explanations Videos and pictures Practical methods	Oral Written Quizzes
5th	5	Knowledge and skills	Muscles of the upper limbs	Explanations Videos and pictures Practical methods	Oral Written Quizzes
6th	5	Knowledge and skills	Joints Types of joints Mechanism Of movement	Explanations Videos and pictures Practical methods	Oral Written Quizzes
7th	5	Knowledge and skills	Skeleton of chest Ribs, sternum Segments of the Spinal cord	Explanations Videos and pictures Practical methods	Oral Written Quizzes
8th	5	Knowledge and skills	Vertebrate Cervical Thoracic Lumbar Sacrum, coccyx Intervertebral Disc	Explanations Videos and pictures Practical methods	Oral Written Quizzes
9th	5	Knowledge and skills	Skeleton of the Lower limb	Explanations Videos and pictures	Oral Written

			Bony pelvis Pelvic girdle	Practical methods	Quizzes
10th	5	Knowledge and skills	The femur Tibia And fibula bones	Explanations Videos and pictures Practical methods	Oral Written Quizzes
11th	5	Knowledge and skills	The foot	Explanations Videos and pictures Practical methods	Oral Written Quizzes
12th	5	Knowledge and skills	The muscles of the Lower limbs	Explanations Videos and pictures Practical methods	Oral Written Quizzes
13th	5	Knowledge and skills	Skull Bones of the skulls	Explanations Videos and pictures Practical methods	Oral Written Quizzes
14th	5	Knowledge and skills	Fascial bones Mandible TMJ	Explanations Videos and pictures Practical methods	Oral Written Quizzes
15th	5	Knowledge and skills	Nasal cavity Paranasal sinuses	Explanations Videos and pictures Practical methods	Oral Written Quizzes

23

Course Evaluation

- First semester: 10% theoretical + 3% student reports and activities and quick surprise exams + 5% practical + 2% student participation in practical laboratory application = 20%
 - Final exam: 60%
- Total final grade = 100%

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	Netter, F. H. (2018). Atlas of Human Anatomy Drake, R., Vogl, A. W., & Mitchell, A. W. (2014) Abrahams, P.H., Spratt, J.D., Loukas, M., Van Schoor, A. (2018) Marieb, Wilhelm, Mallat. Human anatomy. Eighth edition S.Hombach-Klonish, T.Klonish, JPeeler. Sobota clinical atlas of human anatomy. first edition Van putte, C.L, regan, J,L, Russo, A.f, Seeley, R.r, Stephens, T&Tate, p.(2017). Seeleys anatomy & physiology. McGraw-Hill (11th Edition)
Recommended books and references (scientific journals, reports...) Electronic References, Websites	Scientific journals Websites

Course Description Form

11-	Course Name:		
	General Physics		
12-	Course Code:		
13-	Semester / Year:		
	Semester (1) / Stage (1)		
14-	Description Preparation Date:		
	2025-2026		
15-	Available Attendance Forms:		
	Attendance		
16-	Number of Credit Hours (Total) / Number of Units (Total)		
	Total hours75 / 3 units		
17-	Course administrator's name (mention all, if more than one name)		
	Dr. Huda Razaq kitafa Email : Huda.Razaq2104p@ihcoedu.uobaghdad.edu.iq		
18-	Course Objectives		
	Course Objectives	•Give the student a perception of the material he needs in his studies in the later stages. •Learn about some advanced concepts in physics and how to use these concepts in medical sciences. •Identify some physical ideas and their applications	
19-	Teaching and Learning Strategies		
	Strategy	1- Theoretical practical application. 2- Theoretical lectures. 3- Laboratory (practical) application. 4- The use of illustrative means such as the presentation of	
		photos and videos within the scope of the study. 5- The use of electronic scientific programs and applications. 6- Seminars and seminars. 7- Switch roles and simulation. 8-	

8- Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 st	5	The student Recognizes and understands the Physical units measurement	Standard units measurement Length, Mass ,time	Explain •PowerPoint •presentation Participation and discussion	Duty MCQs
2 th	5	Recognize and understand the concepts of Electrical & Magnetic and how to link them	•Electrical Static electricity - Static Electricity - Electrodynamics - Electrical circuits - Electric Power • Magnetism - Electromagnetism - Electromagnetic induction - Electromechanical devices	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions the First week - Giving Duty MCQs
3 th	5	The student recognizes and understands Newton's laws of motion.	Newton's Laws of Motion	•Explain •PowerPoint Presentation - Participation and discussion	•Solve questions the Second week •Giving Duty MCQ
4 th	5	student Recognizes and understands the Laws of conservation of momentum	Momentum Law	•Explain •PowerPoint presentation • Participation and discussion	•Solve questions the Third week •Giving Duty MCQ
5 th	5	student Recognizes and understands the Energy Conservation Law	- Work - Energy - Types of energy - Conservation	•Explain •PowerPoint presentation • Participation and discussion	•Solve questions the Fourth week •Giving Duty MCQ

6 th	5	student Recognizes and understands the Labor Laws	The relationship between work and energy Strength Conservative forces and non-conservative forces Gravitational potential energy	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the Fifth week • Giving Duty MCQ
7 th	5	Work-energy relation Power Conservative and neoconservative forces Gravitational potential energy	work-energy relati Power Conservative and neoconservative forces Gravitational potential energy	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the Sixth Week • Giving Duty MCQ
8 th	5	student Recognizes and understands the Types transactions	Dynamics of movement Rotation Angular motion, angular velocity, angular acceleration Torque	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the seventh Week • Giving Duty MCQ
9 th	5	student Recognizes and understands the of types of movements	• Dynamics of Rotational Motion Moment of inertia Angular position, angular velocity, angular acceleration, Torque	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the eighth Week • Giving Duty MCQ
10 th	5	student Recognizes and understands the Rotational movements	- Torque-angular acceleration relatio Static equilibrium Rotational kinemat Work done by a torque	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the Ninth Week • Giving Duty MCQ

11 th	5	student Recognizes and understands the movement Rotation	-Rotational kinetic energy Angular momentum Static equilibrium experiments Rotational motion problems	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the Tenth Week • Giving Duty MCQ
12 th	5	student Recognizes and understands the Gravitational potential energy	Gravitational potential energy	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions the Eleven Week • Giving Duty MCQ

13 th	5	student Recognizes and understands the difference between heat a degree of Heat	Heat, temperature - Specific heat - Heat transfer methods	• Explain PowerPoint presentation • Participation and discussion	• Solve questions the Twelfth week • Giving Duty MCQ
14 th	5	Student Recognizes and understands the gases and Pressure law	• Gases • Pressure, volume, laws of pressure.	• Explain PowerPoint presentation • Participation and discussion	Solve questions the Thirteenth week • Giving Duty MCQ
15 th	5	student Recognizes and understands the Ohm's law	Ohm's Law	• Explain PowerPoint presentation • Participation and discussion	• Solve questions of Fourteenth week

9- Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

10- Learning and Teaching Resources

Required textbooks (curricular books, if any)	Science Introduction to Physics Modern Medicine, (Suzanne Amador 200 Radiation Medical Physicists for Physics (Ervin Poodgorasak.2006)
Main references (sources)	University Physics, volume 1,2 a 3
Recommended books and references (scientific journals, reports...)	Physics Utah Science Stander 2019
Electronic References, Websites	Science Direct, Google Scholar. W of Science

Course Description Form

13. Course Name:					
General Physiology					
14. Course Code:					
15. Semester / Year:					
Semester (1) / Stage (1)					
16. Description Preparation Date:					
2025-2026					
17. Available Attendance Forms:					
Attendance					
18. Number of Credit Hours (Total) / Number of Units (Total)					
Total Hour 75/ 3 Unit					
19. Course administrator's name (mention all, if more than one name)					
Name: Ahmed Flayyih Hasan E.mail: ahmed_flayyih@nahrainuniv.edu.iq					
20. Course Objectives					
Course Objectives		-Understand the basic functional concepts of cells and their components. -Understand osmosis of body fluids and body equilibrium. -Understand the way blood flows and gas exchange. -Understand the function of certain body systems.			
21. Teaching and Learning Strategies					
Strategy		1- Theoretical lectures. 2- Laboratory application (practical). 3- The use of illustrative means such as displaying photos and videos within the scope of the study. 4- The use of electronic scientific programs and applications. 5- Dialogue, discussion and brainstorming. 6- Switch roles and simulation.			
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	5	-The student gets acquainted with the components of the cell	Introduction to Human Physiology, Cell components and organelles. Microscope parts & uses.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on the cell – Report on microscope types

