

Course Description for Anatomy of skeleton

1. Course Name:	
Anatomy of skeleton	
2. Course Code:	
RT101-ANS	
3. Semester / Year:	
Annual System	
4. Description Preparation Date:	
2024–2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75hrs./ units3	
7. Course administrator's name (mention all, if more than one name)	
Name: A.L. Mohammed Ali Hassan Jassim	
Email: mohmdg85@gmail.com	
8. Course Objectives	
Course Objectives	- The objective of teaching this course is to provide students with knowledge of the basics of anatomy in general, and human anatomy in particular. - It also aims to provide a comprehensive understanding of the structure and function of bones and joints. - By the end of the year, the student is typically prepared to understand the coursework in the following years and is trained and certified in human anatomy. - Provides a comprehensive understanding of the structure and function of bones and joints, which aids in medical, scientific, and practical applications.
9. Teaching and Learning Strategies	
Strategy	-Combining active learning, continuous review, practical tools, and technology are the most important factors that help you master anatomy effectively.

	-Use illustrations, division and simplification, use tables and diagrams, divide the body into parts, practice with 3D models or apps to explore anatomy, continuous review, presentations as well as focus on important details.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2	Study the introduction of skeleton anatomy and medical terms.	Introduction, Definition: - surface anatomy and anatomical position - vertical and horizontal lines and planes abdominal organs - cell and tissues - types	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
2	2	Study the shoulder bones and joints.	Skeleton of the upper limb: -shoulder girdle (clavicle and scapula bones)	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations
3	2	Study the upper arm, elbow joint and forearm bones.	The humerus, -radius and ulna bones	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations

4	2	Study the hand bones and joints.	The hand	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
5	2	Study the important muscles of the upper limb.	The muscles of the upper limbs	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
6+7	2+2	Study the joints of the body (definition, type and mechanism) Study the thoracic bone anatomy.	Joints -type of joints -mechanism of movement Skeleton of the chest -ribs, sternum and segments of the spinal cord	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
8	2	Study the vertebral column segments anatomy.	Vertebrate -cervical, thoracic, lumbar, sacrum and coccyx -intervertebral disc	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning	Midterm exams Final exams evaluations

				presentation) Discussion Problem solving	
9+10	2+2	Study the lower limb bones and joints, pelvic girdle.	Skeleton of the lower limb -bony pelvis The femur, tibia and fibula bones	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
11	2	Study the foot bones and joints.	The foot	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
12+13 +14	2+2+2	Study the name and function of the lower limb muscles. Study the anatomy of skull and facial bones	The muscles of the lower limbs Skull -Bones of the skull -Facial bones -Mandible -TMJ	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
15	2	Study the skull cavities and sinuses.	Nasal cavity -Paranasal sinus	Lectures (Interactive)	Midterm exams Final exams

				Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Evaluations
11. Course Evaluation					
The grade of 100 is distributed according to the student's mandated tasks such as daily preparation, daily, oral, monthly and final examinations: according to the following order 40 degrees midterm exam distributed to 20 degrees theoretical, 15 degrees practical and 5 degrees for participation, attendance and non-class activities 60 degrees final exam distributed to 25 degrees for operation and 35 degrees for theory					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)					
Main references (sources)			Grant's Atlas of Anatomy, 12th Edition Agur, Anne M.R.; Dalley, Arthur F.		
Recommended books and references (scientific journals, reports...)			Elsevier, Science direct, PubMed springer link.		
Electronic References, Websites			www.who.int		

Course Description for Biology

1. Course Name:	
Biology	
2. Course Code:	
RT104-BIO	
3. Semester / Year:	
Annual System	
4. Description Preparation Date:	
2024–2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75hrs./ units3	
7. Course administrator's name (mention all, if more than one name)	
Name: Prof. Asmahan Munir Zinab Email: asmahanzinab @gmail.com	
8. Course Objectives	
Course Objectives	- Understanding the level of organization among living organisms - The ability to recognize the shape, components, and functions of the cell - Understanding the structure of DNA, its patterns, and its role - Identifying the modes of reproduction in living organisms
9. Teaching and Learning Strategies	
Strategy	- Using discussions and interactive activities to enhance engagement and understanding (brainstorming) - Asking questions and guiding students to derive answers - Gaining practical knowledge through microscopic examination and hands-on experiments - Conducting weekly, monthly, and final quizzes - Preparing students for cooperative learning within groups and for writing experiment reports.

