

وصف مقررات المرحلة الأولى
قسم تقنيات التخدير
العام الدراسي 2025-2026
الكورس الأول
انجليزي

1. Course Name:	
Medical physics (1)	
2. Course Code:	
MTAN1101	
3. Semester / Year:	
First semester / 2025-2026	
4. Description Preparation Date:	
10-10-2025	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
"2 theoretical + 4 practical (per week)" /Number of units (4)	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Maher Hassan Khanafer	
Email: maherkhanafer400@gmail.com	
8. Course Objectives	
Course Objectives	• To be able to identify pressures, fluids, viscosity and temperature. • To be able to recognize the laws of gases, real and ideal gases, methods of heat transfer, and the laws of thermodynamics and electricity. • To be able to know the medical phenomena that he observes during his working life such as blood flow, a device that reads the heart or brain rate, the temperature of the human body, and pressures.
9. Teaching and Learning Strategies	

Strategy	• Asking questions and guiding students to discover the answers themselves. • Using animations and videos to explain scientific concepts. • Using discussions and interactive activities to increase engagement and understanding. • Assessing students' progress through continuous evaluations like short questions. • Allowing students to train in a real-world environment to acquire practical skills.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2the + 4 practice	Studying the physics of the skeleton.	Physics of skeleton, pressure.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
2	2the + 4 practice	Studying the concept and physics of pressure.	Physics of skeleton, pressure.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
3	2the + 4 practice	Studying the physics and concepts of the energy in human body.	Energy, work and power of the body.	Delivering lectures using information technology	Conducting practical and theoretical exams (midterm + final

				(computer).	semester exam).
4	2the + 4 practice	Studying the physics of the work of the body.	Energy, work and power of the body.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
5	2the + 4 practice	Studying the physics of the power of the body.	Energy, work and power of the body.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
6	2the + 4 practice	Explaining the physics of heat, heat therapy, and heat applications in medicine.	Heat and cold in medicine.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
7	2the + 4 practice	Explaining the cold therapy, and cold applications in medicine.	Heat and cold in medicine.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
8	2the + 4 practice	Studying the specific heat, heat capacity, latent heat.	Specific heat, heat capacity, latent heat, thermometer and it's kinds, heat	Delivering lectures using information technology	Conducting practical and theoretical exams (midterm + final

			transfer by conduction, convection and radiation. Regulation heat through the human body.	(computer).	semester exam).
9	2the + 4 practice	Understanding the thermometer and it's kinds, heat transfer by conduction, convection and radiation.	Specific heat, heat capacity, latent heat, thermometer and it's kinds, heat transfer by conduction, convection and radiation. Regulation heat through the human body.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
10	2the + 4 practice	Knowing and studying the regulation of heat through the human body.	Boyle's law, diffusion and mixing of gases.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
11	2the + 4 practice	Studying the fundamental physics of lung.	Physics of lung and breathing.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).

12	2 th + 4 practice	Explaining the physics of breathing in humans.	Physics of lung and breathing.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
13	2 th + 4 practice	Studying the physics of lung and breathing for the human body.	Physics of lung and breathing.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
14	2 th + 4 practice	Explaining the physics of the phenomena of evaporation of liquids, vapour pressure, boiling point, and humidity.	Evaporation of liquids, vapour pressure and boiling point, humidity, laminar and turbulent flow in liquid.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).
15	2 th + 4 practice	Studying the physics of the laminar and turbulent flow in liquid.	Evaporation of liquids, vapour pressure and boiling point, humidity, laminar and turbulent flow in liquid.	Delivering lectures using information technology (computer).	Conducting practical and theoretical exams (midterm + final semester exam).

11. Course Evaluation

The students will be assessed through a midterm exam (40 marks) + a final exam (60 marks), with a total of 100 marks.

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any)	1. Introduction to Medical Physics, 2022. 2. Physics of the body, 1999.
Main references (sources)	1. Zabel, Hartmut. Volume 1 Physical Aspects of the Human Body, Berlin, Boston: De Gruyter, 2023. https://doi.org/10.1515/9783110756951. 2. https://www.freebookcentre.net/physics-books-download/Medical-Physics-by-Dr.-Y.-Ajiboye.html.
Recommended books and references (scientific journals, reports...)	1. Journal of Medical Physics. 2. Journal of Physica Medica.
Electronic References, Websites	https://journals.lww.com/JOMP/pages/default.aspx

1. Course Name:	
General anatomy 1	
2. Course Code:	
MTAN1102	
3. Semester / Year:	
First year- first semester	
4. Description Preparation Date:	
10/10/2025	
5. Available Attendance Forms:	
Full-time and official attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theory Lecture: 2 hours , Practical: 4 , Total: 6 per week 90 hours per semester/4 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Bassel Adel Ismail Email: bassel.adel@alayen.edu.iq	
8. Course Objectives	
	A– <u>Cognitive objectives / knowledge</u> A1- Knowledge of anatomy and its related sciences, and how to The arrangement of the human body's systems and tissues, their role and function. A2- Understands the principles, basics and vocabulary of anatomy in general. A3- He trains on the function of the human body's systems and components And her work. <u>B– Skills</u> B– Acquired skills:

	B1– The student will be able to understand the principles of anatomy Knowing the location and anatomy of any organ in the body when mentioned in upcoming courses in anesthesiology and when faced with Medical conditions in his working life. B2 - Using and understanding vocabulary and Skills Acquired in the course in their specialty to understand the impact of materials Narcotic to the body's systems. C– <u>Values / ethics</u> C– Acquired values: C1 - Accurate and correct understanding of the anatomy and systems of the body Man and correct knowledge of how to connect basic concepts For anatomy with other medical teaching courses in The second, third and fourth educational stages in the Department of Anesthesia For which anatomy is a basic requirement. C2 - Interaction with recent developments in the field of anesthesia. .C3 - Commitment to updating knowledge and skills through Participation in training courses and scientific conferences
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9. Teaching and Learning Strategies

Strategy	<u>Blended learning</u> • Lectures (Interactive) Online Lectures (Interactive) Tutorial <u>Role play</u> Computer-based learning (computers e-learning, free downloadable software usage, Webinar) Team-based learning (group dissuasion, presentation) Discussion
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	6	A 1/A2/A3 B1/B2 C1/C2/C3	Introduction, Anatomical terms	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
2	6	A 1/A2/A3 B1/B2 C1/C2/C3	Body cavities and its organs	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
3	6	A 1/A2/A3 B1/B2 C1/C2/C3	Superficial anatomy of human body	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations

