University of Petra
Faculty of Pharmacy and Medical Technology

Department of Pharmacology and Biomedical Sciences

Coure Title	Physiology
Course No	502236
Level	2
Credit Hours	4 crd hr
Prerequisite/Co-Requisite	Anatomy and Histology (502235)
Instructor	Maysaa Shubaita
Course Coordinator	N/A
Phone	5715546, ext 509

Main Text Book : Principles of Anatomy and Physiology, 11th edition 2006, by Gerard J.Tortora and Bryan Derrickson.
The student is responsible for all material covered in lectures.

Course Outline:

- **This Course Covers the Following Topics:**

1. Introduction:	A. Anatomy and Physiology defined. B. Characteristics of the living human organism: Homeostasis. C. Control of Homeostasis.
2. Cell Physiology:	A. Plasma Membrane. B. Transport Across the Membrane.
3. Body fluids:	A. Fluid Compartments and Fluid Balance. B. Electrolytes in Body Fluids.
4. Muscle physiology:	A. Contraction and Relaxation of Skeletal Muscle Fibers B. Muscle Metabolism. C. Control of Muscle Tension.
5. Nerve physiology:	A. Electrical signals in neurons.

	B. Signal Transmission at Synapses. C. Neurotransmitters.
6. The Spinal Cord & Spinal Nerves:	A. Spinal Cord Anatomy – Overview. B. Spinal Cord Physiology.
7. The Autonomic Nervous System:	A. ANS Neurotransmitters and Receptors. B. Physiological Effects of the ANS. C. Integration and Control of Autonomic Functions.
8. Sensory, Motor & Integrative Systems:	A. Sensation. B. Somatic Sensations. C. Somatic Sensory Pathways. D. Somatic Motor Pathways. E. Integrative Functions of the Cerebrum.
9. The Special Senses:	A. Olfaction: Sense of Smell. B. Gustation: Sense of Taste. C. Vision. D. Hearing and Equilibrium.
10. The Endocrine System:	A. Comparison of Control by the Nervous and Endocrine Systems. B. Endocrine Glands. C. Hormone Activity. D. Mechanisms of Hormone Action. E. Control of Hormone Secretion. F. Hypothalamus and Pituitary Gland. G. Thyroid Gland. H. Parathyroid Glands. I. Adrenal Glands. J. Pancreatic Islets. K. Ovaries and Testes. L. Pineal Gland. M. Thymus Gland. N. Other Endocrine Tissues and Organs, Eicosanoids, and Growth Factors. O. The Stress Response.
11. The Cardiovascular System: The Blood:	Hemostasis.
12. Cardiovascular System: The Heart:	A. Cardiac Conduction System. B. Cardiac Cycle.

	C. Cardiac Output.
13. Cardiovascular System: Blood Vessels and Hemodynamics:	A. Capillary Exchange B. Hemodynamics: Factors Affecting Blood Flow C. Control of Blood Pressure and Blood Flow D. Checking Circulation: Measuring Pulse and Blood Pressure. E. Circulatory Routes
14. The Respiratory System:	A. Pulmonary ventilation. B. Lung volumes and capacities. C. Exchange of oxygen and carbon dioxide. D. Transport of oxygen and carbon dioxide. E. Control of respiration.
15. The Digestive System:	A. Mouth: ➢ Composition and Function of Saliva. ➢ Salivation. ➢ Mechanical and chemical digestion in the mouth. B. Deglutition. C. Stomach: ➢ Mechanical and Chemical Digestion in the Stomach. D. Pancreas: ➢ Composition and Functions of Pancreatic Juice. E. Liver and Gallbladder: ➢ Role and Composition of Bile. ➢ Functions of Liver. F. Small intestine: ➢ Role of Intestinal Juice and Brush-Border Enzymes. ➢ Mechanical Digestion in the Small Intestine. ➢ Chemical Digestion in the Small Intestine. ➢ Absorption in the Small Intestine. G. Large intestine: ➢ Mechanical Digestion in the Large Intestine.

16. The Urinary System:	➢ Chemical Digestion in the Large Intestine. ➢ Absorption and Feces Formation in the LargeIntestine. ➢ The Defecation Reflex. H. Phases of digestion. A. Overview of Renal physiology. B. Glomerular Filtration. C. Tubular Reabsorption and Tubular Secretion. D. Production of Dilute and Concentrated Urine. E. Evaluation of Kidney Function. F. Waste Management in Other Body Systems.

Exams and Grading System:

There will be:

1. One Mid term exam (30 %) on …….
2. Final exam (40 %) on ……
3. Class evaluation (5%).
4. Practical exam (25%): Practical Mid exam on …….

   Practical Final exam ……

* Make-up Exams will be scheduled to all those who have a good reason with the consent of the Dean. The exam may be different from regular exams in content and format.

Attendance Policy:
Lecture attendance is mandatory. Student is allowed maximally 15% absentia of the total class hours. Students will get a two formal notices mentioning of his/her absentia. Student with an excuse will be drawn from the course. Otherwise, student will be deprived from the course with zero mark assigned.

Expected Workload
On average, you should expect to spend at least (3) hours per week on this course.

Feedback
Concerns or complaints should be expressed in the first instance to the course lecturer. If no resolution is forthcoming then the issue should be brought to the attention of your advisor. The advisor will bring it to the Department head to deal with it and if still unresolved the Dean and then ultimately the Vice President.

At the end of the course, the students will fill a course evaluation sheet, evaluating the content of the course, its teaching, the learning, and assessment methods, and lecturer. The monitoring of these students feedback will allows the course quality improvement.

Please, do not forget: Learning is a Life-Long process!!!!!!!!!

Mrs. Maysaa Shubaita