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2	Study and understand the history of biology with examples	Introduction to Biology	Theoretical (Computer-Based) & Laboratory Experiments	Weekly, Midterm, and Final Theoretical Tests
2nd	2	Study and understand the chemical composition of cells with examples	Introduction to Life Chemistry	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
3rd	2	Study and understand cellular organic compounds with examples	Biologically Important Molecules (Carbohydrates, Lipids, Proteins, Nucleic Acids)	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
4th	2	Study and understand cell divisions with examples	Cell Structure & Functions: Plasma Membrane, Passive and Active Transport, Plasma	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
5th	2	Study and understand cytoskeleton functions with examples	Cell Structure & Functions: Cytoskeleton (Microfilaments, Intermediate Filaments, Microtubules), Cilia, and Flagella	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
6th	2	Study and understand cellular organelles with examples	Eukaryotic Cell Organelles: Morphology and Structure of Mitochondria, Types and Functions of Lysosomes	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
7th	2	Study and understand Golgi apparatus functions with examples	Eukaryotic Cell Organelles: Morphology and Function of Golgi Apparatus	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
8th	2	Study and understand the endoplasmic reticulum with examples	Eukaryotic Cell Organelles: Endoplasmic Reticulum (Rough & Smooth) and Their Functions, Vacuoles, Vesicles, Ribosomes	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests

9th	2	Study and understand nuclear structure and functions with examples	Eukaryotic Cell Organelles: Nucleus and Its Components	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
10th	2	Study and understand chromosomes with examples	Eukaryotic Cell Organelles: Chromosome Structure (Replication, Transmission)	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
11th	2	Study and understand DNA structure with examples	DNA Replication, Transcription, and Protein Synthesis: DNA Structure	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
12th	2	Study and understand DNA transcription and translation with examples	DNA Replication, Transcription, and Protein Synthesis: Transcription	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
13th	2	Study and understand protein synthesis with examples	DNA Replication, Transcription, and Protein Synthesis: DNA Translation	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
14th	2	Study and understand cell life cycle and mitosis	Introduction to Cell Reproduction: Cell Cycle and Mitosis	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
15th	2	Study and understand meiosis	Introduction to Cell Reproduction: Meiosis, Prokaryotic Cell Division	Theoretical (Computer-Based)	Weekly, Midterm, and Final Theoretical Tests
11. Course Evaluation					
Midterm Exam: 40 Marks + Final Exam: 60 Marks / Total: 100 Marks					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)		- Lehninger Principles of Biochemistry – David L. Nelson & Michael M. Cox - Biochemistry – Jeremy M. Berg, John L. Tymoczko, Gregory J. Gatto Jr.			
Main references (sources)		VJ. Bekish, Yu.T. Nikulin (2006) Practical Book on Medical Biology.			

Recommended books and references (scientific journals, reports...)	1. Elizabeth o Grady, Jason Cashmore, Marsha, Carol Wismer(2018). Principles of Biology- An introduction to Biological Concepts . second Edition. 2. Peter Raven (2016) Biology. Elven Edition.
Electronic References, Websites	https://www.khanacademy.org/science/biology/cellular-molecular-biology https://www.biomanbio.com/