		-The student is trained to use a microscope			
2nd	5	-The student recognizes blood - The student trains the correct prick of the finger	Blood: -Blood Functions blood components: blood plasma, plasma proteins function. Finger puncture –blood smear.	-Explain -Dialogue and discussion -Brainstorming -View photos and videos -Practical training	-Oral test -Short written test -Report on blood and its components -Video about finger prick
3rd	5	-The student gets acquainted with the basic components of blood -Trains the work of the blood slide	Formed elements: leukocytes (types and function), Platelets, and Erythrocytes, Erythropoietin Role in Erythrocytes Production. Preparation of blood smear: slide method	-Explain -Dialogue and discussion -Switch role -View photos and videos -Practical training	-Oral test -Written test (quiz) -Report on erythrocyte synthesis - Report on the types of white blood cells and their mechanism of action
4th	5	-The student learns about ways to stop bleeding -The student is trained to stain the blood slide	Blood Clotting: clotting factors and Mechanism of Blood Clot Formation. Staining of blood film.	-Explain -Brainstorming -View photos and videos -Practical training	-Oral test -Short written test -Report on the role of calcium in stopping bleeding -Video about blood slide, dyeing and examination
5th	5	The student learns about the fluids inside the human body and their whereabouts -The student is trained to assign hemoglobin in Sahli's methods	Fluid Compartments in the Body: ICF,ECF, interstitial fluid and transcellular fluids, compositions of body fluids. Sahli method for hemoglobin estimation.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Written test (Midterm) -Video on the determination of hemoglobin in an easy way
6th	5	-The student learns about the types of osmosis of body fluids -The student is trained to determine	Fluid shift: Diffusion, Osmosis, hydrostatic pressure, filtration & Active Transport Across Cell Membranes. Packed cell volume (PCV).	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on the types of osmosis within the human body

		the volume of blood cells (PCV)			-Video on setting the size of the PCV RBC
7th	5	-The student learns about the different types of homeostasis -The student gets to know the circulatory system	Homeostasis: Blood glucose homeostasis, excretion homeostasis and Body Temperature Regulation. Scientific film about blood & circulating system.	Explain -Dialogue and discussion -View photos and videos	-Oral test -Written test (quiz) -Report on diabetes -Report on iron stocks
8th	5	-The student gets to know the heart and blood vessels -The student is trained to determine the blood type and the Rh factor	Heart and blood vessels: -Heart function -Blood vessels function -cardiac valves and their functions -Heart sounds. Blood grouping & Rh factor	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on blood group Video about - blood group
9th	5	-The student gets acquainted with the cardiac cycle, pulmonary circulation and various blood circulations - The student is trained to set the bleeding time	Circulations: systemic circulation, pulmonary circulation, Cardiac cycle, cardiac output, and electrical properties. Determination of Bleeding time.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Written test (quiz) -Report on the cardiac cycle -Video about the mechanism of heart work
10th	5	-The student learns about blood pressure and methods of measuring it -Determine the clotting time	Blood Pressure: -Mean arterial blood pressure and its regulation - Role of kidney in regulation blood pressure. Determination of Clotting time.	-Explain -Dialogue and discussion -Brainstorming -View photos and videos -Practical training	-Oral test -Short written test -Report on bleeding and clotting time
11th	5	-The student recognizes the ability of the lung to exchange gases - How to use the counting slide	Measurement of lung function: - Lung volumes and capacities - Exchange & transport of gases in the blood. Hemocytometry.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on the respiratory system -Video about the mechanism of lung work

12th	5	-The student recognizes the digestive system -Determine the number of red blood cells	Gastrointestinal tract: -GI tract general functions -Oral cavity function, Salivary glands function, stomach function, small intestine and large intestine function. Red blood cell count.	-Explain -Dialogue and discussion -Brainstorming -View photos and videos -Practical training	-Oral test -Written test (quiz) -Report on the small intestine
13th	5	-The student learns about the enzymes and secretions of the digestive system-Determine the number of leukocytes	Gastrointestinal tract Secretions: General characteristic of GI Secretions and their functions. Differential count of white blood cell (WBC) and Total White blood cell count.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on pancreatic enzymes
14th	5	-The student recognizes \the pregnancy -The student recognizes the bleeding and its occurrence	Physiology of Pregnancy: Parturition, stages of labor hormonal stimulation of parturition and lactation. Scientific film about bleeding & transfusion.	-Explain -Dialogue and discussion -View photos and videos	-Oral test -Short written test -Report on pregnancy
15th	5	-The student learns about the stages of fetal development -Determine the sedimentation rate	Fetal development: - The newborn - First year after birth - Aging and death. Erythrocyte sedimentation rate (ESR)	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test

23. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports..... etc

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1. Seeleys anatomy and physiology (eleven edition) Cinnamon L. VanPutte , Jennifer L. Regan , and Andrew F. Russo (2017) 2. Essentials of Human Anatomy & Physiology, Global Edition Suzanne Keller Elaine Marieb (2017) 3. Human Anatomy and Physiology, Global Edition [Sep 14, 2015] Erin, C. A merman 4. Study Guide to Human Anatomy and Physiology 1 (2012) Michael Harrell M.S.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. .Course Name	
Biochemistry	
2. Course Code	
3. Semester / Year	
Semester (1) / Stage (1)	
4. Date of preparation of this description	
2025-2026	
5. Available attendance forms	
Theoretical attendance in the classroom + practical in laboratories	
6. Total number of study hours / Total number of units	
Total number of hours75/Number of units/3	
7. Name of the course coordinator (if more than one name, list them)	
Name: Assistant Lecturer Hussam Ali Attallah	
8. Course objectives	
Objectives of the course material	1-Provide students with fundamental knowledge of protein, lipid, and carbohydrate metabolism. 2-Introduce students to enzymes in terms of structure, classification, and factors affecting them. 3-Explain the role of vitamins and coenzymes in biological processes. 4-Explain the mechanisms of hormone action and regulation within the body. 5-Enable students to understand liver and kidney function tests and interpret their laboratory results. 6-Relate biochemical changes to pathological conditions, particularly liver and kidney diseases. 7-Develop practical skills in performing basic laboratory tests (Urea, Creatinine, Enzymes, etc.). 8-Develop students' ability to analyze laboratory results and relate them to the clinical condition. 9-Reinforce occupational safety principles in laboratories.
9. Teaching and Learning Strategies	
Strategy	Teaching strategies Theoretical Lectures 1-Presenting fundamental concepts in an organized manner Using presentation aids (PowerPoint, images, diagrams) 2. Classroom Discussions Stimulating critical thinking Engaging students in information analysis 3. Case Studies Linking theoretical concepts to clinical application

	Analyzing real laboratory results 4. Practical Education (Laboratory-Based Learning) Performing laboratory experiments directly Using instruments and chemicals 5. Interactive Learning Asking questions during the lecture Using quick quizzes to assess understanding 6. Self-Learning Assigning homework and reports Encouraging research and independent reading 7. Assessment Strategy: Continuous short quizzes - Assignments and laboratory reports - -Practical examinations (OSPE) - Midterm examination -Final theoretical and practical examination
--	---

10.Course Structure					
Theoretical Component:					
Assessment Method	Teaching Method	Learning Outcomes	Topic	Hours	Week
Test	Lecture	Explain the disorders and their effects	Disorders of Protein Metabolism	2	1
Test	Lecture	Define and classify enzymes	Enzymes	2	2
Assignment	Lecture	Explain inhibition	Factors Affecting Enzymes	2	3
Test	Discussion	Relate them to diseases	Enzymes in Diagnosis	2	4
Test	Lecture	Differentiate the types	Vitamins	2	5
Assignment	Lecture	Explain requirements	Nutrition and Energy	2	6
Test	Lecture	Explain the types	Hormones	2	7
Test	Lecture	Interpret the tests	Liver Function	2	8

Test	Lecture	Differentiate diseases	Liver Diseases	2	9
Assignment	Lecture	Analyze changes	Liver Enzymes	2	10
Test	Lecture	Explain pathways	Lipid Metabolism	2	11
Test	Lecture	Explain metabolism	Steroids and Nitrogen	2	12
Test	Lecture	Explain GFR	Kidney Function	2	13
Assignment	Lecture	Explain formation	Urine Formation	2	14
Final Examination	Lecture	Interpret results	Kidney Tests	2	15

Practical Component:

Assessment Method	Learning Method	Learning Outcomes	Experiment	Hours	Week
Report	Laboratory	Measure protein	Total Protein	3	1
Test	Laboratory	Measure urea	Urea	3	2
Report	Laboratory	Measurement	Uric Acid	3	3
Test	Laboratory	Measurement	Creatinine	3	4
Report	Laboratory	Measurement	Phosphorus	3	5
Test	Laboratory	Measurement	Amylase	3	6
Report	Laboratory	Measurement	Lipase	3	7
Test	Laboratory	Measurement	ALP	3	8
Report	Laboratory	Measurement	ACP	3	9
Test	Laboratory	Measurement	ALT	3	10
Report	Laboratory	Measurement	AST	3	11
Test	Laboratory	Measurement	Vitamin C	3	12
Report	Laboratory	Measurement	Bilirubin	3	13
Practical Examination	Laboratory	Complete examination	Urinalysis	3	14
Final Examination	Laboratory	Analyze stones	Stone Analysis	3	15

11.Course Assessment

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

(40) coursework marks: 25 theoretical + 15 practical

(60) final examination marks: 35 theoretical + 25 practical

12.Learning and Teaching Resources

Required Textbooks (if any)	— Lehninger Principles of Biochemistry — Harper's Illustrated Biochemistry
Main References (Sources)	— Fundamentals of Biochemistry: Life at the Molecular Level — Biochemistry — Textbook of Biochemistry with Clinical Correlations
Recommended Supporting Books and References (scientific journals, reports, etc.)	— Journal of Biological Chemistry — Clinical Chemistry — Nature Reviews Molecular Cell Biology — Scientific Reports: - World Health Organization (WHO) Reports - Recent Clinical Laboratory Reports
Electronic References and Websites	— PubMed - For searching the latest medical and biochemical research — National Center for Biotechnology Information (NCBI) - A reliable source for articles and studies — Google Scholar - For general academic searching — World Health Organization (WHO) - Global health information and reports

Course Description Form

13. Course Name:	
Chemistry	
14. Course Code:	
15. Semester/Year:	
Semester (1)/ Stage (1)	
16. Date of Preparation of this Description:	
2025-2026	
17. Available Attendance Options:	
Full-time in-person classes	
18. Total Credit Hours/Total Units:	
Total Hours 75 /3 Units	
19. Name of Course Coordinator (If more than one, please specify)	
Name: M.M. Hossam Ali Atallah Saeed Email:	
1. Course objectives	
Objectives of the course material	- To provide students with fundamental knowledge about the metabolism of proteins, fats, and carbohydrates. - To introduce students to enzymes in terms of their structure, classification, and the factors that influence them. - To clarify the role of vitamins and coenzymes in biological processes. - To explain the mechanisms of hormone action and regulation within the body. - To enable students to understand liver and kidney function tests and interpret their results in the laboratory. - To link biochemical changes to pathological conditions (especially liver and kidney diseases). - To develop practical skills in performing basic laboratory tests (urea, creatinine, enzymes, etc.). - To develop students' ability to analyze laboratory results and relate them to clinical cases. - To promote occupational safety practices within laboratories. 5-Enable students to understand liver and kidney function tests and interpret their laboratory results. 6-Relate biochemical changes to pathological conditions, particularly liver and kidney diseases. 7-Develop practical skills in performing basic laboratory tests (Urea, Creatinine, Enzymes, etc.). 8-Develop students' ability to analyze laboratory results and relate them to the clinical condition. 9-Reinforce occupational safety principles in laboratories.
10. Teaching and Learning Strategies	
Strategy	1- Theoretical Lectures Presenting fundamental concepts in a structured manner Using presentation aids (PowerPoint, images, diagrams) 2.Classroom Discussions Stimulating critical thinking Engaging students in information

	analysis 3. Case Studies Bridging theory to clinical application Analyzing real-world laboratory results Laboratory-Based Learning Conducting laboratory experiments directly Using equipment and chemicals Interactive Learning Asking questions during lectures Using quick quizzes to assess understanding Self-Learning Assigning students homework and reports Encouraging research and external reading Assessment Strategy: •Ongoing quizzes •Laboratory assignments and reports •OSPE (On-the-Job Examination) •Midterm exam, Final theoretical and practical exam
--	--

10. Course Structure

Theoretical Component:

Assessment Method	Teaching Method	Learning Outcomes	Topic	Hours	Week
	Lecture	Explanation of disorders and their effects	Disorders of Protein Metabolism	2	1
Test	Lecture	Definition of enzyme classification	Enzymes	2	2
Assignment	Lecture	Explanation of non-inhibition	Factors Affecting Enzymes	2	3
Test	Discussion	Relationship to diseases	Enzymes in Diagnosis	2	4
Test	Lecture	Distinguishing their types	Vitamins	2	5
Assignment	Lecture	Explanation of needs	Nutrition and Energy	2	6
Test	Lecture	Explanation of their types	Hormones	2	7
Test	Lecture	Interpret the tests	Liver Function	2	8
Test	Lecture	Differentiate diseases	Liver Diseases	2	9
Assignment	Lecture	Analyze changes	Liver Enzymes	2	10
Test	Lecture	Explain pathways	Lipid Metabolism	2	11
Test	Lecture	Explain metabolism	Steroids and Nitrogen	2	12
Test	Lecture	Explain GFR	Kidney Function	2	13
Assignment	Lecture	Explain	Urine	2	14

		formation	Formation		
Final Examination	Lecture	Interpret results	Kidney Tests	2	15

Practical Component:

Assessment Method	Learning Method	Learning Outcomes	Experiment	Hours	Week
Report	Laboratory	Measure protein	Total Protein	3	1
Test	Laboratory	Measure urea	Urea	3	2
Report	Laboratory	Measurement	Uric Acid	3	3
Test	Laboratory	Measurement	Creatinine	3	4
Report	Laboratory	Measurement	Phosphorus	3	5
Test	Laboratory	Measurement	Amylase	3	6
Report	Laboratory	Measurement	Lipase	3	7
Test	Laboratory	Measurement	ALP	3	8
Report	Laboratory	Measurement	ACP	3	9
Test	Laboratory	Measurement	ALT	3	10
Report	Laboratory	Measurement	AST	3	11
Test	Laboratory	Measurement	Vitamin C	3	12
Report	Laboratory	Measurement	Bilirubin	3	13
Practical Examination	Laboratory	Complete examination	Urinalysis	3	14
Final Examination	Laboratory	Analyze stones	Stone Analysis	3	15

11.Course Assessment

The grade is distributed out of 100 according to assigned student tasks such as daily preparation, daily, oral, monthly and written examinations, reports, etc. (40) coursework marks: 25 theoretical + 15 practical
(60) final examination marks: 35 theoretical + 25 practical

12.Learning and Teaching Resources

Required Textbooks (if any)	● Lehninger Principles of Biochemistry ● Harper's Illustrated Biochemistry
Main References (Sources)	● Fundamentals of Biochemistry: Life at the Molecular Level ● Biochemistry ● Textbook of Biochemistry with Clinical Correlations
Recommended Supporting Books and References (scientific journals, reports, etc.)	● Journal of Biological Chemistry ● Clinical Chemistry ● Nature Reviews Molecular Cell Biology ● تقارير علمية: WHO(تقارير منظمة الصحة العالمية)

	تقارير المختبرات السريرية الحديثة
Electronic References and Websites	● PubMed للبحث عن أحدث الأبحاث الطبية والبيوكيميائية ● National Center for Biotechnology Information (NCBI) مصدر موثوق للمقالات والدراسات ● Google Scholar للبحث الأكاديمي العام ● World Health Organization (WHO) معلومات وتقارير صحية عالمية

Course Description Form

11..Course Name	
Computer Fundamentals	
2. Course Code	
3. Semester/Year	
Semester 1/First Year	
4. Date of Preparation of this Description	
2025-2026	
5. Available Attendance Methods	
Classrooms and Laboratories	
6. Total Credit Hours/Total Units	
Total Hours 45/2 Units	
7. Name of Course Instructor (If more than one, please specify)	
Name: Haider Mahmoud Hassan	
12.Course objectives	
Objectives of the course material	1. To understand the concept of the computer, its development, and its importance in academic and professional life. 2. To understand computer hardware and software components, their uses, and types. 3. To understand the basics of operation and acquire skills in working with files. 4. To learn the basics of Microsoft Office 5. To develop students' skills in using computers for study and work.
13.Teaching and Learning Strategies	
Strategy	Lectures and video presentations (PPT) to enhance knowledge - Brainstorming strategy - Teamwork strategy - Discussion strategy

