University of Management & Technology
School of Science
Department of Life Sciences

ZL -101: Introduction to Zoology

Lecture Schedule	Wednesday & Friday 3:30 pm-4:45pm , 11:00am-12:15pm	**Semester**	Spring 2021
Pre-requisite	F.Sc. /A-level	**Credit Hours**	4
Instructor(s)	Ms Nabiha Naeem	**Contact Moodle link**	nabiha.naeem@umt.edu.pk
Office	**3S-37**	**Office Hours**	Displayed on office door & on Moodle

Objectives

The course will impart knowledge and understanding of:

- Cell division and its significance in cell cycle.
- Concepts and mechanisms molecular basics of animal genetics.
- Chemical basis of animal cell
- study of different animal tissues and enzymes

Expected Outcomes

After studying this course, student will understand:

- Basic concepts of zoology, different branches of zoology
- Chemical basis of animal life
- Animal cell structure and functions of cell organelles
- Cell division and enzymes

Text book & Reference book(s)

1. Pechenik, J. A. (2016). Biology of the invertebrates. 7th Ed. Singapore: McGraw-Hill Education
2. Miller, S. A., & Harley, J. P. (2016). Zoology. 10th Ed. New York, NY: McGraw-Hill.
3. Campbell, N. A., Taylor, M. R., Simon, E. J., Dickey, J. L., Hogan, K., Reece, J. B., & Campbell, N. A. (2018). Biology: Concepts & connections. 9th Ed. New York Pearson.

Grading Policy

Assignments:	10%
Lab:	20%
Quizzes:	10%
Midterm:	25%
Final:	35%

Course Schedule

Week	Lecture #	TOPICS
1	1 2	• **Place of Zoology in Science** • A One-World View: Genetic Unity. The Fundamental Unit of Life, Evolutionary Oneness and the Diversity of Life,
2	1 2	• Environment and World Resources; What is Zoology? The Classification of Animals; The Scientific Method.
3	1 2	• **The Chemical Bases of Animal Life:** • Atoms and Elements: Building Blocks of All Matter, Compounds and Molecules
4	1 2	• Aggregates of Atoms, Aids, Bases, and Buffers, The Molecules of Animals; Fractional account of Carbohydrates, Lipids, Proteins, Nucleotides and Nucleic Acids based on their structural aspects
5	1 2	• **Cells, Tissues, Organs, and Organ System of Animals:** • Structure and Functions of Cell Membranes ; Various Movements across Membranes ; Cytoplasm, Organelles, and Cellular Components ; Functional account of Ribosome's,
6	1 2	• Endoplasmic Reticulum, Golgi Apparatus, Lysosomes, Mitochondria, Cytoskeleton, Cilia and Flagella,
7	1 2	• Centrioles and Microtubules, and Vacuoles based on their structural aspects • The Nucleus: Nuclear Envelope, Chromosomes and Nucleolus.
8	1 2	• Tissues; Diversity in Epithelial Tissue, Connective Tissue, A Muscle Tissue and Nervous Tissue to perform various functions. Structural integrations for functions in Organs and Organ Systems.
9	1 2	• Mid Term • Review
10	1 2	• **Energy and Enzymes: Life's Driving and Controlling Forces:** • Energy and the Laws of Energy Transformation; Activation Energy ;
11	1 2	• Enzymes; Structure, Function a Factors Affecting their Activity • Cofactors and Coenzymes; ATP: How Cells Convert Energy? An Overview • Substrate level phosphorylation
12	1 2	• Classification of Carbohydrates , Lipids , Proteins and Nucleic Acids • Proteins structure and its classification
13	1 2	• **Cell Division** • Mitosis, Cytokinesis, and the Cell Cycle: An Overview, Control of the Cell Cycle Meiosis; • The Basis of Sexual Reproduction; Gamete Formation, Genetic errors and disorders
14	1 2	• Ecology • Gene frequency and Evolution
15		• Final term