Course Description for Computer Principles1

1. Course Name:	
Computer Principles1	
2. Course Code:	
RT106-COM	
3. Semester / Year:	
Annual System	
4. Description Preparation Date:	
2024–2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
45hrs./ units2	
7. Course administrator's name (mention all, if more than one name)	
Name: Eng. Mustafa Abdel Ghani Nasser Email: mustafmustaf952@gmail.com	
8. Course Objectives	
Course Objectives: The teaching of the course aims to provide students with knowledge about Basic computer in general.	- Encourage the student to write simple research towards previous lectures to create a state of balance between methodological information and source information - Urging the student to make practical projects on the computer and holding seminars among students about the methodology of the subject - Encourage the student to evaluate the answer of his fellow students from other students to develop . - Self-development
9. Teaching and Learning Strategies	
Strategy	Interactive Lectures Practical Demonstration Hands-on Training Lecture Documentation
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1st	2	Computer cycle phases, generations, data, and information	Computer Fundamentals	Theoretical	Daily Tests
2nd	2	Computer features, areas of use, and components	Computer Fundamentals	Theoretical	Daily Tests
3rd	2	Types and classification of computers	Computer Fundamentals	Video	Daily Tests
4th	2	Computer components: Physical parts, input, and output devices	Computer Components	Video	Daily Tests
5th	2	Computer case and software structure	Computer Components	Theoretical	Daily Tests
6th	2	Number systems and personal computer systems	Computer Components	Theoretical	Daily Tests
7th	2	Computer platform and factors to consider when purchasing a computer	Computer Components	Theoretical	Daily Tests
8th	2	Key features of personal computers and chapter questions	Computer Components	Theoretical	Daily Tests
9th	2	Cyber ethics, security violations, and computer security	Computer Security and Software Licenses	Explanatory Video	Daily Tests
10th	2	Computer software licenses and types of licenses	Computer Security and Software Licenses	Theoretical	Daily Tests
11th	2	Intellectual property and cyber hacking	Computer Security and Software Licenses	Theoretical	Daily Tests
12th	2	Cyber hacking and its types	Computer Security and Software Licenses	Theoretical	Daily Tests
13th	2	Hacking sources and common security risks	Computer Security and Software Licenses	View	Daily Tests
14th	2	Malware and computer viruses	Computer Security and Software Licenses	Theoretical	Daily Tests
15th	2	Virus damages and characteristics	Computer Security and Software Licenses	Video Tutorial	Daily Tests
11. Course Evaluation					
Midterm Exam: 40 Marks + Final Exam: 60 Marks / Total: 100 Marks					

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	Basics of Computers and Office Applications
Main references (sources)	Al-Mustafa for Sciences – "Basics of Computers, Internet, and Office" Dr. Ziad Mohammed Aboud, Dar Al-Doctor for Publishing and Distribution, Baghdad.
Recommended books and references (scientific journals, reports...)	1. Encryption of a Text Using the Affine Cipher and Hiding It in a Colored Image by Using the Quantization Stage <i>Nada Abdul Aziz Mustafa, Iraq, Baghdad, University of Baghdad, College of Languages</i> 2. The Effect of the Smoothing Filter on an Image Encrypted by the Blowfish Algorithm, Then Hiding It in a BMP Image <i>Nada Abdul Aziz Mustafa, Iraq, Baghdad, University of Baghdad, College of Languages</i>
Electronic References, Websites	https://www.agitraining.com/books/microsoft-office-books/word-2010-digital-classroom-book

Course Description for General chemistry

1. Course Name:	
General chemistry	
2. Course Code:	
RT105-CHE	
3. Semester / Year:	
Annual System	
4. Description Preparation Date:	
2024–2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75hrs./ units3	
7. Course administrator's name (mention all, if more than one name)	
Name: dr. ahmed jaber ibrahim Email: ahmed.jibrahim@alayen.edu.iq.	
8. Course Objectives	
Course Objectives	Specific objectives: - At the end of the year, the student will be able to: 1. Introduce the student to chemistry 2. How to deal with chemicals 3. Detect and separate materials and prepare standard materials 4. Develop skills in solving algorithmic (mathematical) problems 5. Analyze and build concepts 6. Write reports and objective data 7. Use laboratory equipment/safety
9. Teaching and Learning Strategies	
Strategy	Blended Learning Lectures (Interactive) Online Lectures (Interactive) Use of strategy, collaborative learning, discussion, brainstorming a practical discussion Problem solving