4	6	A 1/A2/A3 B1/B2 C1/C2/C3	Human body tissues : Types and characteristics	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
5	6	A 1/A2/A3 B1/B2 C1/C2/C3	Skin anatomy and its functions skin color	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
6+7	12	A 1/A2/A3 B1/B2 C1/C2/C3	General Skeletal structure, (Skull and neck) + Vertebral column structure, numbers and its functions	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
8	6	A 1/A2/A3 B1/B2	Diaphragm and abdominal	Lectures (Interactive) Online	Midterm exams Final exams

		C1/C2/C3	wall muscles	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	evaluations
9+10	12	A 1/A2/A3 B1/B2 C1/C2/C3	Anatomy of the heart, Wall valve and its functions + Structure of blood vessels wall arteries, veins and capillaries	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
11	6	A 1/A2/A3 B1/B2 C1/C2/C3	Lymphatic system-lymph glands	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
12+13+ 14	18	A 1/A2/A3 B1/B2 C1/C2/C3	Respiratory system: Upper respiratory tract +	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning	Midterm exams Final exams evaluations

			Respiratory system: Lower respiratory tract + Respiratory system: Alveoli-lungs- Pleural cavity	presentation) Discussion Problem solving	
15	6	A 1/A2/A3 B1/B2 C1/C2/C3	Upper and lower limb	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams 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, Sciencedirect springer link, Pdfdrive
Electronic References, Websites	www.who.int

1. Course Name:	
General physiology 1	
2. Course Code:	
MTAN1103	
3. Semester / Year:	
First year- first semester 2025/2026	
4. Description Preparation Date:	
10/10/2025	
5. Available Attendance Forms:	
Full-time and official attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theory Lecture: 2 hours , Practical: 4 , Total: 6 90 hours per semester	
7. Course administrator's name (mention all, if more than one name)	
Name: dr. Basel Adel Ismail Email : bassel.adel@alayen.edu.iq	
8. Course Objectives	
	General objective: At the end of the academic year, the student will be able to understand the functions of different body systems. A- <u>Cognitive objectives/ knowledge: The student will be able to:</u> A1- The student should learn about the importance and function of some vital body systems such as the respiratory, cardiac, muscular and nervous systems. A2 - He can know blood and its components. A3- It is able to know the cell and the transfer of fluids. <u>B- Skills</u> B1 - To be able to use devices and tools in the laboratory

	To perform clinical blood tests when encountering any emergency problem with the patient B2 - Use the vocabulary and skills acquired in the course in their specialty to understand the effect of narcotic substances on the body C – <u>Values / ethics</u> C1 – Commitment to updating knowledge and skills through participation in training courses and scientific conferences
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9. Teaching and Learning Strategies

Strategy	- Blended learning - Lectures (Interactive) - Online Lectures (Interactive) - Tutorial Role play Computer-based learning (computers e-learning, free downloadable software usage, Webinar) Team-based learning (group dissuasion, presentation) Discussion Case study Problem solving
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	6	A 1/A2/A3 B1/B2 C1	Introduction on physiology	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
2	6	A 1/A2/A3 B1/B2 C1	Movement of fluid, solute and gases across The cell membrane	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
3	6	A 1/A2/A3 B1/B2 C1	Learn the physiology of Muscular system	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
4	6	A 1/A2/A3		Lectures (Interactive)	Midterm exam

		B1/B2 C1	Learn the way of Contraction mechanism, fatigue, muscular pain	Role play Team-based learning presentation) Discussion Problem solving	Final exams evaluations
5	6	A 1/A2/A3 B1/B2 C1	Learn about the Nervous system	Lectures (Interactiv Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
6	6	A 1/A2/A3 B1/B2 C1	Learn how action potential of nerve and muscle fiber	Lectures (Interactiv Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
7	6	A 1/A2/A3 B1/B2 C1	Learn the physiology of blood	Lectures (Interactiv Role play Team-based learning presentation)	Midterm exam Final exams evaluations

				Discussion Problem solving	
8	6	A 1/A2/A3 B1/B2 C1	RBC, shape. origin. Hb structure and anemia	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
9	6	A 1/A2/A3 B1/B2 C1	WBC, Platelet , Function ,origin , structure	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams Evaluations
10	6	A 1/A2/A3 B1/B2 C1	Blood clotting mechanisms	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams Evaluations
11	6	A 1/A2/A3 B1/B2		Lectures (Interactive) Role play	Midterm exam Final exams

		C1	Cardiovascular system	Team-based learning presentation) Discussion Problem solving	evaluations
12	6	A 1/A2/A3 B1/B2 C1	Heart sound and murmur , ECG	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams evaluations
13	6	A 1/A2/A3 B1/B2 C1	Blood pressure	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams Evaluations
14	6	A 1/A2/A3 B1/B2 C1	Learn the physiology of lung and respiratory system	Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exam Final exams Evaluations
15	6	A 1/A2/A3	Oxygen transporting and exchange CO2	Lectures (Interactive)	Midterm exam

		B1/B2 C1	transporting and exchange, lung vol and capacity, types of hypoxia	Role play Team-based learning presentation) Discussion Problem solving	Final exams evaluations
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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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Guyton and Hall , Physiology review 2th edition
Main references (sources)	Reports, library
Recommended books and references (scientific journals, reports...)	Ganongs' Review of Medical Physiology 26th Edition
Electronic References, Websites	University educational platform

1. Course Name:	
General chemistry	
2. Course Code:	
MTAN1104	
3. Semester / Year:	
1/2025/2026	
4. Description Preparation Date:	
10-10-2025	
5. Available Attendance Forms:	
100%	
6. Number of Credit Hours (Total) / Number of Units (Total)	
2 theoretical hours + 4 practical hours = 6 hours * 15 weeks = 90 hours/6credits	
7. Course administrator's name (mention all, if more than one name)	
Name: Maher Hassan Khanafer Email: maherkhanafer400@gmail.com	
8. Course Objectives	
Course Objectives	By the end of the academic year, the student will be able to perform various techniques of qualitative and quantitative analyses of the components in different body fluids of humans under both healthy and diseased conditions. A- Cognitive objectives: A1- Understands the principles and basics of chemistry and chemical structures. A2- Identify the types of chemical components of the human body. A3- Learn about the principles of biochemistry and the types of biochemical reactions that occur in the human body. B - The skills objectives of the course. B1 - Applying chemical principles in their field of specialization