10.Course Structure						
Theoretical Component:						
	Assessment Method	Teaching Method	Learning Outcomes	Topic	Hours	Week
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Introduction to Computers: Hardware, Software, Data and Information	Theoretical and Practical Knowledge	3	1
	Quarterly and weekly tests	Attendance includes lectures and open	Computer Components	Theoretical and	3	2

		discussions between students and professors.	and System Unit	Practical Knowledge			
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Input/Output Devices and Peripheral Devices	Theoretical and Practical Knowledge	3	3	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Memory Types and Storage Devices	Theoretical and Practical Knowledge	3	4	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	CPU Components and Functions	Theoretical and Practical Knowledge	3	5	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Computer Ports and Connectivity	Theoretical and Practical Knowledge	3	6	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Personal Computer Types and Features	Theoretical and Practical Knowledge	3	7	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Operating Systems: Concepts, Functions and Components	Theoretical and Practical Knowledge	3	8	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Common Operating Systems	Theoretical and Practical Knowledge	3	9	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Graphical User Interface (GUI)	Theoretical and Practical Knowledge	3	10	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Files, Folders and Directories	Theoretical and Practical Knowledge	3	11	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between	Keyboard Shortcuts and Desktop	Theoretical and Practical	3	12	

		students and professors.	Management	Knowledge			
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	File and Folder Management	Theoretical and Practical Knowledge	3	13	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Computer Security and Safe Computing	Theoretical and Practical Knowledge	3	14	
	Quarterly and weekly tests	Attendance includes lectures and open discussions between students and professors.	Comprehensive Review and Practical Applications	Theoretical and Practical Knowledge	3	15	

11.Course Assessment

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

12.Learning and Teaching Resources

Required Textbooks (if any)	1. Graham Brown, David Watson, "Cambridge IGCSE Information and Communication Technology", 3rd Edition (2020)
Main References (Sources)	2. Alan Evans, Kendall Martin, Mary Anne Patsy, "Technology in Action complete"
Recommended Supporting Books and References (scientific journals, reports, etc.)	Ahmed Banafa, "Introduction to Artificial Intelligence (AI)", 1st Edition (2026). Microsoft office 2019-step by Step 1st Edition by Curtis Frye & Joan Lambert. "اساسيات الحاسوب " الخضر علي الخضر بحث 2016 " الدكتور عادل عبد النور "مدخل الى عالم الذكاء الاصطناعي
Electronic References and Websites	

Course Description Template

1. Course Name					
Human Rights					
2. Course Code					
3. Semester/Year					
Semester (1)/ Stage (1)					
4. Date of Preparation of this Description					
2026					
5. Available Attendance Formats					
In-Person					
6. Total Credit Hours / Total Units					
Total Hours 30/ 2 units					
7. Name of Course Instructor (If more than one, please specify)					
Name: M.M. Majid Jassim Nayef					
1. Course Objectives					
Course Objectives General Objective: Students will learn about the historical development of human rights in the first semester, as well as democracy, its types, and the types of freedoms.			Specific Objective: Students will learn about the historical development of human rights and the role of international organizations in ensuring their protection and respect in the first semester. They will also learn about democracy, its types, its impact on developing countries, and the types and future of freedoms. This will enable students in the Radiology Technology Department to understand human rights and the principles of democracy.		
14. Teaching and Learning Strategies					
Strategy			1. Discussions and dialogues within the classroom 2. Theoretical lectures and presentations. 3. Direct questioning and active learning.		
15. Course Structure					
Assessment Method	Learning Method	Unit or Topic Name	Required Learning Outcomes	Hours	Week
Discussion	Lecture	The Concept of Human Rights ▪ Definition of Human Rights ▪ Definition of a Right ▪ Definition of a Human Being	To learn about human rights	2	First
Discussion	Lecture	Key Characteristics of Human Rights	To learn about human rights	2	Second
Discussion	Lecture	Types of Human Rights ▪ By Importance ▪ By Persons ▪ By Subject Matter	To learn about human rights	2	Third

Test	Lecture	Categories of Human Rights ▪ First Generation: Civil and Political Rights ▪ Second Generation: Economic, Social, and Cultural Rights ▪ Third Generation: Environmental, Cultural, and Developmental Rights	To learn about human rights	2	Fourth
Discussion	Lecture	Human Rights in Ancient Civilizations	To learn about types of rights	2	Fifth
Discussion	Lecture	▪ Mesopotamian Civilization ▪ Indian and Chinese Civilizations ▪ Pharaonic Egyptian Civilization ▪ Greek Civilization ▪ Roman Civilization	To learn about human rights	2	Sixth
Discussion	Lecture	Human Rights in the Middle Ages	To learn about types of civil rights	2	Seventh
Test	Lecture	Human Rights in Renaissance Societies ▪ The Magna Carta (1215) ▪ Petition of Rights (1628) ▪ Bill of Rights (1679) ▪ Declaration of the Rights of Man and of the Citizen ▪ Contribution Thinkers (Hobbes, John Locke, Rousseau, Voltaire, Montesquieu, and others): ▪ The Declaration of Independence in the United States of America ▪ The French Revolution and the Declaration of the Rights of Man	To learn about human rights	2	Eighth
Discussion	Lecture	To learn about rights in ancient civilizations	To learn about rights in ancient civilizations	2	Ninth
Discussion	Lecture	Human Rights in Modern Times ▪ The October Socialist Revolution in Russia in 1917 (the Bolshevik Revolution) ▪ The Covenant of the League of Nations and	To learn about human rights	2	Tenth

		Human Rights ▪ The Universal Declaration of Human Rights of 1948			
Discussion	Lecture	Human Rights in Modern Times ▪ The Charter of the United Nations of 1954 ▪ The two International Covenants on Human Rights	To learn about rights in the Middle Ages	2	Eleventh
Discussion	Lecture	Non-Governmental Organizations and Human Rights ▪ The International Committee of the Red Cross ▪ Amnesty International ▪ Human Rights Watch ▪ National Human Rights Organizations	To learn about human rights	2	Twelfth
Discussion	Lecture	Guarantees for Respect and Protection of Human Rights at the National and International Levels ▪ Constitutions and Laws ▪ Freedom of the Press and Public Opinion ▪ Civil Society Organizations ▪ Regional Organizations (the League of Arab States, the European Union) - Organization of American States (OAS) ▪ United Nations and its specialized agencies	To learn about rights in religions	2	Thirteenth
Test	Lecture	Awareness in Iraq ▪ The general concept of awareness ▪ Means of achieving awareness ▪ Dimensions of water awareness ▪ Uses of water awareness Water and Environmental Awareness in Iraq	To learn about human rights	2	Fourteenth
Discussion	Lecture	Challenges facing water awareness ▪ Proposed measures to solve the freshwater shortage crisis The concept of equality	To learn about types of rights in	2	Fifteenth

		▪ The historical development of the concept of equality ▪ The modern development of the idea of equality ▪ Gender equality ▪ Equality among individuals according to their belief			
--	--	--	--	--	--

10. Course Evaluation

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

1. Learning and Teaching Resources

Ministry of Higher Education and Scientific Research, Iraq, Human Rights and Democracy Curriculum, Baghdad 2025. Republic of Iraq, Constitution of the Republic of Iraq, 2005.	Required textbooks (methodology, if applicable)
United Nations, Universal Declaration of Human Rights, 1948. United Nations, International Covenant on Civil and Political Rights, 1966. United Nations, International Covenant on Economic, Social and Cultural Rights, 1966	Main references (sources)
United Nations, Convention on the Rights of the Child, 1989. United Nations, Convention on the Elimination of All Forms of Discrimination against Women, 1979. United Nations, Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment, 1984.	Recommended supporting books and references (scientific journals, reports, etc.)
	Electronic resources, websites

Course Description Form

16.Course Name	
English Language	
1. Course Code	
2. Semester/Year	
Semester 1/First Year	
3. Date of Preparation of this Description	
2025-2026	
4. Available Attendance Forms	
In-person (Classroom)	
5. Total Credit Hours / Total Units	
Total Hours 30 / Units 2	
6. Name of Course Instructor (If more than one, please specify)	
Name: Dr. Ali Khalid Aboud Majeed	
17.Course objectives	
Objectives of the course material	Course Objectives: General Objective: 1. To provide a clear overview of linguistics and its history. 2. To help the student become familiar with some common linguistic concepts and how to acquire a native and foreign language. 3. To help the student understand the relationship of language to society and other sciences.
18.Teaching and Learning Strategies	
Strategy	aching strategie It includes all teaching procedures and educational practices that aim to activate the student's role and transform him from a recipient and listener of information to a central focus in his learning process, where learning takes place through work, research, and the student's self-reliance in acquiring knowledge .Engaging students in information analysis