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	The atom molecular structure electronically distribution Chemical bonding	Lectures (Interactive) Online Lectures (Interactive) Use of strategy, collaborative learning, discussion, brainstorming and practical discussion	Monthly and report exams Scientific discussions
2	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Liquid mixture, Buffer solutions-types	Lectures	Monthly and report exams Scientific discussions
3	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Quantitative & qualitative analysis methods.	(Interactive)	Monthly and report exams Scientific discussions
4	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Molar & normal concentrations & method. Problems & discussion.	Online Lectures (Interactive)	Monthly and report exams Scientific discussions
5	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Acids, base -examples.	Use of strategy, collaborative learning, discussion, brainstorming and practical discussion	Monthly and report exams Scientific discussions
6	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Oxidation & reduction.	Lectures	Monthly and report exams Scientific discussions
7	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Principles of organic chemistry Hydrocarbons Alkenes preparation properties reactions.	(Interactive)	Monthly and report exams Scientific discussions
8	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Alcohols - Ketones - Aldehydes - Carboxylic	Online Lectures (Interactive)	Monthly and report exams

			acids classification & properties		Scientific discussions
9	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Aromatic hydrocarbons Carbohydrates - classification & reactions	Use of strategy, collaborative learning, discussion, brainstorming and practical discussion	Monthly and report exams Scientific discussions
10	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Amines aryl amines	Lectures	Monthly and report exams Scientific discussions
11	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Introduction to biochemistry, and the machinery of life	(Interactive)	Monthly and report exams Scientific discussions
12	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Biochemistry and nutrition	Online Lectures (Interactive)	Monthly and report exams Scientific discussions
13	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Sugars, starches and fibers	Use of strategy, collaborative learning, discussion, brainstorming and practical discussion	Monthly and report exams Scientific discussions
14	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Isomers, classifications	Lectures	Monthly and report exams Scientific discussions
15	5	A1/A2/A4 B1/B2/B3/B4 C1/C2/C3/C4	Electrolytes, electrochemistry	(Interactive)	Monthly and report exams Scientific discussions
11. Course Evaluation					
Midterm Exam: 40 Marks + Final Exam: 60 Marks / Total: 100 Marks					
12. Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Non		

Main references (sources)	1. Solutions for General Chemistry: Principles and Modern Applications 11th Ralph H. Petrucci, F. Geoffrey Herring, Jeffry D. Madura, Carey Bissonnette 2. Solutions for CHEMISTRY: The Molecular Nature of Matter and Change 7th Martin S. Silberberg, Patricia G. Amateis
Recommended books and references (scientific journals, reports...)	Handbook of General Chemistry, 3 rd edition.
Electronic References, Websites	University educational platform

Course Description for General Physics

1. Course Name:	
General Physics	
2. Course Code:	
RT102-PHY	
3. Semester / Year:	
Annual System	
4. Description Preparation Date:	
2024–2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75hrs./ units3	
7. Course administrator's name (mention all, if more than one name)	
Name: Email: raed.k@sc.uobaghdad.edu.iq	
8. Course Objectives	
Course Objectives	- The student should recognize the standard units used in physical measurements. - The student should be able to define the concepts of electricity and magnetism and understand the relationship between them. - The student should distinguish between the concepts of gravity and kinetic energy and understand their importance in physical phenomena. - The student should explain the relationship between work and energy in different physical systems. - The student should differentiate between conservative and non-conservative forces and analyze their effects on motion. - The student should understand the concepts of momentum, impulse, and types of collisions and apply them to physics problems.
9. Teaching and Learning Strategies	
Strategy	- Conduct a discussion with students to explore fundamental concepts such as electricity, magnetism, and different types of forces. - Perform practical experiments to understand gravity, periodic motion,