	B2 - The ability to create a balanced diet to maintain fluid balance and appropriate nutrient levels C- Emotional and Evaluation objectives C1- Is aware of the risks resulting from excessive consumption of certain foods
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9. Teaching and Learning Strategies

Strategy	Theoretical and practical laboratory methods, lectures, and visual and video instructional materials
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 theoretical + 4 practical	A3 -A1	Scope of biochemistry in health and disease, cell and cell constituents.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
2	2 theoretical + 4 practical	A2- B1	Some aspects of physical chemistry, gas laws	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories

3	2 theoretical + 4 practical	A1 – B1	Radio activity and radioactive isotopes.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
4	2 theoretical + 4 practical	A1- A2	Solutions and methods of expressing Concentrations colloidal solution.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
5	2 theoretical + 4 practical	A3-B2	The PH concept, Acid-base balance, Chemical equilibrium, common ion effect.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
6	2 theoretical + 4 practical	A1-A3 -B1-C1	Buffer and buffer systems of physiological importance in living systems.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
7	2 theoretical + 4 practical	A2-A3- B1-B2- C1	Blood, blood constituents, body fluids, regulation of blood Ph and body fluids.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
8	2 theoretical + 4 practical	A2-A3- B1-B2- C1	Water and electrolyte balance osmotic pressure of body fluids, control of total electrolytes and body fluids.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
9	2 theoretical + 4 practical	A3-B2- C1	Carbohydrates classification reactions, main carbohydrates in human body	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories

10	2 theoretical + 4 practical	A1-A2- A3-B1- B2-C1	Metabolism of carbohydrates, blood glucose factors controlling glucose level in blood.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
11	2 theoretical + 4 practical	A3-B2- C1	Glucose abnormalities , diabetes mellitus, ketosis, glycosuria, glucose tolerance curve.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
12	2 theoretical + 4 practical	A1-A3- B1	Lipids, classification, derived lipids, compound, lipids	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
13	2 theoretical + 4 practical	A3-B2- C1	Lipid metabolism, lipid abnormalities.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
14	2 theoretical + 4 practical	A1-A2- A3-B1	Proteins, classification, functions, peptide bonds, amino acids, chemical reactions	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories
15	2 theoretical + 4 practical	A1-A2- A3-B1	Nucleic acids and their Expression, DNA Replication, Nutation, RNA Topology.	Lecture presentation Practical application in the laboratory	Written examinations Practical examinations in laboratories

11. Course Evaluation

The student grades are distributed from 100 points to the full course and the student examines two university examinations.

The midterm exam is for 40 points and divided according to the following:

5 points of class participation and attendance

15 points Written Practical Examination

20 points Linear Theoretical Fruits

The Final is for for 60 points and divided according to the following:

25 points for practical exam

35 points for theoretical exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

- **Nature**
- **Science**
E. book and websites.

Main references (sources)

- **Williams. (2012). Textbookb of humanendocrinology (12th ed).Philadelphin: Elsevier/saunders., pp1371-1435.**

Recommended books and references
(scientific journals, reports...)

Elsevier, Sciencedirect springer link,

Electronic References, Websites

Medical website

1. Course Name:	
General biology	
2. Course Code:	
MTAN1105	
3. Semester / Year:	
1 st semester / 2024-2025	
4. Description Preparation Date:	
8/10/2025	
5. Available Attendance Forms:	
Attendance in the classroom	
6. Number of Credit Hours (Total) / Number of Units (Total)	
theoretical: 2 , Practical: 4 , Total: 6 (2+2)/6units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Amal Ebrahim Dayoub Email: aamaldd@yahoo.com	
8. Course Objectives	
	• General objective: By the end of the course, the student will be able to: Identify the cell and its structure, describe prokaryotic and eukaryotic organisms, and explain the cell's immune mechanism against pathogens. A: Knowledge Objectives A1- Identify the parts and components of the cell. A2- Describe prokaryotic and eukaryotic organisms (bacteria, parasites, fungi, etc.) A3- Understand the cell's immune mechanism against pathogens.
9. Teaching and Learning Strategies	
Strategy	Theoretical methods, practical laboratory methods, lectures, visual aids and videos.
10. Course Structure:	
Theoretical and practical syllabus	

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 th + 4 pract	A 1/A2/A3	Introduction to biology	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
2+3	4 th + 8 pract	A 1/A2/A3	The structure of cells, types, shape and size	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
4+5	4 th + 8 pract	A 1/A2/A3	Movement in and of cells	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
6	2 th + 4 pract	A 1/A2/A3	Cell division	Lectures (Interactive Team-based learning presentation) Discussion	Written tests Practical tests in laboratory

				Problem solving	
7+8	4 th + 8 pract	A 1/A3	Nucleic acid: DNA and RNA,DNA replication	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
9	2 th + 4 pract	A 1/A3	Protein biosynthesis	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
10 +11	4 th + 8 pract	A 1/A2/A3	Human body tissues: Epithelial tissues	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
12 + 13	4 th + 8 pract	A 1/A2/A3	Muscular and Nervous tissues	Lectures (Interactive Team-based learning presentation) Discussion	Written tests Practical tests in the laboratory

				Problem solving	
14	4 th + 8 pract	A 1/A2/A3	Connective tissues	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory
15	2 th + 4 pract	A 1/A2/A3	Blood and lymph	Lectures (Interactive Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in the laboratory

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

12.Learning and Teaching Resources

Required textbooks (curricular books, any)	
Main references (sources)	1- General biology, 2013 http://de.wikibooks.org/wiki/Benutzer:Dirk_Huenniger/wb2pdf 2- CIE Biology, www.savemyexams.com
Recommended books and references (scientific journals, reports...)	2. M.B.V.Roberts, Biology a Functional approach, 4th edition, Nelson 3. C.J.Clegg with D.G.Mackean, Advanced biology principles and applications, 2nd edition, Hodder

	education 4-D.T.Taylor, N.P.O. Green, G.W. Stout and R. Soper. Biological Science, 3rd edition, Cambridge University Press 2
Electronic References, Websites	University educational platform

1. Course Name:	
Computer principles 1	
2. Course Code:	
MTAN1106	
3. Semester / Year:	
First level	
4. Description Preparation Date:	
10/10/2025	
5. Available Attendance Forms:	
Full-time and official attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theoretical 1 + practical 2 = 3 45 h /2unit	
7. Course administrator's name (mention all, if more than one name)	
Name:khaldoon ahmed kamil Email: kaldon.ahmed@alayen.edu.iq	
8. Course Objectives	
Course Objectives 1.cognitive objectives	–Student comprehension – The ability to analyze and apply what you have learned practically on the computer – The application is done by presenting the material to the students in the laboratory and then applying it by them

