Course Description Form

1. Course Name:
Physiology I
2. Course Code:
WBM-31-04
3. Semester / Year:
Semester
4. Description Preparation Date:
23/9/2024
5. Available Attendance Forms:
presence in the classroom
6. Number of Credit Hours (Total) / Number of Units (Total)
30 Hours / 2 Units
7. Course administrator's name (mention all, if more than one name)
Name: Saad M. Sarhan Email: saad.mah@uowa.edu.iq
8. Course Objectives

Course Objectives	Physiology is the science of life. It is the branch of biology that aims to understand the mechanisms of living things, from the basis of cell function at the ionic and molecular level to the integrated behaviour of the whole body and the influence of the external environment. Research in physiology helps us to understand how the body works in health and how it responds and adapts to the challenges of everyday life; it also helps us to determine what goes wrong in disease, facilitating the development of new treatments and guidelines for maintaining human and animal health.
9. Teaching and Learning Strategies	
Strategy	The underlying goal is to explain the fundamental mechanisms th operate in a living organism and how they interact. Besides satisfyin natural curiosity about how animals and humans function, the study physiology is of central importance in medicine and related hea sciences, as it underpins advances in our understanding of disease a our ability to treat it more effectively. It is also important fr psychological and philosophical viewpoints, helping us to understa the nervous system, through which subjective experience is gained a behaviour and learning are controlled.

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1 +2+3	4	Introduction	Introduction, general characterist of the cell, the tissue, the organ, t system.	Lectures presented PDF format	Daily exams + homework assignments + monthly exams
4+5+6	4	cell membrane	Structure of the cell, cell membrane, composition of the c membrane, structure of cell membrane, lipid layers of the ce membrane.	Lectures presented in PDF format	Daily exams homework assignments monthly exams
6+7	4	Lipid layers	The function of the lipid layer of the cell membrane, protein layers of the cell membrane, functions of the protein in the cell membrane, cytoplasm.	Lectures presented in PDF format	Daily exams homework assignments monthly exams
8+9	4	Cell-to-Cell Adhesions	Cell-to-Cell Adhesions, biological glue, cell junction, tight junctions, gap junctions, hemostasis highlights, overview of membrane transport.	Lectures presented in PDF format	Daily exams homework assignments monthly exams
10 +11	4	mechanism of transport	The basic mechanism of transport, unassisted membrane transportation, simple diffusion, net diffusion, dynamic equilibrium, Fick's law of diffusion, assisted membrane transport.	Lectures presented in PDF format	Daily exams homework assignments monthly
12	4	mechanism of transport	Assisted membrane transportation (continued), Facilitated diffusion is passive carrier-mediated transport	Lectures presented in PDF format	Daily exams homework assignments monthly
13	4	Introduction to neural communication	Introduction to neural communication, depolarization and hyperpolarization, electrical signals during changes in ion movement, Voltage-gated channels, chemically gated channels, thermally gated channels. Implicit differentiation and fraction power: Introduction,	Lectures presented in PDF format	Daily exams homework assignments monthly

			Examples.		
14	4	Electric signaling	Electric signaling, graded potentials, passive current flow, action potentials, all-or-none law, frequency of action potentials, myelinated fibers, velocity of action potential propagation.	Lectures presented in PDF format	Daily exams homework assignments monthly
15	4	Electrical synapses	Electrical synapses, chemical synapses, neurotransmitter, excitatory synapses, inhibitory synapses, grand postsynaptic potential, temporal summation, spatial summation.	Lectures presented in PDF format	Daily exams homework assignments monthly

11. Course Evaluation

- Daily exams with practical and scientific questions.
- Participation scores for difficult competition questions among students
- Establishing grades for environmental duties and the reports assigned to them
- Semester exams for the curriculum, in addition to the mid-year exam and final exam

12. Learning and Teaching Resources

Required textbooks (curricular books, if any)	• Physiology for Engineers (Apply Engineering Methods to Physiological Systems) Michael Chappell Department of Engineering Science University Oxford • Introduction to modeling in physiology a medicine Cobelli C., Carson E. First edition
Main references (sources)	• College library to obtain additional sources for academic curricula • Check scientific websites to see rec developments in the subject
Recommended books and references (scientific journals, reports…)	All reputable scientific journals that are related the broad concept of designing hospitals and th results