10.Course Structure					
Theoretical Component:					
Assessment Method	Teaching Method	Learning Outcomes	Topic	Hours	Week
Discussion	Theoretical lecture	History of linguistic and its origins	Understanding and comprehension	2+2	1+2
Homework	Theoretical lecture	Phonetics and phonology of English language	Understanding and comprehension	2+2	3+4
Quiz	Theoretical lecture	Syntax of English language	Understanding and comprehension	2+2	5+6
Discussion	Theoretical lecture	Morphology of English language	Understanding and comprehension	2+2	7+8

Quiz	Theoretical lecture	semantics	Understanding and comprehension	2+2	9+10
Homework	Theoretical lecture	pragmatics	Understanding and comprehension	2+2	11+12
Written Exam	Theoretical lecture	Discourse analysis	Understanding and comprehension	2+2	13+14
Discussion	Theoretical lecture	First language acquisition	Understanding and comprehension	2	15

11.Course Assessment

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

12.Learning and Teaching Resources

Required Textbooks (if any)	Reference guide to English	
Main References (Sources)	Oxford English language reference	
Recommended Supporting Books and References (scientific journals, reports, etc.)	English handbook and study guide	
Electronic References and Websites	Required Texts	New Headway Plus for Pre-intermediate
	Recommended Texts	Think Big (Required book)
	Websites	www.youtube.com

Course Description Form

13. Course Name:	
Anatomy of Body Systems	
14. Course Code:	
15. Semester / Year:	
Second semester\ Stage (1)	
16. Description Preparation Date:	
2026	
17. Available Attendance Forms:	
Presence	
18. Number of Credit Hours (Total) / Number of Units (Total)	
Total hours 30 / (2) Units	
19. Course administrator's name (mention all, if more than one name)	
Name: Professor Dr. Abdaladeem Yousif Jasem Email: abdulazim.yusuf@alfarabiuc.edu.iq	
20. Course Objectives	
Course Objectives	- Identify basic anatomical terminology, directions and planes. - Describe the normal anatomical organization of human body systems. - Locate major organs and explain their anatomical relationships. - Describe the principal components of each body system. - Relate basic anatomical knowledge to radiography, ultrasound and medical imaging applications.
21. Teaching and Learning Strategies	
Strategy	- Classroom Discussion and Debates - Lectures and presentations - Practical sessions using anatomical models - Questioning and active learning - Correlation with radiographic and ultrasound images

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Identify basic anatomical terminology, body position, planes and directional terms	Introduction to Human Anatomy, Anatomical Terminology, Planes and Positions	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
2	2	Identify bone types and the major components of the axial skeleton	Skeletal System: Axial Skeleton	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
3	2	Identify appendicular	Appendicular	Lectures	-Theory

		bones and major joints and their anatomical relationships	Skeleton and Joints	Practical sessions Classroom discussion	exam. -Practical exam. -Class activities
4	2	Identify muscle types and major muscle groups of the body	Muscular System	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
5	2	Describe the anatomy of the heart, chambers, valves and major blood vessels	Cardiovascular System: Heart and Major Blood Vessels	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
6	2	Identify the components of the respiratory system and anatomical relations of the lungs	Respiratory System	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
7	2	Identify the parts of the gastrointestinal tract and their anatomical relationships	Digestive System I: Gastrointestinal Tract	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
8	2	Identify the anatomy of the liver, gallbladder, pancreas and spleen	Digestive System II: Liver, Gallbladder, Pancreas and Spleen	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
9	2	Describe the anatomy of the kidneys, ureters, urinary bladder and urethra	Urinary System	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
10	2	Identify the components and anatomical relationships of the male reproductive system	Male Reproductive System	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
11	2	Identify the components and anatomical relationships of the female reproductive system	Female Reproductive System	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class

					activities
12	2	Describe the anatomy of the brain, spinal cord and meninges	Nervous System I: Brain and Spinal Cord	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
13	2	Identify the peripheral and autonomic nervous systems and major special sense organs	Nervous System II: Peripheral and Autonomic Nervous Systems; Special Senses	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
14	2	Identify the major endocrine glands and their anatomical locations	Endocrine System	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities
15	2	Integrate knowledge of body systems and identify basic anatomical landmarks in radiography and ultrasound	General Review and Applied Anatomy for Radiography and Ultrasound	Lectures Practical sessions Classroom discussion	-Theory exam. -Practical exam. -Class activities

23. Course Evaluation

- Second semester: 10% theoretical + 3% student reports and activities and quick surprise exams + 5% practical + 2% student participation in practical laboratory application = 20%

- Final exam: 60%

Total final grade = 100%

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	None
Main references (sources)	1. Moore, K. L., Dalley, A. F., & Agur, A. M. R. Clinically Oriented Anatomy. Wolters Kluwer. 2. Drake, R. L., Vogl, W., & Mitchell, A. W. M. Gray's Anatomy for Students. Elsevier. 3. Netter, F. H. Atlas of Human Anatomy. Elsevier.
Recommended books and references (scientific journals, reports...) Electronic References, Websites	Google Scholar Radiopaedia

Course Description Form

11-	Course Name:
	Physics of atom
12-	Course Code:
13-	Semester / Year:
	Semester(2) / Stage (1)
14-	Description Preparation Date:
	2026
15-	Available Attendance Forms:
	Attendance
16-	Number of Credit Hours (Total) / Number of Units (Total)
	75 hours / 21 units
	17-Course administrator's name (mention all, if more than one name)
	Dr. Huda Razaq kitafa Email : Huda.Razaq2104p@ihcoedu.uobaghdad.edu.iq
18-	Course Objectives
Course Objectives	• Give the student a perception of the material he needs in his studies in the later stages. • Learn about some advanced concepts in physics and how to use these concepts in medical sciences. • Identify some physical ideas and their applications
19-	Teaching and Learning Strategies
Strategy	1- Theoretical practical application. 2- Theoretical lectures. 3- Laboratory (practical) application. 4- The use of illustrative means such as the presentation of

	photos and videos within the scope of the study. 5- The use of electronic scientific programs and applications. 6- Seminars and seminars. 7- Switch roles and simulation.				
8- Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 st	6	Recognizes and understands the student Atomic and Nuclear Structure	Atomic and Nuclei Structure. -Fundamental particles -Nuclear Binding energy -Nuclear Stability Auger electrons	•Explain •PowerPoint presentation Participation and discussion	Giving Duty MCQs
2 th	6	Recognize and understand the concepts Radioactive Decay	•-Radioactive Decay •-Radioactive materials •-Activity •-Half life	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions First week Giving Duty MCQs
3 th	6	The student recognizes and understands Types of radiation	• Types of radiation Alpha particles Beta particles Gamma radiation	• Explain • PowerPoint presentation • Participation and discussion	•Solve questions Second week •Giving Duty MCQ
4 th	6	Recognizes understands student Classification of Radiation	•Classification Radiation Electromagnetic radiation Particulate radiation Ionizing and non ionizing radiations	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions Third week •Giving Duty MCQs
5 th	6	Recognizes understands student	- • Matter and energy Interactions photons with matt	•Explain •PowerPoint presentation	•Solve questions Fourth week

		Matter and energy	• Mechanisms Energy Loss -Photoelectric effect -Thomson scatter -Coherent (Rayleigh scattering)	•Participation and discussion	•Giving Duty MCQs
6 th	6	Recognizes Understands student Compton scattering	Compton scattering by free electrons Scattering and energy transfer coefficients stopping power	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions Fifth week •Giving Duty MCQs
7 th	6	Recognizes understands student Photon Attenuation Coefficients	• Photon Attenuation Coefficients - Linear attenuation coefficient -Exponential attenuation -Mass attenuation coefficient - Energy-Absorption coefficient	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions Week Six •Giving Duty MCQs
8 th	6	Recognizes Understands student Interactions electrons matter	• Interactions of electrons with matter - Ionization (collisional) interactions - Radiative Interactions -stopping power	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions Week seven •Giving Duty MCQs
9 th	6	Recognizes understands student Nanomaterials	Introduction of Nanomaterials -Properties of nanoparticles - Types of nanoparticles	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions Week eight •Giving Duty MCQs

10th	6	Recognizes understands student Synthesis	- Synthesis Routes Bottom-Up Approaches - Top-Down Approaches	• Explain PowerPoint presentation • Participation and discussion	• Solve questions Week seven • Giving Duty MCQs
------------------------	----------	---	--	---	--