2.course specific skill objectives	– Direct questions and answers about the previous article – Analyzing the student's ability to comprehend through homework – Subject-specific presentations to reinforce learning ability
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9. Teaching and Learning Strategies

Strategy	The theoretical method and explanation by presenting the material on PowerPoint in the form of diagrams and pictures to attract the student's attention and help him not to feel bored. The practical method is represented by applying what was presented on the computer and conducting daily and monthly exams.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Practical examples browsing, opening closing windows and dialog boxes, and the correct way to deal with palette	Computer basics, computer concept; Phases of the computer life cycle, development of computer generations	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

2	3	Practical examples customization, dealing with icons, and changing screen resolution	Computer advantages and areas of use. Computer classification in terms of purpose, size and type of data	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
3	3	Training the student to create a new user, maximize windows, show the keyboard, identify components Physical Calculator	Computer's components Computer components - physical parts of a computer and the software entities	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
4	3	Training the student dealing with computer software licenses and their types and dealing with original source For programs	Your personal computer, the concept of computer security software licenses	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
5	3	Training the student to deal with computer security	Computer security software licenses.	Lecture and use of the board, oral presentation and demonstration, supported by	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific

				educational charts and images using a data show (projector).	reports
6	3	Training the student to deal with computer privacy	Ethics of the electronic world, forms of transgressions; Computer security: computer privacy	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
7	3	Types and recipes of viruses, how to create a computer image for protection	Computer software licenses and their types Intellectual property » Electronic hacking Malicious software » The most important steps necessary to protect against hacking operations: Computer harm to health.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
8	3	Training the student to deal with operating systems, formatting partitioning the hard disk, internally and	Operating Systems Definition Operating System; Jobs. Objectives.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

		externally	Classification examples For some operating systems	using a data show (projector).	
9	3	Train the student on the Start menu and taskbar, create a file and store it with the student's name on a desktop the desk	Operating Systems Windows 7 operating system.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
10	3	Training the student on uses of the keyboard	Desktop components Start menu taskbar. manipulate the program's windows scroll bars.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
11	3	-Create a folder with a specific name and train on changing the name, hiding, retrieving, deleting, and path to it.	Folders and files icons.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
12	3	Training the student perform operations windows and desktop backgrounds	Operations on windows and desktop background	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

				using a data show (projector).	
13	3	Training the student to use the control panel	Control Panel Windows Control Panel Category	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
14	3	Training the student to delete a specific program and install it again	From the Defragment control panel, organize files inside the computer, install and delete programs	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
15	3	Training the student common computer settings, installing the printer and how to deal with it, setting the time	Some common conditions and settings in the computer, managing printer, setting the time and date, maintaining the initial disks	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

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

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)

	Computer Basics and Office Applications Ministry of Higher Education and Scientific Research - Research and Development Department
Main references (sources)	Yusr Al-Mustafa Science Series - Computer and Internet Basics
Recommended books and references (scientific journals, reports...)	Computer and ready-made software book Basic Skills, written by Dr. Muhammad Bilal Al-Zoghbi and others – – – 20
Electronic References, Websites	University educational platform

1. Course Name:	
English Language	
2. Course Code:	
MTAN1108	
3. Semester / Year:	
First Semester / 2025–2026	
4. Description Preparation Date:	
10–10–2025	
5. Available Attendance Forms:	
In person lectures	
6. Number of Credit Hours (Total) / Number of Units (Total)	
30 h / 2 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Rasoul Salamn Atrim Email: rasol.salman@alayen.edu.iq	
8. Course Objectives	
• Developing language skills • Providing cultural knowledge • Preparing students for the job market • Encouraging research and innovation	• Enhancing students' abilities in reading, writing, listening, and speaking in English. • Providing students with a deep understanding of English-speaking cultures, which enhances their ability to interact in multicultural environments. • Equipping students with the language skills necessary to compete in the global job market. • Supporting scientific research and innovative initiatives in the fields of language, literature, and culture.

9. Teaching and Learning Strategies

• Active Learning: • Project-Based Learning:	• Group Discussions: Encourage students to participate in interactive discussions on study topics, enhancing critical thinking and expression of opinions. • Educational Games: Use games that enhance language skills such as vocabulary and grammar. • Group Projects: Assign projects that require research and collaboration, like preparing reports or giving presentations. • Individual Projects: Encourage students to conduct independent research on topics of interest, enhancing writing and research skills.
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2h	Course description and introduction to English language and its basics.	Cardinal numbers/years/prices/times (in words and figures). Phonetic of alphabet letters, Punctuation, and countries& capitals	Theoretical lecture	Midterm exam Final exam evaluations
2	2h	Explanation and clarification of how words are formed, as well as how to construct sentences and their types.	Arrange letters (make a full word), arrange words (make a full sentence)	Theoretical lecture	Midterm exam Final exam evaluations
3	2h	Explanation of the importance of question words, their functions in the English language, and how they are used.	Question words	Theoretical lecture	Midterm exam Final exam evaluations
4	2h	Explanation of abbreviations & adjectives English language	Abbreviations (short form) & adjectives (and their opposites)	Theoretical lecture	Midterm exam Final exam

					evaluations
5	2h	Explanation of the past and present simple tenses of English language, how they are used, and understanding their grammatical structures.	Present simple & and past simple tenses	Theoretical lecture	Midterm exam Final exam evaluations
6	2h	Explanation of the present continuous tense, clarification of its grammatical structures, and ways to use it.	Present continuous	Theoretical lecture	Midterm exam Final exam evaluations
7	2h	Understanding possession and pronouns, and the ways to pronounce the letter 's' at the end of a word.	Possessions, pronunciations -s (at the end of word), and pronouns	Theoretical lecture	Midterm exam Final exam evaluations
8	2h	Understanding medical terminology and its importance in medicine fields.	Medical terminology	Theoretical lecture	Midterm exam Final exam evaluations
9	2h	Clarifying the importance of medical terminology in communication among medical staff.	Language of medicine and medical terms	Theoretical lecture	Midterm exam Final exam evaluations
10	2h	Understanding how to write and pronounce medical terms.	Spelling and pronunciation of medical terms	Theoretical lecture	Midterm exam Final exam evaluations
11	2h	Understanding the parts of a medical term (root and prefix).	Root and prefixes of medical terms	Theoretical lecture	Midterm exam Final exam evaluations

12	2h	Understanding the parts of medical terms (suffixes)	Suffixes of medical terms	Theoretical lecture	Midterm exam Final exam evaluations
13	2h	Understanding and explanation of Body structure Planes of the body	Body structure Planes of the body	Theoretical lecture	Midterm exam Final exam evaluations
14	2h	Understanding Orientation and directional Body positions	Orientation and directional Body positions	Theoretical lecture	Midterm exam Final exam evaluations
15	2h	Understanding and explanation of body cavities	Body cavities	Theoretical lecture	Midterm exam Final exam evaluations

11. Course Evaluation

The grade is distributed out of (100 points) based on the tasks assigned to the student as follows:

1. Rate: 30 (midterm exam 25 points and 5 points for daily attendance and participation)
2. Final exam: 70 points.

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1. English grammar in use: Raymond Murphy (4 th edition) 2. Medical Terminology– An Illustrated Guide (7 th edition): Barbara Janson Cohen & Ann DePetris

Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	RCOG website OpenMD wbsite

الكورس الثاني-المرحلة الأولى
قسم تقنيات التخدير-كلية التقنيات الصحية والطبية
وصف المقررات الدراسية باللغة الإنجليزية
العام الدراسي 2026/2025

1. Course Name:	
Medical physics (2)	
2. Course Code:	
MTAN1201	
3. Semester / Year:	
Second semester / 2025-2026	
4. Description Preparation Date:	
10-2-2026	
5. Available Attendance Forms:	
Daily attendance	
6. Number of Credit Hours (Total) / Number of Units (Total)	
"2 theoretical + 4 practical (per week)" /Number of units 4	
7. Course administrator's name (mention all, if more than one name)	
Name: MSC. Bassam Abed el-latif	
Email: maherkhanafer400@gmail.com	
8. Course Objectives	
Course Objectives	General Objectives: By the end of the academic year, the student will be able to: - Identify the physical phenomena covered in the five chapters of the course and relate them to medical phenomena observed in practical life, such as blood flow, devices for measuring heart or brain pulses, body temperature, and pressures. Specific Objectives: The student will be able to: - Understand the concepts of pressure, fluids, viscosity, and heat. - Learn the laws of gases and differentiate between real and ideal gases. - Recognize medical phenomena observed during practical life.

9. Teaching and Learning Strategies					
Strategy	• Asking questions and guiding students to discover the answers themselves. • Using animations and videos to explain scientific concepts. • Using discussions and interactive activities to increase engagement and understanding. • Assessing students' progress through continuous evaluations like short questions. • Allowing students to train in a real-world environment to acquire practical skills.				
10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1-2-3	6the + 12 practice	Explain the functional structure of the heart and blood vessels Clarify the physical principles related to blood flow	Physics of the cardiovascular system.	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
4	2the + 4 practice	Define the laser and explain its working principle Clarify the physical properties of the laser	laser in medicine.	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
5	2the + 4 practice	Explain the electrical principles related to the human body	Electricity within the body.	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
6	2the + 4 practice	Explain the effects of electric and magnetic fields on the human body	application of electricity and magnetism in medicine.	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).

7	2the + 4 practice	Understand the physical nature of light and the physical principles of light-based medical imaging	Light in medicine, sound in medicine.	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
8	2the + 4 practice	Explain the physical basis of nuclear medicine applications	Physics of nuclear medicine radiotherapy, radiation protection.	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
9	2the + 4 practice	Understand the properties of solar radiation and relate solar energy to practical applications	Solar energy technology	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
10	2the + 4 practice	Applications of nanotechnology in disease reactors and technological developments	Nanotechnology in renewable energy systems	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
11	2the + 4 practice	Integration of nanotechnology systems and their role in medical advancements in modern physics	Energy sector products using nanomaterials	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
12-13	4the + 8 practice	Physical understanding of hydrogen production using nanotechnology	Nanotechnology to Hydrogen Production	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
14	2the + 4 practice	The role of nanotechnology in scientific and medical advancements	Nanomaterials for the Conversion of Carbon Dioxide into Renewable Fuels and Value-Added Products	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).

15	2the + 4 practice	Explain the role of nanomaterials in enhancing the efficiency of carbon dioxide capture from the atmosphere	Nanomaterials and Direct A Capture of CO2	Lecture presentation Practical application in the laboratory	practical and theoretical exams (midterm + final semester exam).
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11.Course Evaluation

The students will be assessed through a midterm exam (40 marks) + a final exam (60 marks), with a total of 100 marks.

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	3. Introduction to Medical Physics, 2022. 4. Physics of the body, 1999.
Main references (sources)	3. Zabel, Hartmut. Volume 1 Physical Aspects of the Human Body, Berlin, Boston: De Gruyter, 2023. https://doi.org/10.1515/9783110756951 . 4. https://www.freebookcentre.net/physics-books-download/Medical-Physics-by-Dr.-Y.-Ajiboye.html .
Recommended books and references (scientific journals, reports...)	3. Journal of Medical Physics. 4. Journal of Physica Medica.
Electronic References, Websites	https://journals.lww.com/JOMP/pages/default.aspx

1. Course Name:	
General anatomy 2	
2. Course Code:	
MTAN 1202	
3. Semester / Year:	
First year- second semester	
4. Description Preparation Date:	
24/2/2025	
5. Available Attendance Forms:	
Full-time and official attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theory Lecture: 2 hours , Practical: 4 , Total: 6 (2+4) per week 90 hours per semester	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. huda sherif Email: hhmsh2373@gmail.com	
8. Course Objectives	
Anatomy 2 is considered a complement to Anatomy 1 and shares the same And the skills and values acquired	A. General Objectives: - To familiarize the student with the organs of the human body and their tissues. B. Specific Objectives: - To identify the structural components of each organ. - To distinguish the tissues that compose each organ. - To recognize the specialized functions of the organs and their tissues.
9. Teaching and Learning Strategies	

Strategy	Blended learning Lectures (Interactive) Online Lectures (Interactive) Tutorial Role play Computer-based learning (computers e-learning, free downloadable software usage, Webinar) Team-based learning (group discussion, presentation) Discussion
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10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1+2+3	6 the + 12 prac	Explain the anatomical structure of the central nervous system	Central nervous systems functions + Peripheral nervous systems spinal nervous + Sensory and motor nervous systems	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning (presentation) Discussion Problem solving	Midterm exams Final exams evaluations

