	Ministry of Higher Education and Scientific Research - Iraq Al-Nahrain University College of Science Applied Pathological Analysis Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Human Physiology			**Module Delivery**	
Module Type	CORE			☒**Theory** ☒**Lecture** ☒**Lab** ☒**Tutorial** ☒**Practical** ☒**Seminar**	
Module Code	APPA2213				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level		2	**Semester of Delivery**		4
Administering Department		Applied Pathological Analysis	**College**	College of Science	
Module Leader	Dr. Evan H. Sulaiman Dr. Wael Adil Obaid Dr. Shaima Yousif		**e-mail**	evan.hameed@nahrainuniv.edu.iq Waeladil@nahrainuniv.edu.iq	
Module Leader's Acad. Title		Lecturer	**Module Leader's Qualification**		Ph. D.
Module Tutor	Dr. Wael Adil Obaid		**e-mail**	Waeladil@nahrainuniv.edu.iq	
Peer Reviewer Name		Dr. Evan H. Sulaiman	**e-mail**	evan.hameed@nahrainuniv.edu.iq	
Scientific Committee Approval Date		18/1/2025	**Version Number**	1.0	
Lab. Staff		Dr. Zainab Sabeeh, MSc. Ahmed Jabbar, MSC. Zeena Murshed, MSc. Eman Adnan Abdulmajeed, MSc. Hadeer Faris, Dr. Ruaa Hameed Abdulridha, MSc. Noor Dheyaa Jaafar.			

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهذاف انمادج انذراسيح	The course aims to teach students the following: Human physiology is the study of the functions of organs through their biochemical and physical (mechanical) processes of the human body's organs and cells. The main goal of physiology is to study the organs of a living organism and the systems that make them up. Much information about the functions of human organs is obtained through experiments conducted on animals.
Module Learning Outcomes مخرجاخ انتعهم نهمادج انذراسيح	1. learn the structure and physiology of the various body systems: respiratory, urinary, nervous, muscular, etc., in addition to thermal balance, the state of internal homeostasis of the body, and other physiological matters. 2- Developing the student's ability to draw blood samples, in addition to developing the student's ability to dissect some laboratory animals. 3- Identifying the methods of conducting various analyses that reflect the health of the various body systems. 4- learn the correct values for all physiological variables in the body
Indicative Contents انمحتياخ الإرشاديح	General Introduction to Physiology Cell Physiology: General Functions, Cell Membrane Transport General Idea about Body fluids: Types, Composition, and Functions. Unit of Measurement, Conversion and Conversion factor.
	Blood: Composition, Specific Functions of each Compartment.
	Plasma and Serum Differences and Separation. RBCs: Definition, Structure, and Normal Value; Hb Definition, Structure, and Normal Value; Blood Groups. Erythropoiesis, Homeostasis, Death and Disposal. White Blood Cells: Classification, Specific Function, Normal Value. Platelet: Definition, Function, Normal Value, Thrombopoiesis and Hemostasis

	Heart Physiology: Conductive System, Cardiac Output (Mechanics and Control) and Factor Affecting. Vascular (Blood Vessels) Physiology: Mechanics and Control; Blood Pressure; and Factor Affecting.
	Lymphatic Physiology: Organs: Composition, Function of Each part. Lymph: Structure, Hemodynamic and Factor Affecting their Movement.
	Respiratory Physiology: Parts and Specific Functions; Ventilation: Mechanics and Control. External Respiration, Gas Blood Transport, Internal Respiration: Mechanics, Control and Factor affecting. Lung Volumes: Normal Values and Factor Affecting; Conscious and Un Conscious Control of Respiration. Role of Pons and Medulla in Respiratory Transient.
	Acid-Base Balance: Definition, Buffer Systems, and Role of Body Systems In the Regulation.
	Digestive Physiology: GIT: Part General Function, Food Movement, and Control. Swallowing Reflex Digestive Physiology: GIT Chemical Digestion, Absorption, and Control. Defecation Reflex Digestive Physiology: Accessory Organs: Secretion and Their Role in Digestion. Secretion Control.
	Urinary Physiology: General Functions of US. Urine: Definition and Normal Constitute. Physical and Chemical Property of Urine. Urinary Tract: Parts and Function. Urine Hemodynamic and Control. Normal Urine Daily Volume and Factor Affecting.
	Role of Kidney in Urine Formation and Maintenance of Body Fluids and The Role In Acid-Base Balance.
	Muscles Physiology: Types and Functions. Generation of Action Potential, Contraction, and Sliding-Filament theory.
	Nervous Physiology: Neuroglia: Definition, Types, and Function. Neurons: Definition, Types, and Function.
	Generation of Action Potential. Neuronal Conduction: Types and Speed. Synapsis: Types, and Function.
	Endocrine Physiology: Endocrine Glands Types and Secretion. Hormone: Types, Normal Value, Function and Control of Secretion
	Exam