		Routes Nanomaterials	- Applications of nanomaterials in medicine & biolog		
11th	6	Recognizes Understands student Nanotechnology renewable energy systems	-Nanotechnology i renewable energy systems Energy transport, conversion and storage - Nano, mic and meson scale phenomena and Devices.	• Explain PowerPoint presentation • Participation and discussion	• Solve questions Week Ten • Giving Duty MCQs
12th	6	Recognizes understands student Nanotechnology Hydrogen Production	Nanotechnology to Hydrogen Production	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions Week Eleven • Giving Duty MCQs
13th	6	Recognizes understands student Conversion Carbon Dioxin into Renewal Fuels	• • Nanomaterials f the Conversion of Carbon Dioxide into Renewable Fuels a Value-Added Products Theoretical Potentials for Electrochemical Reduction of CO2 Effect of Particle Si on Electrode Performance in Electrochemical CO Reduction Reaction	• Explain • PowerPoint presentation • Participation and discussion	• Solve questions Week Twelfth • Giving Duty MCQs

14th	6	Recognizes understands student The role nanotechnology	The role of nanotechnology or post-combustion CO2 absorption in process industries	•Explain •PowerPoint presentation •Participation and discussion	•Solve questions Thirteenth week •Giving Duty MCQs
15th	6	Recognizes understands student	• Solar energy technology	•Explain •PowerPoint presentation	•Solve questions

		Solar energy technology		•Participation and discussi	Fourteenth week
9- Course Evaluation					
Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reportsetc					
10- Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Perry Sprawls, "Physical principles of medical imaging", 2 Edition 1996. .Allisy-Roberts PJ, Williams J. Farr's "physics for medical imaging". Elsevier Health Sciences; 2007 Nov 14.		
Main references (sources)			.Chris Guy & Dominic ffytche "An Introduction to The Principles of Medical Imaging Revised Edition, Imperial College Press, London.(2005) , .Sang Hyun Cho, Sunil Krishnan, MD, "Cancer Nanotechnology Principles and Applications in Radiation Oncology", In: Imaging in medical diagnosis and Therapy, William R. Hendee Series Editor; Taylor & Francis Group, LLC.(2013)		
Recommended books and references (scientific journals, reports...)			Twidell. J, Weir. T, "Renewable Energy Resources", E & F N Spon Ltd, 2nd Edition.		
Electronic References, Websites			Baldev Raj, Marcel Van de Voorde, Yashwant Mahajan, "Nanotechnology for Energy Sustainability", ISBN: 978-3-527-34014-9 2017. Kreith.J.F, Solar Energy Handbo McGrawHill.		

Course Description Form

13. Course Name:					
Functional physiology					
14. Course Code:					
15. Semester / Year:					
Semester (2)/ Stage (1)					
16. Description Preparation Date:					
2026					
17. Available Attendance Forms:					
Attendance					
18. Number of Credit Hours (Total) / Number of Units (Total)					
Total Hour 75 / 3 Unit					
19. Course administrator's name (mention all, if more than one name)					
Name: Ahmed Flayyih Hasan Email: ahmed_flayyih@nahrainuniv.edu.iq					
20. Course Objectives					
Course Objectives		-Understand the basic functional concepts of cells and their components. -Understand osmosis of body fluids and body equilibrium. -Understand the way blood flows and gas exchange. -Understand the function of certain body systems.			
21. Teaching and Learning Strategies					
Strategy	1- Theoretical lectures. 2- Laboratory application (practical). 3- The use of illustrative means such as displaying photos and videos within the scope of the study. 4- The use of electronic scientific programs and applications. 5- Dialogue, discussion and brainstorming. 6- Switch roles and simulation.				
22. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	5	-The student gets acquainted with the components of the cell	Introduction to Human Physiology, Cell components and organelles. Microscope parts & uses.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on the cell – Report on microscope types

		-The student is trained to use a microscope			
2nd	5	-The student recognizes blood - The student trains the correct prick of the finger	Blood: -Blood Functions blood components: blood plasma, plasma proteins function. Finger puncture –blood smear.	-Explain -Dialogue and discussion -Brainstorming -View photos and videos -Practical training	-Oral test -Short written test -Report on blood and its components -Video about finger prick
3rd	5	-The student gets acquainted with the basic components of blood -Trains the work of the blood slide	Formed elements: leukocytes (types and function), Platelets, and Erythrocytes, Erythropoietin Role in Erythrocytes Production. Preparation of blood smear: slide method	-Explain -Dialogue and discussion -Switch role -View photos and videos -Practical training	-Oral test -Written test (quiz) -Report on erythrocyte synthesis - Report on the types of white blood cells and their mechanism of action
4th	5	-The student learns about ways to stop bleeding -The student is trained to stain the blood slide	Blood Clotting: clotting factors and Mechanism of Blood Clot Formation. Staining of blood film.	-Explain -Brainstorming -View photos and videos -Practical training	-Oral test -Short written test -Report on the role of calcium in stopping bleeding -Video about blood slide, dyeing and examination
5th	5	The student learns about the fluids inside the human body and their whereabouts -The student is trained to assign hemoglobin in Ashli's methods	Fluid Compartments in the Body: ICF,ECF, interstitial fluid and transcellular fluids, compositions of body fluids. Ashli method for hemoglobin estimation.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Written test (Midterm) -Video on the determination of hemoglobin in an easy way
6th	5	-The student learns about the types of osmosis of body fluids -The student is trained to determine	Fluid shift: Diffusion, Osmosis, hydrostatic pressure, filtration & Active Transport Across Cell Membranes. Packed cell volume (PCV).	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on the types of osmosis within the human body

		the volume of blood cells (PCV)			-Video on setting the size of the PCV RBC
7th	5	-The student learns about the different types of homeostasis -The student gets to know the circulatory system	Homeostasis: Blood glucose homeostasis, excretion homeostasis and Body Temperature Regulation. Scientific film about blood & circulating system.	- Explain -Dialogue and discussion -View photos and videos	-Oral test -Written test (quiz) -Report on diabetes -Report on iron stocks
8th	5	-The student gets to know the heart and blood vessels -The student is trained to determine the blood type and the Rh factor	Heart and blood vessels: -Heart function -Blood vessels function - cardiac valves and their functions - Heart sounds. Blood grouping & Rh factor	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on blood group - Video about - blood group
9th	5	-The student gets acquainted with the cardiac cycle, pulmonary circulation and various blood circulations - The student is trained to set the bleeding time	Circulations: systemic circulation, pulmonary circulation, Cardiac cycle, cardiac output, and electrical properties. Determination of Bleeding time.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Written test (quiz) -Report on the cardiac cycle -Video about the mechanism of heart work
10th	5	-The student learns about blood pressure and methods of measuring it -Determine the clotting time	Blood Pressure: -Mean arterial blood pressure and its regulation - Role of kidney in regulation blood pressure. Determination of Clotting time.	-Explain -Dialogue and discussion -Brainstorming -View photos and videos -Practical training	-Oral test -Short written test -Report on bleeding and clotting time
11th	5	-The student recognizes the ability of the lung to exchange gases - How to use the counting slide	Measurement of lung function: - Lung volumes and capacities - Exchange & transport of gases in the blood. Hem cytometry.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on the respiratory system -Video about the mechanism of lung work

12th	5	-The student recognizes the digestive system -Determine the number of red blood cells	Gastrointestinal tract: -GI tract general functions -Oral cavity function, Salivary glands function, stomach function, small intestine and large intestine function. Red blood cell count.	-Explain -Dialogue and discussion -Brainstorming -View photos and videos -Practical training	-Oral test -Written test (quiz) -Report on the small intestine
13th	5	-The student learns about the enzymes and secretions of the digestive system -Determine the number of leukocytes	Gastrointestinal tract Secretions: General characteristic of GI Secretions and their functions. Differential count of white blood cell (WBC) and Total White blood cell count.	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test -Report on pancreatic enzymes
14th	5	-The student recognizes the pregnancy -The student recognizes the bleeding and its occurrence	Physiology of Pregnancy: Parturition, stages of labor hormonal stimulation of parturition and lactation. Scientific film about bleeding & transfusion.	-Explain -Dialogue and discussion -View photos and videos	-Oral test -Short written test -Report on pregnancy
15th	5	-The student learns about the stages of fetal development -Determine the sedimentation rate	Fetal development: - The newborn - First year after birth - Aging and death. Erythrocyte sedimentation rate (ESR)	-Explain -Dialogue and discussion -View photos and videos -Practical training	-Oral test -Short written test

23. Course Evaluation

Distributing the score out of 100 according to the tasks assigned to the student such as daily preparation, daily oral, monthly, or written exams, reports etc

24. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	
Main references (sources)	1. Seeleys anatomy and physiology (eleven edition) Cinnamon L. VanPutte , Jennifer L. Regan , and Andrew F. Russo (2017) 2. Essentials of Human Anatomy & Physiology, Global Edition Suzanne Keller Elaine Marieb (2017) 3. Human Anatomy and Physiology, Global Edition [Sep 14, 2015] Erin, C. Amerman 4. Study Guide to Human Anatomy and Physiology 1 (2012) Michael Harrell M.S.
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

Course Description Form

1. .Course Name

Radiobiology	
2. Course Code	
3. Semester / Year	
Semester(2) / Stage (1)	
4. Date of preparation of this description	
2026	
5. Available attendance forms	
Theoretical attendance in the classroom + practical in laboratories	
6. Total number of study hours / Total number of units	
Total number of hours 90hr. Number of units /4	
7. Name of the course coordinator (if more than one name, list them)	
Name: Assistant Lecturer Hussam Ali Attallah	
8. Course objectives	
Objectives of the course material	1- Understand the radiobiological effect of radiation on cells, tissues. 2- Understand the different responses of normal and tumor cells to radiation effect. 3- Study the effect of ionization radiation in radiotherapy.
9. Teaching and Learning Strategies	
Strategy	Teaching strategie Theoretical Lectures 1- Introduction to Radiobiology and Radiation chemistry: 2- Radio Protectors (DMF) Irradiation-induced damage and the DNA damage response. 3- Molecular Repair of DNA Damage 4- Radiobiology of Tissue and Organs Response to Radiation Radiobiology of Tissue and Organs Response to Radiation 5- Bio risk and biohazards Control of substances hazardous to health 6- Types of biological wastes Categories of biological wastes 7- Transportation of biological wastes

10.Course Structure					
Theoretical Component:					
Assessment Method	Teaching Method	Learning Outcomes	Topic	Hours	Week
Test	Lecture	Understanding radiobiology and the	Introduction to Radiobiology Radiation chemistry:	6	1

		effects of radiation in our environment	Initial physical event Radiolysis of water Direct Effect of Radiation Indirect Effect of Radiation		
Test	Lecture	Understanding the effects of radiation exposure on cells	●Oxygen Effect (OER) - Radio sensitizers - Radio Protectors (DMF) - Irradiation-induced damage and the DNA damage response - The DNA damage response - Sensors of damage	6	2
Assignment	Lecture	Understanding the mechanism of cell death when exposed to radiation	Cell death after irradiation: programmed cell death Apoptosis Autophagy Necrosis, Senescence mitotic catastrophe	6	3
Test	Discussion	Understanding the mechanism of cell death when exposed to radiation	●Molecular Repair of DNA Damage -Base Excision Repair -Homologous Recombination -Nonhomologous and Joining ● Target theory -Single target -Single hit, -Multiple target- single hit	6	4
Test	Lecture	Understanding the mechanism of cell regeneration and the target theory	Cell survival curves Recovery Cell-Cycle Effects Radiation Effect Modification Types of Cellular Damage due to Radiation Lethal Damage Potential Lethal Damage	6	5
Assignment	Lecture	Understanding cell survival and recovery curves	Radiobiology of Tissue and Organs Response to Radiation The Most Sensitive Sensitive Moderately Sensitive Less Sensitive	6	6
Test	Lecture	Understanding the types of radiation damage	The severity of radiation effect: Subacute Effects Acute Effects Chronic Effects	6	7

Test	Lecture	Understanding tumor control and treatment	Tumor Response to Radiation Therapeutic index (combined radiation and drug treatments) Tumor control probability Normal Tissue complication Probability	6	8
Test	Lecture	Understanding - biosafety and risk management	Introduction to Biosafety and Security Key components of Bio risk Management Components of safety in all laboratories Universal safety precautions	6	9
Assignment	Lecture	-	Biosafety barriers in laboratories Personal protective equipment(PPE) Facility Design	6	10
Test	Lecture	Understanding biosafety laboratories in	Biological Agents Routes of infection Basis for control Measures Hazard group classification system A Biosafety cabinet (BSC)	6	11
Test	Lecture	Understanding the effects of radiation and accident control	Bio risk and biohazards Control of substances hazardous to health Assessing risk for work with human blood and tissues hazards Control measures for work with human blood and tissue Containment level	6	12
Test	Lecture	Understanding radiation hazard control for personnel and facilities	Types of biological wastes Categories of biological wastes Decontamination of biological wastes	6	13
Assignment	Lecture	Understanding types of waste and their	Transportation of biological wastes	6	14

		management	International Transport Regulations The Basic Triple Packaging System		
Final Examination	Lecture	Understanding waste transportation methods and protocols	Radiobiology of Tissue and Organs Response to Radiation The Most Sensitive Sensitive Moderately Sensitive Less Sensitive	6	15

11.Course Assessment

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

(40) coursework marks: 25 theoretical + 15 practical

(60) final examination marks: 35 theoretical + 25 practical

12.Learning and Teaching Resources

Required Textbooks (if any)	
Main References (Sources)	1. Beyzaoglu, M, ;Ozyigit, G. and Ebruli, C. (2010). Basic Radiation Oncology. Springer, Berlin, Heidelberg. 2. Elizabeth o Grady, Jason Cashmore, Marsha, Carol Wismer (2018) Principles of Biology- An introduction to Biological Concepts, second edition. international Atomic Energy Agency. Radiation Biology : A Hand book for Teacgers and students (2010). Series no.42.
Recommended Supporting Books and References (scientific journals, reports, etc.)	— Scientific Reports: World Health Organization (WHO) Reports Recent Clinical Laboratory Reports
Electronic References and Websites	— PubMed — World Health Organization (WHO) Global health information and reports

Course Description Form

13. Course Name:
Basics of nursing
14. Course Code:
15. Semester / Year:
Second semester\ Stage (1)

16. Description Preparation Date:	
2026	
17. Available Attendance Forms:	
Presence	
18. Number of Credit Hours (Total) / Number of Units (Total)	
Total hours 90/ units 4	
19. Course administrator's name (mention all, if more than one name)	
Name: Professor Dr. Abdaladeem Yousif Jasem Email: abdulazim.yusuf@alfarabiuc.edu.iq	
20. Course Objectives	
Course Objectives	• Understand the historical and development of nursing profession. • Realize the personal characteristics and human needs. • Recognize the concept of health, wellness, and illness. • Describe the health care delivery system. • Identify the fundamental of nursing in regard to patient, nurse, environment, and health agencies
21. Teaching and Learning Strategies	
Strategy	• Written Assignments • Questioning Classroom Discussion and Debates

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	6	Identify the importance of nursing and the different qualifications of the nurse	Nursing, its importance and development among societies, the qualifications of nurse	Questioning Classroom Discussion and Debates	-Theory exam. -Class activities
2	6	Apply nursing skills such as measuring temperature and pulse - knowing the different places and methods of measuring temperature	Temperature measurement routs, heart pulse	-practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
3	6	Application of respiration measurement and blood pressure	Respiratory rate and respiratory types, blood pressure	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
4	6	Acquire knowledge and skills about different situations	Body mechanism, patient position types	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
5	6	Acquire knowledge and skills about different ways to give drug	Drug administration routs	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
6	6	Identify the principles of surgical sterilization	Principle of medical and surgical sterilization	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
7	6	Application of urinary catheterization	Urinary catheterization and enema types	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
8	6	Identify and application of artificial feeding	Gastric lavage and artificial feeding	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
9	6	Role of nurse in patient preparation for general radiography	Role of nurse in patient preparation for general radiography	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
10	6	Identify and apply Fundamental of first aid	Fundamental of first aid	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
11	6	Identify Wounds and hemorrhage types	Wounds and hemorrhage types	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
12	6	Poisoning, Fracture and burn types	Poisoning, Fracture and burn types	practicing -Classroom Discussion and Debates	-Theory exam. -Class activities
13	6	Identify biosecurity -biosafety level	-Introduction to biosecurity -biosafety level	-Active listening -Classroom Discussion and Debates	-Theory exam. -Class activities
14	6	Bio risks managemet system	Bio risks managemet system	-Active listening -Classroom Discussion and Debates	-Theory exam. -Class activities
15	6	Apply skills of	Accident response	Active listening	-Theory exam.