4	2 the + 4 prac	Explain the anatomical structure of the digestive system	GIT systems: parts, structure of walls and stomach	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
5	2 the + 4 prac	Explain the anatomy of the accessory digestive glands and their clinical relevance to anesthesia.	Salivary glands structure , Pancreases and gall bladder	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
6	2 the + 4 prac	Explain the anatomy and functions of the liver and its role in the metabolism	Liver anatomy structures and functions	Lectures (Interactive) Online Lectures	Midterm exams Final exams evaluations

		of anesthetic drugs.		(Interactive) Role play Team-based learning presentation) Discussion Problem solving	
7	2 the + 4 prac	Explain the anatomical structure of the urinary system and its role in fluid balance and drug excretion.	Urinary systems: Kidenys, Ureter, urinary bladder, urethera	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
8	2 the + 4 prac	Explain the anatomy of the muscular system	Muscular system	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning	Midterm exams Final exams evaluations

				presentation) Discussion Problem solving	
9+10	4 the + 8 prac	Explain the anatomy of the male and female reproductive system	Reproductive system- male genitalia + Female reproductive organs	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
11+12	4 the + 8 prac	Explain the anatomy of the endocrine system and the impact of hormonal disorders on anesthesia.	Endocrine glands- anatomy and functions	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations

13	2 the + 4 prac	Explain the anatomy of the sensory system and its role in pain perception	Special sense anatomy	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
14	2 the + 4 prac	Explain the anatomy of the skeletal system	Skeletal system anatomy	Lectures (Interactive) Online Lectures (Interactive) Role play Team-based learning presentation) Discussion Problem solving	Midterm exams Final exams evaluations
15	2 the + 4 prac	Explain the principles of growth and genetics	The development and Inheritance	Lectures (Interactive) Online Lectures	Midterm exams Final exams evaluationsUpper and lower limb

				(Interactive) Role play Team-based learning presentation) Discussion Problem solving	
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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, Sciencedirect springer link, Pdfdrive
Electronic References, Websites	www.who.int

1. Course Name:	
General physiology 2	
2. Course Code:	
MTAN1203	
3. Semester / Year:	
First year- second semester	
4. Description Preparation Date:	
26/1/2026	
5. Available Attendance Forms:	
Full-time and official attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theory Lecture: 2 hours , Practical: 4 , Total: 6 (2+4) per week	
90 hours per semester	
4 CREDITS	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Bassel Adel Ismail	
Email: bassel.adel@alayen.edu.iq	
8. Course Objectives	
Physiology 2 is considered a complement to Physiology1 and shares the same	By the end of the academic year, the student will be able to understand the functions of the various body organ systems.
And the skills and values acquired with increased knowledge about the systems affected by the anesthesia process, especially the nervous and cardiac systems.	Specific Objectives • Identify the principles of general physiology and its relationship with other sciences. • Differentiate between the physiological normal state of the body and the state of disease (pathophysiology). • Demonstrate proficiency in using laboratory equipment and tools. • Perform analyses of blood and other body fluids.

9. Teaching and Learning Strategies					
Strategy	Lectures (Interactive), Role play, Team-based learning presentation) Discussion, Problem solving				
10. Course Structure Theoretical					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 th + 4 pract	Explain the physiological functions of the digestive system	Physiology of digestive system, Organ of digestion, functions	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
2	2 th + 4 pract	Explain the physiological roles of accessory digestive organs	Accessory organs of digestion and function	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions

3	2 th + 4 pract	Explain the processes of digestion and absorption of carbohydrates, proteins, fats	Steps of digestion (carbohydrates, protein, fat digestion and absorption)	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
4	2 th + 4 pract	Explain the physiological mechanisms of renal function and urine formation	Urinary system, Renal functions, Urine formation	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
5	2 th + 4 pract	Explain the functional roles of the urinary organs in maintaining homeostasis	Organs of urinary system and their function	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming	Weekly, monthly and reporting examinations Scientific Discussions

				and practical discussion	
6	2 th + 4 pract	Explain the role of the kidneys in regulating body fluids, blood pressure, and acid–base balance.	Role of kidney to maintain body fluids to regulate B.Pr., acid base balance	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
7	2 th + 4 pract	Explain the Physiological mechanisms responsible for body temperature control.	Body temperature regulation and control	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
8	2 th + 4 pract	Explain the physiological functions of the brain and their importance in anesthesia.	Nervous system , CNS brain function and centers	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning,	Weekly, monthly and reporting examinations Scientific Discussions

				discussion, brainstorming and practical discussion	
9	2 th + 4 pract	Explain the physiological role of the spinal cord, cerebrospinal fluid	Spinal cord, CSF, Spinal reflexes	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
10	2 th + 4 pract	Explain the physiological function of the peripheral and autonomic nervous systems.	PNS, autonomic and sensory	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
11	2 th + 4 pract	explain the physiological regulation of hormone secretion from endocrine	Endocrine system, control of hormone, types and secretion	Attendance • Lectures (interactive) Online lectures (interactive)	Weekly, monthly and reporting examinations Scientific Discussions

		glands		Use strategy, collaborative learning, discussion, brainstorming and practical discussion	
12	2 th + 4 th pract	Explain the Physiological regulation of hormone secretion from endocrine glands	Hormonal secretion from different glands	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
13	2 th + 4 th pract	Explain the physiological functions of the male and female reproductive systems.	Reproductive system, male and female reproductive system	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions
14	2 th + 4 th	Explain the physiological functions of the		Attendance • Lectures (interactive)	Weekly, monthly and reporting examinations

	pract	skeletal system	Skeletal system physiology	Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Scientific Discussions
15	2 th + 4 th pract	Explain the Physiological mechanisms of vision, hearing, smell, and taste.	Special sense physiology (vision, hearing, Smell and taste)	Attendance • Lectures (interactive) Online lectures (interactive) Use strategy, collaborative learning, discussion, brainstorming and practical discussion	Weekly, monthly and reporting examinations Scientific Discussions

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 practical and 35 degrees for theory

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)

Main references (sources)

Guyton and Hall , Physiology review 2th edition

Recommended books and references (scientific journals, reports...)	Ganongs' Review of Medical Physiology 26th Edition Elsevier, Sciencedirect springer link, Pdfdrive
Electronic References, Websites	University educational platform www.who.int