	pressure, and heat, while recording and analyzing the results. • Assist students in connecting various concepts such as energy, motion, and forces. • Adopt a scientific dialogue approach in presenting topics, encouraging the exchange of questions and ideas between the teacher and students.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
١	5	The student should distinguish between different types of standard units and use them accurately in physical measurements.	Standard units used in physical measurements	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٢	5	The student should understand the concept of electricity and magnetism and analyze the effect of magnetic fields on materials and currents.	Electricity and magnetism	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٣	5	The student should be able to define velocity and acceleration accurately.	Velocity and acceleration	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٤	5	The student should understand and apply Newton's laws of motion, calculate weight using the law of gravity, and analyze the effects of forces on moving objects.	Newton's laws of motion, weight, and gravitational force	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٥	5	The student should understand and apply the concepts of momentum and impulse, analyze collisions using the law of conservation of momentum, and use the impulse-momentum relationship to solve physics problems.	Momentum, impulse, impulse and collisions, impulse-momentum relationship	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٦	5	The student should understand the concept of work and energy, identify different types of energy, and apply the principle of energy conservation in physical systems.	Work, energy, types of energy, and energy conservation	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٧	5	The student should differentiate between conservative and non-conservative forces	Conservative and non-conservative forces	Deliver lectures using Information	Conduct practical and theoretical

		conservative forces, understand their effects on energy in physical systems, and apply these concepts to solve problems related to motion and energy.		Technology (IT), such as computers.	exams (mid-term and final exams).
٨	5	The student should understand the concept of periodic motion, determine its characteristics such as period and frequency, and analyze different types of periodic motion such as pendulum motion and mechanical system oscillations.	Periodic motion	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
٩	5	The student should understand and apply the concepts of rotational torque, angular acceleration, and rotational kinetic energy, and analyze the effects of forces and torques on rotating bodies using appropriate physical laws.	Dynamics of rotational motion	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
١٠	5	The student should understand the concept of torque, calculate it using appropriate equations, and apply it to analyze the effects of forces on rotating objects in various physical scenarios.	Rotational motion, static equilibrium, work done by torque	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
١١	5	The student should understand and apply the concepts of rotational kinetic energy and angular momentum, analyze objects in static equilibrium using physical laws, and solve rotational motion problems using appropriate equations.	Rotational kinetic energy, angular momentum, static equilibrium experiments, rotational motion problems	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
١٢	5	The student should understand and analyze damped and driven oscillations, use physics equations to explain the effects of damping and driving forces on systems, and conduct experiments to examine periodic motion while analyzing the impact of factors such as amplitude and frequency.	Damped and driven oscillations, periodic motion experiment	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).

١٣	5	The student should understand the concept of gravitational potential energy, calculate it using appropriate equations, and analyze the effect of height and mass on stored energy in a system.	Gravitational potential energy	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
١٤	5	The student should be able to understand the difference between heat and temperature, calculate heat transfer between objects using appropriate equations, and interpret the effects of temperature changes on matter in various physical contexts.	Heat and temperature	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).
١٥	5	The student should be able to understand the behavior of gases under different conditions, apply gas laws such as Boyle's Law, Charles's Law, and Gay-Lussac's Law to solve problems related to pressure, volume, and temperature, and analyze the effects of these factors on gases in physical systems.	Gases, pressure, and volume, laws of pressure	Deliver lectures using Information Technology (IT), such as computers.	Conduct practical and theoretical exams (mid-term and final exams).