		accident response -biosafety training	-biosafety training	-Classroom Discussion and Debates	-Class activities
23. Course Evaluation					
• First semester: 10% theoretical + 3% student reports and activities and quick surprise exams + 5% practical + 2% student participation in practical laboratory application = 20% • Final exam: 60% Total final grade = 100%					
24. Learning and Teaching Resources					
Required textbooks (curricular books, if any)					
Main references (sources)			1. Berman, A., Snyder, S., Frandsen, G. (2022): Kozier and Erb's Fundamentals of Nursing. United Kingdom: Pearson 2. Hinkle, J., Cheever, K., and Overbaugh, K. (2022): Brunner and Suddarths, Textbook of medical surgical nursing. 15th ed., Walters Kluwer, Lippincott Williams and Wilkins. china.		
Recommended books and references (scientific journals, reports...) Electronic References, Websites			Google scholar		

Course Description Form

19.Course Name
Medical Terminology

1. Course Code	
2. Semester/Year	
Semester 2/First Year	
3. Date of Preparation of this Description	
2026	
4. Available Attendance Forms	
In-person (Classroom)	
5. Total Credit Hours / Total Units	
Total Hours 30 / Units 2	
6. Name of Course Instructor (If more than one, please specify)	
Name: M.M. Taqa Akram Khalifa Hassan Email: taqa.akram@alfarabiuc.edu.iq	
20.Course objectives	
Objectives of the course material	Course Objectives: General Objective: 1. Identify the four word elements used to build medical words. 2. Divide medical words into their component parts. 3. Apply the basic rules to define and build medical words. 4. Locate the pronunciation guidelines chart and interpret pronunciation marks. 5. Pronounce medical terms 6. Determine how to link combining forms and word roots to various types of suffixes 7. List and identify the terms related to direction, position, and planes of the body. 8. Describe pathological conditions, diagnostic and therapeutic procedures, and other terms related to the body system.
21.Teaching and Learning Strategies	
Strategy	It includes all teaching procedures and educational practices that aim to activate the student's role and transform him from a recipient and listener of information to a central focus in his learning process, where learning takes place through work, research, and the student's self-reliance in acquiring knowledge .Engaging students in information analysis

10.Course Structure						
Theoretical Component:						
Assessment Method	Teaching Method	Learning Outcomes	Topic	Hours	Week	
Discussion	Theoretical lecture	Understanding and comprehension	Structural analysis: Basic Elements of a Medical Word	2	1	
Homework	Theoretical lecture	Understanding and comprehension	suffixes	2	2	
Quiz	Theoretical lecture	Understanding and comprehension	Prefixes	2	3	
Discussion	Theoretical	Understanding and	Roots , Word terminals ,	2	4	

	lecture	comprehension	Conditions		
Quiz	Theoretical lecture	Understanding and comprehension	Terms concerning Body Structure	2	5
Homework	Theoretical lecture	Understanding and comprehension	Terms concerning Integumentary System	2	6
Written Exam	Theoretical lecture	Understanding and comprehension	Terms concerning Digestive System	2	7
Discussion	Theoretical lecture	Understanding and comprehension	Terms concerning Respiratory System	2	8
Homework	Theoretical lecture	Understanding and comprehension	Terms concerning the skin & its appendages	2	9
Quiz	Theoretical lecture	Understanding and comprehension	Terms concerning Cardiovascular System	2	10
Discussion	Theoretical lecture	Understanding and comprehension	Terms concerning Blood, Lymph, and Immune Systems	2	11
Quiz	Theoretical lecture	Understanding and comprehension	Terms concerning Musculoskeletal System	2	12
Homework	Theoretical lecture	Understanding and comprehension	Terms concerning the endocrine system	2	13
Written Exam	Theoretical lecture	Understanding and comprehension	Terms concerning the special senses	2	14
Discussion	Theoretical lecture	Understanding and comprehension	Terms concerning the oncology	2	15

11.Course Assessment

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

12.Learning and Teaching Resources

Required Textbooks (if any)	Oxford English language reference
Main References (Sources)	1. David Andersson, <i>Medical Terminology: The Best and Most Effective Way to Memorize, Pronounce and Understand Medical Terms</i> : Second Edition 2-Barbara A. Gyls <i>Medical Terminology Systems: A Body Systems Approach</i> Eighth Edition
Recommended Supporting Books and References (scientific journals, reports, etc.)	English handbook and study guide
Electronic References and Websites	

1. Course Name :	
Arabic language	
2. Course Name:	
3. Semester /Year:	
Semester (2)/ Stage (1)	
4. Date this description was prepared 2025/9/1 :	
2026	
5. Available attendance forms: Classroom attendance	
Group classroom attendance	
6. study hours(Total number)/ units(Total number):	
Total number of hours 30 / 2 units	
7. The name of the course instructor (if there is more than one) should be mentioned.	
Name :Dr. Lamia Hussein Ali Email :dr.lamya@cois.uobaghdad.edu.iq	
Name:Dr.Enas Abbas Email: inas.abbas@coeduw.Uobaghdad.edu.iq	
8. Course objectives	
Course objectives	1– After learning Arabic language and literature in the academic field, one of the features that gives Arabic its unique character and distinction compared to other languages is its vast linguistic, literary, and artistic resources, encompassing a wide range of topographical, historical, and cultural dimensions. Therefore, the department strives to empower students with knowledge and expertise related to the Arabic language and its arts. 2– Developing the ability to provide educational guidance and engage with the contemporary human mind. 3– Teaching students Arabic sciences, literature, and arts in a systematic manner that leads to a deep understanding of Arabic grammar and the secrets of its expressive power. This understanding connects to comprehending the Holy Quran and exploring its underlying reasons. Furthermore, the program equips students with the skills to analyze various types of literary texts. 4– Develop expressive abilities and cultivate literary taste and aesthetic sense through the arts of rhetoric and refined literary forms. 5 – Produce well–rounded graduates, in addition to their specialized knowledge, meet the demands of the job market in the fields of culture and media .
9. Teaching and learning strategies	

strategy	1- Identifying resources that align with the course content and objective 2- Distributing assignments among students. 3- Maintaining a daily and monthly grade record for all students. 4- Having the instructor and assigned students explain each topic. 5- Administering daily quizzes to assess student understanding of the material. 6- Continuously evaluating student participation in class discussions. 7- Administering monthly exams.
----------	---

10. Course structure

Evaluation method	Learning method	Unit name and topic	Required learning outcomes	Hours	Week
Written test, participation, and daily quiz	The lecture	Introduction to Linguistic Errors – The Taa Marbuta, Tawilah, and Taa Maftuha	The student should become familiar with	2	1
Written test, participation, and daily quiz	The lecture	Rules for Writing Alif Mamdudah and Alif Maqsurah – Sun and Moon Letters	The student should become familiar with	2	2
Written test, participation, and daily quiz	The lecture	Dhad and Dhaa	The student should become familiar with	2	3
Written test, participation, and daily quiz	The lecture	Writing the Hamza	The student should become familiar with	2	4
Written test, participation, and daily quiz	The lecture	Punctuation Marks	The student should become familiar with	2	5
Written test, participation, and daily quiz	The lecture	Nouns and Verbs and Distinguishing Between Them	The student should become familiar with	2	6
Written test, participation, and daily quiz	The lecture	Objects	The student should become familiar with	2	7
Written test, participation, and daily quiz	The lecture	Numbers	The student should become familiar with	2	8

Written test, participation, and daily quiz	The lecture	Applications of Common Linguistic Errors	The student should become familiar with	2	9+10
Written test, participation, and daily quiz	The lecture	Nun and Tanween – Meanings of Prepositions	The student should become familiar with	2	11
Written test, participation, and daily quiz	The lecture	Formal Aspects of Administrative Discourse	The student should become familiar with	2	12
Written test, participation, and daily quiz	The lecture	The Language of Administrative Discourse	The student should become familiar with	2	13+14
Written test, participation, and daily quiz	The lecture	Examples of Administrative Correspondence	The student should become familiar with	2	15
Course evaluation					.11
Written and written work The grade is distributed out of 100 according to the tasks assigned to the student, such as daily preparation, daily, midterm, and monthly exams. The annual coursework grade is 50%. The final coursework grade is 50%.					
Learning and teaching resources					.12
The Holy Quran			Required textbooks and curriculum, if available		
Several Interpretations			Main review of sources		
Books on Arabic Grammar			The second review books recommended by scientific journals and reports		
Modern and Comparative Literature Arabic Rhetoric			Electronic references and websites		