1. Course Name :	
Biochemistry	
2. Course Code:	
MTAN 1204	
3. Semester / Year:	
Second Term- First Stage	
4. Description Preparation Date:	
21/2/2026	
5. Available Attendance Forms:	
Face to face	
6. Number of Credit Hours (Total) / Number of Units (Total):	
90 hrs (30 hrs theoretical+60 hrs practical)/ 4 units	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Sherif Abed el hamid Email:	
8. Course Objectives	
Course Objectives : By the end of the academic year, the student will be able to: • Understand the fundamental principles of biochemistry and their applications. • Correlate diseases with abnormal changes in blood components and other body fluids • Collect and handle biological specimens effectively. • Operate and maintain necessary laboratory instruments and tools. • Qualitatively and quantitatively analyze blood constituents and other body fluids. • Work safely within the laboratory environment.	
9. Teaching and Learning Strategies	
Strategy	Lectures Discussions Demonstrations Lab. Work E. learning

10. Course Structure					
Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 th +4 pract	Understanding protein disorders.	Metabolism of protein abnormalities.	Interactive-visual	Exams and quizzes
2	2 th +4 pract	Classification of enzymes.	Enzymes, definition, classification, general properties, function.	Interactive-visual	Exams and quizzes
3	2 th +4 pract	Analyzing factors affecting the rate of enzymatic reactions.	Factors affecting enzymes activity, enzyme inhibition.	Interactive-visual	Exams and quizzes
4	2 th +4 pract	The ability to utilize blood enzyme levels as diagnostic markers for disease	Enzymes in clinical diagnosis.	Interactive-visual	Exams and quizzes
5	2 th +4 pract	Knowledge of vitamin classification.	Vitamins and coenzymes, fat soluble vitamins, water soluble vitamins.	Interactive-visual	Exams and quizzes

6	2 th +4 pract	Understanding energy requirements.	Nutrition and energy requirements.	Interactive-visual	Exams and quizzes
7	2 th +4 pract	Understanding the chemical nature of hormones.	Hormones, definition, chemical nature, steroid hormones, proteins, amines.	Interactive-visual	Exams and quizzes
8	2 th +4 pract	Reading and interpreting Liver Function Test (LFT) results.	Liver function tests, bilirubin, conjugated and non conjugated, bile pigment, Brom Sulfone Phthalien (BSP), diagnosis of various types of jaundice.	Interactive-visual	Exams and quizzes
9	2 th +4 pract	Differentiating between types of jaundice.	Liver diseases, hepatitis, cirrhosis, necrosis.	Interactive-visual	Exams and quizzes
10	2 th +4 pract	Understanding the biochemical changes associated with hepatitis.	Changes in serum enzymes in liver disease.	Interactive-visual	Exams and quizzes
11	2 th +4	Explaining the pathways of fatty acid	Biosynthesis and catabolism of fatty acid	Interactive-visual	Exams and quizzes

	pract	synthesis and degradation.			
12	2 th +4 pract	Understanding the body's mechanism for eliminating nitrogenous toxins.	Stroid Biosynthesis, Nitrogen metabolism	Interactive-visual	Exams and quizzes
13	2 th +4 pract	Assessment of renal function (Kidney Function Tests).	Kidney function tests, measuring glomerular filtration, tubular filtration, renal blood flow.	Interactive-visual	Exams and quizzes
14	2 th +4 pract	Urinalysis.	Formation and composition of urine, changes in urine volume, specific gravity, constituents.	Interactive-visual	Exams and quizzes
15	2 th +4 pract	Applying occupational safety procedures.	Urea, urea clearance test, creatinine, creatinine clearance test, insulin test phenol suifonephalam (PSP), concentration test, dilution test.	Interactive-visual	Exams and quizzes
11. Course Evaluation					

The following evaluation methods are adopted:

1. Exams
2. Quiz
3. Report
4. Attendance
5. Class Activity
6. Technical Practice

Distribution of grades:

1. Practical Midterm 15%
 2. Theoretical Midterm 25%
 3. Theoretical Final Term 35%
 4. Practical Final Term 25%
- Total 100%

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	Rodwell, V. W., Bender, D. A., Botham, K. M., Kennelly, P. J., & Weil, P. A. (2018). <i>Harper's Illustrated Biochemistry</i> (31st ed.). New York: McGraw-Hill Education. Gowenlock, A. H. (2002). <i>Varley's Practical Clinical Biochemistry</i> (6th ed.). London: CRC Press / Heinemann Medical Books.
Main references (sources)	
Recommended books and references (scientific journals, reports...)	
Electronic References, Websites	

1. Course Name:	
Microbiology	
2. Course Code:	
MTAN 1205	
3. Semester / Year:	
2 nd semester / 2025-2026	
4. Description Preparation Date:	
5/2/2026	
5. Available Attendance Forms:	
Attendance in the classroom	
6. Number of Credit Hours (Total) / Number of Units (Total)	
theoretical: 2 , Practical: 4 , Total: 6 / 6 credits	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Amal Ebrahim Dayoub Email: amal.dayoub@latakia-univ.edu.sy	
8. Course Objectives	
	• General objective: By the end of the course, the student will be able to: Identify microorganisms, their general characteristics, and their classification, structure and function, and Learn methods of laboratory analysis of pathogenic microorganisms. A: Knowledge Objectives A1- Study bacteria, virus, Fungi, Parasites: their structure, classification, and their role in the environment, and what are the diseases which cause to humans (Diagnosis, prevention, treatments). A2- Definition of antibiotics and antibiotic resistance A3- Learn methods of sterilizing and disinfecting tools, materials, and surfaces to kill microorganisms that are pathogenic to humans. •
9. Teaching and Learning Strategies	
Strategy	Theoretical methods, practical laboratory methods, lectures, visual aids and videos.