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	- Encourage students to take structured notes during lectures. - - Provide practical questions and problem-solving exercises. - - Actively participate in group discussions and collaborative activities. - - Use textbooks, online resources, and supplementary materials to enhance learning. - - Provide constructive feedback on assignments and assessments. - - Review helps students understand their strengths and areas for improvement. Teaching Strategies: - Encourage students to actively engage with the material through group discussions and activities to promote deeper understanding. - Provide well-structured lectures that provide a clear overview of the topic. - Incorporate videos, animations, and interactive simulations to illustrate complex biological processes. - Assign readings or video lectures as homework and use class time for discussions and activities.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	94	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	31	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.5
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	all	ALL
	Assignments	2	5% (10)	3.11	ALL
	Projects / Lab.	0	15% (10)	Continues	ALL
	Seminar	1	10% (10)	Continues	ALL
Summative assessment	**Midterm Exam**	1 hr	10% (10)	7	ALL
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	General Introduction to Physiology Cell Physiology: General Functions, Cell Membrane Transport General Idea about Body fluids: Types, Composition, and Functions. Unit of Measurement, Conversion and Conversion factor.
Week 2	Blood: Composition, Specific Functions of each Compartment Plasma and Serum Differences and Separation. RBCs: Definition, Structure, and Normal Value; Hb Definition, Structure, and Normal Value; Blood Groups. Erythropoiesis, Homeostasis, Death and Disposal. White Blood Cells: Classification, Specific Function, Normal Value. Platelet: Definition, Function, Normal Value, Thrombopoiesis and Hemostasis
Week 3	Heart Physiology: Conductive System, Cardiac Output (Mechanics and Control) and Factor Affecting. Vascular (Blood Vessels) Physiology: Mechanics and Control; Blood Pressure; and Factor Affecting.
Week 4	Lymphatic Physiology: Organs: Composition, Function of Each part. Lymph: Structure, Hemodynamic and Factor Affecting their Movement.
Week 5	Respiratory Physiology: Parts and Specific Functions; Ventilation: Mechanics and Control. External Respiration, Gas Blood Transport, Internal Respiration: Mechanics,

	Control and Factor affecting. Lung Volumes: Normal Values and Factor Affecting; Conscious and Un Conscious Control of Respiration. Role of Pons and Medulla in Respiratory Transient.
Week 6	Acid-Base Balance: Definition, Buffer Systems, and Role of Body Systems In theRegulation.
Week7	Digestive Physiology: GIT: Part General Function, Food Movement, and Control. Swallowing Reflex Digestive Physiology: GIT Chemical Digestion, Absorption, and Control. Defecation Reflex Digestive Physiology: Accessory Organs: Secretion and Their Role in Digestion. Secretion Control.
Week8	Mid Exam
Week9	Urinary Physiology: General Functions of US. Urine: Definition and Normal Constitute. Physical and Chemical Property of Urine. Urinary Tract: Parts and Function. Urine Hemodynamic and Control. Normal Urine Daily Volume and Factor Affecting.
Week 10	Role of Kidney in Urine Formation and Maintenance of Body Fluids and The Role In Acid-Base Balance.
Week11	Muscles Physiology: Types and Functions. Generation of Action Potential, Contraction, and Sliding-Filament theory.
Week12	Nervous Physiology: Neuroglia: Definition, Types, and Function. Neurons: Definition, Types, and Function.
Week13	Generation of Action Potential. Neuronal Conduction: Types and Speed. Synapsis: Types, and Function.
Week14	Endocrine Physiology: Endocrine Glands Types and Secretion. Hormone: Types, Normal Value, Function and Control of Secretion
Week 15	Exam

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
Weeks	**Material Covered**
Week 1	Introduction: Characteristics of good technician. How To avoid contamination of Specimen and Technician. Specimen: Type, Collection, and Preparation. Specimen identification Reports: Types and righting Basic steps for drawing a blood specimen by venipuncture. Complications of

	venipuncture. Blood collection by skin punctures (Capillary Blood). Types of Syringes used in blood collection. Patient care after blood collection. Repeat: Blood drawing. Blood sample Hemolysis: Reasons and how to avoid. Blood Coagulants: Types and Uses. (EDTA, Citrate, OxalBlood Coagulants: Types and Uses. (EDTA, Citrate, Oxalate, Heparin, sodium fluoride).
Week 2	Blood separation to Cells, plasma, and serum. Transport, and storage blood sample PCV, Clotting time, Bleeding time and ESR.
Week3	Blood Smear: Preparation and Importance.
Week4	Complete Blood Counts: RBCs. Manual and Electronic Method. Determination of Hemoglobin: Electronic Method
Week 5	Complete Blood Counts: WBCs. Manual and Electronic Method. Determination of Hemoglobin: Cyanmethemoglobin Method
Week 6	Urine Sample: Importance, Method of Collection, Preparation, Transport and Storage Physical Examination of Urine Sample. Microscopic Examination of Urine: The identification of Epithelial Cells, Blood Cells, crystals, casts, Bacteria, Yeast, Mucus, Casts,……. Etc. Chemical Examination of Urine
Week 7	Semen Analysis: Type of Collection & Physical Examination Semen Analysis: Cell Counting Technique. Semen Analysis: Motility, Viability, &Morphology.
Week 8	Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts		yes
Recommended Texts	 Guyton and Hall Textbook of Medical Physiolog	
Websites	https://repository.poltekkes-kaltim.ac.id/1147/1/Guyton%20and%20Hall%20Textbook%20of%20Medical%20Phys	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي