University of Management & Technology
School of Science
Department of Chemistry

BT-411 Human Physiology

Lecture Schedule	WTuesday &Friday: 9:30-10:45	**Semester**	Spring 2021
Pre-requisite	---	**Credit Hours**	3
Instructor	Ms. Anam Amir	**Contact Moodle link**	
Office	3S-37	**Office Hours**	See office window

Course Description	Human Physiology is the core of many areas of biology and is responsible for a large number of scientific breakthroughs in medicine and biotechnology. Biochemistry-II is a comprehensive biochemistry course which includes metabolic pathways of amino acids/proteins, carbohydrates, lipids, nucleic acids. This course deals with kinetics, energy requirements, metabolic regulation in living cells. In this course, the main principles of metabolic biochemistry, the general catalytic and regulatory mechanisms of enzymes are also discussed. This understanding of cell function provides a foundation for many subjects in biological and biomedical sciences. Emphasis is placed on mastering and understanding the principles of cellular reactions and their application to diverse cell types.
Expected Outcomes	Upon completion of this in-depth course on bioenergetics and metabolism, students should have mastered the concepts, and skills and can be able to: 1. Differentiate the anabolic and catabolic pathways and their important enzymatic steps. 2. Estimate energy yield requirements and thermodynamic considerations. 3. Extrapolate how regulation of biochemical pathways leads to normal integrated metabolism.
Textbook(s)	1. Lauralee sherwood ,Human physiology from cell to system, eight edition 2013.
Grading Policy	• Quizzes & Class participation(s): 15% • Assignment 5% • Presentation 5% • Midterm: 30% • Final Exam: 45%

Course Schedule

Week	Lecture #	TOPICS
1	1 2	Introduction to hemostasis Introduction to digestive system
2	1 2	Mouth and stomach functioning Accessory organs
3	1 2	Secretion mechanisms of accessory organs Small intestine function
4	1 2	Absorption of different nutrients Malfunctions of small intestine
5	1 2	Large intestine and diseases of GIT. Renal physiology; Kidney function
6	1 2	Glomerular and tubular functions Osmoregulation through kidney
7	1 2	Reabsorption and secretion of renal hormones Acid-base and fluid balance
8	1 2	Blood cells Blood clotting
9	1 2	Mid Term Exams blood groups, hemostasis and blood clotting
10	1 2	Respiratory physiology Respiratory mechanics
11	1 2	Gas transport Respiratory control, hypoxia
12	1 2	Cell physiology: membrane transport Muscle contraction (Skeletal and smooth)
13	1 2	Neurophysiology: autonomic nervous system Central endocrine system
14	1 2	Peripheryl endocrine system (Thyroid, adrenal gland) Peripheryl endocrine system (Parathyroid gland)
15	1 2	Sex hormones Malfunctioning of endocrine system