11. Course Evaluation

Midterm Exam: **40 Marks** + Final Exam: **60 Marks** / **Total: 100 Marks**

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	"Fundamentals of Physics" – David Halliday, Robert Resnick, Jearl Walker. "University Physics" – Hugh D. Young, Roger A. Freedman
Main references (sources)	"Fundamentals of Physics" – David Halliday, Robert Resnick, Jearl Walker
Recommended books and references (scientific journals, reports...)	Physical Review Letters (PRL)
Electronic References, Websites	Library Genesis – libgen.rs Google Books – books.google.com Project Gutenberg – gutenberg.org

Course Description for General Physiology

1. Course Name:	
General Physiology	
2. Course Code:	
RT103-PHS	
3. Semester / Year:	
Annual System	
4. Description Preparation Date:	
25/2/2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
75hrs./ units3	
7. Course administrator's name (mention all, if more than one name)	
Name: dr. Hakeem Ghani Hassan Email: alhamamy201567@gmail.com	
8. Course Objectives	
Course Objectives	1. Understand the main physiologic concepts of cells and their components 2. Understand the factors of homeostasis regulation in human body 3. Understand the physiologic mechanisms of blood flow, gases exchange and gastric secretions
9. Teaching and Learning Strategies	
Strategy	The study of General Physiology involves not just the acquisition of knowledge, but the development of skills to apply this knowledge in real-world contexts. By using active learning, hands-on experiences, clinical applications, and collaborative learning, students can build a comprehensive understanding of physiological concepts. These teaching and learning strategies, when combined effectively, create an engaging, dynamic learning environment that enhances student comprehension and prepares them for future healthcare practice or research.
10. Course Structure	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
First	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Introduction to Human Physiology – Cell components and organelles	theoretical	Short exams and discuss
Second	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Blood: –Blood Functions blood components: blood plasma, plasma proteins function	theoretical	Short exams and discuss
Third	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Formed elements: leukocytes (types and function), Platelets, and Erythrocytes, Erythropoietin Role in Erythrocytes Production.	theoretical	Short exams and discuss
Forth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Blood Clotting: clotting factors and Mechanism of Blood Clot Formation	theoretical	Short exams and discuss

Fifth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Fluid Compartments in the Body: ICF,ECF, interstitial fluid and transcellular fluids, compositions of body fluids	theoretical	Short exams and discuss
Sixth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Fluid shift: Diffusion, Osmosis, hydrostatic pressure, filtration & Active Transport Across Cell Membranes	theoretical	Short exams and discuss
Seventh	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Homeostasis: Blood glucose homeostasis, excretion homeostasis and Body Temperature Regulation	theoretical	Short exams and discuss
Eighth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Heart and blood vessels: –Heart function –Blood vessels function –cardiac valves and their functions – Heart sounds.	theoretical	Short exams and discuss
Ninth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply	Circulations: systemic circulation, pulmonary	theoretical	Short exams and discuss

		physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	circulation, Cardiac cycle, cardiac output, and electrical properties		
Tenth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Blood Pressure: –Mean arterial blood pressure and its regulation –Role of kidney in regulation blood pressure	theoretical	Short exams and discuss
Eleventh	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Measurement of lung function: –Lung volumes and capacities – Exchange & transport of gases in the blood	theoretical	Short exams and discuss
Twelfth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real-world problems, and demonstrate critical thinking, collaboration, and communication skills.	Gastrointestinal tract: –GI tract general functions –Oral cavity function, Salivary glands function, stomach function, small intestine and large intestine function	theoretical	Short exams and discuss
Thirteenth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to	Gastrointestinal tract Secretions: General characteristic of	theoretical	Short exams and discuss

		solve real–world problems, and demonstrate critical thinking, collaboration, and communication skills.	GI Secretions and their functions		
Fourteenth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real–world problems, and demonstrate critical thinking, collaboration, and communication skills.	Physiology of Pregnancy: Parturition, stages of labor hormonal stimulation of parturition and lactation	theoretical	Short exams and discuss
Fifteenth	5	students should possess a solid understanding of how the body's systems function and interact, be able to apply physiological concepts to solve real–world problems, and demonstrate critical thinking, collaboration, and communication skills.	Fetal development: – The newborn – First year after birth – Aging and death	theoretical	Short exams and discuss

11. 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

Mid-term exams: 25%

Practical exams: 15%

Final Semester exams: 60%

12. Learning and Teaching Resources

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