10. Course Structure:

Theoretical and practical syllabus

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2 th + 4 pract	Explains the role of microorganisms in the medical environment and their relationship to infections associated with surgery and anesthesia	The microorganism	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory
2+3	2 th + 4 pract	Describes the characteristics of bacteria that cause respiratory and blood infections which may complicate the anesthesia process.	Bacteria: classification, structure and function	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory
4	2 th + 4 pract	Interprets the importance of bacterial culture results in evaluating the patient's health status before administering anesthesia.	Media and culture	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory

5	2 th + 4 pract	Identifies fungal risks that may affect immunocompromised patients in intensive care units (ICUs).	Fungi: characteristics, reproductive classification	Lectures (Interactive) Team-based learning (presentation) Discussion Problem solving	Written tests Practical tests in laboratory
6-7	2 th + 4 pract	Explains the principles of viral transmission respiratory tracts and blood and their impact on anesthesia protocols.	Virus: structure, classification reproductive	Lectures (Interactive) Team-based learning (presentation) Discussion Problem solving	Written tests Practical tests in laboratory
8	2 th + 4 pract	Analyzes the physiological changes resulting from parasitic infections and their effect on patient stability during surgery.	Parasites: introduction, parasite and host relationship, diagnosis	Lectures (Interactive) Team-based learning (presentation) Discussion Problem solving	Written tests Practical tests in laboratory
9	2 th + 4 pract	Classifies pathogenic parasites that may	Class of parasite (protozoa, helminthes and ectoparasites)	Lectures (Interactive) Team-based learning	Written tests Practical tests in laboratory

		lead to systemic complications affecting the patient's vital functions.		presentation) Discussion Problem solving	
10	2 th + 4 pract	Relates chronic helminthic infections (such as anemia) to the evaluation of anesthetic risks for the patient	Helminthes: Structure and classification	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory
11-12	2 th + 4 pract	Explains the body's immune response to surgery and anesthesia and how to protect the patient from septic shock.	The immune system, mechanism of immune system (innate and adaptive immunity).	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory
13	2 th + 4 pract	Describes the pharmacological interactions between antibiotics, anesthetic drugs, and local anesthetics	Antibiotics and Antibiotic resistance	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory
14	2 th	Explains the laboratory basis for	Antigen, antibody reaction	Lectures	Written tests

	+ 4 pract	diagnosing acute infections that necessitate postponing non-emergency surgical operations.		(Interactive) Team-based learning presentation) Discussion Problem solving	Practical tests in laboratory
15	2 th + 4 pract	Applies the scientific principles of sterilization to ensure the safety of anesthesia tools and prevent infection transmission within operating theaters.	Sterilization and Disinfection	Lectures (Interactive) Team-based learning presentation) Discussion Problem solving	Written tests Practical tests in laboratory

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

12.Learning and Teaching Resources

Required textbooks (curricular books, if any)	
Main references (sources)	1-Ref- Fritz H, Kurt. A., Johannes, E., Rolf. M. Medical Microbiology, Thieme Stuttgart- Newyork. 2005
Recommended books and references (scientific journals, reports...)	2. . Levinson,W. Medical microbiology and immunology (thirteenth edition), 2014 3. parija,S.CH. Microbiology and Immunology,2 nd Edition,

	INDIA, 2012
Electronic References, Websites	University educational platform

1. Course Name:	
Computer principles 2	
2. Course Code:	
MTAN1206	
3. Semester / Year:	
First level/ second semester	
4. Description Preparation Date:	
10/2/2026	
5. Available Attendance Forms:	
Full-time and official attendance hours	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theoretical 1 + practical 2 = 3	
45 h /2unit	
7. Course administrator's name (mention all, if more than one name)	
Name: mohammad Jasim	
Email: muhamad.jasim@alayen.edu.iq	
8. Course Objectives	
Course Objectives	-Student comprehension - The ability to analyze and apply what you have learned practically on the computer - The application is done by presenting the material to the students in the laboratory and then applying it by them - Direct questions and answers about the previous article - Analyzing the student's ability to comprehend through homework

- Subject-specific presentations to reinforce learning ability

9. Teaching and Learning Strategies

Strategy The theoretical method and explanation by presenting the material on PowerPoint in the form of diagrams and pictures to attract the student's attention and help him not to feel bored. The practical method is represented by applying what was presented on the computer and conducting daily and monthly exams.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	Student familiarity with the Microsoft Office suite, particularly Microsoft Word 2010.	Microsoft Word 2010 operation Microsoft Word 2010 program	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
2	3	Training the student Interface and all the main interface tools Microsoft Office 2010.	Microsoft Office 2010 Interface	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

3	3	Training the student to create a new user, maximize windows, show the keyboard, identify components Physical Calculator	Train the student on how to create a new file.	File tab, Home tab	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
4	3	Training the student dealing with computer software licenses and their types dealing with the original source For programs	Training the student on how to plan a page determine page width	Page Layout tab, Width tab.	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
5	3	Training the student adding a group of objects in Microsoft Word 2010	Inserting objects Microsoft Word 2010	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
6	3	Training the student adding a group of pages in Microsoft Word 2010	Insert tab Group of pages	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
7	3	Teaching students how add tables and everything	Tables Collection	Lecture and use of the board, oral presentation and demonstration,	Theoretical and practical examinations (oral and written), conducted daily and monthly,

		related to tables		supported by educational charts and images using a data show (projector).	along with scientific reports
8	3	Teaching students how to add tables everything related to tables	Tables Collection	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
9	3	Training students on how to add drawings geometric shapes in Microsoft Word 2010.	A collection of illustrative drawings.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
10	3	Training the student on adding a page header and footer Microsoft Word 2010	Links section, Header section, Footer section.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
11	3	Training the student to symbols and familiarize them with text enhancements.	Text set Symbols set.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

12	3	Training the student in all skills related to Microsoft Word 2010	Additional tasks Microsoft Word 2010	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
13	3	Training the student everything related Microsoft PowerPoint 2010, from opening a new file and saving it to creating a presentation.	Microsoft PowerPoint 2010: Opening a new file saving it to the desktop - Adding and editing slides (Title slide, Title with content, Subtitle, Two contents comparison, Title only, Blank slide)	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
14	3	Training students on adding animations and other skills to pages Microsoft PowerPoint 2010	Adding animations to slides	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using a data show (projector).	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports
15	3	Training students on how to add formatting to slides in Microsoft PowerPoint 2010	Adding a theme. Master Views group.	Lecture and use of the board, oral presentation and demonstration, supported by educational charts and images using	Theoretical and practical examinations (oral and written), conducted daily and monthly, along with scientific reports

				a data show (projector).	
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					
12.Learning and Teaching Resources					
Required textbooks (curricular books, if any)			Computer Basics and Office Applications Ministry of Higher Education and Scientific Research - Research and Development Department		
Main references (sources)			Yusr Al-Mustafa Science Series - Computer and Internet Basics		
Recommended books and references (scientific journals, reports...)			Computer and ready-made software book Basic Skills, written by Dr. Muhammad Bilal Al-Zoghbi and others – – – 20		
Electronic References, Websites			University educational platform		