



# Syllabus

## Third Semester Courses in Zoology

### 2024 – 2025

#### Contents:

- Syllabus for Open Elective/s (OE)

**USZOO5001OE1 – BIOLOGY OF DISEASE**



**BIOLOGY OF DISEASE**Credits: **Theory 2 (Total 30 hrs)**Prerequisite: **None****Course Objectives:**

1. To introduce the students to various disease-causing pathogens and their modes of infection.
2. To familiarize them with infectious and non-infectious diseases that afflict humans.
3. To help them differentiate between the various types of pathogenic agents.

**Course Outcomes:**

On completion of the course the learner should be able to:

<b>CO</b>	<b>Course Outcomes</b>	<b>Bloom's Taxonomy Level</b>
1	Know the difference between a bacterial, viral, fungal and parasitic infection	Remembering
2	Know the progression and pathophysiology of the common diseases.	Remembering
3	Understand the concept of a biological vector or host and concept of definite and indefinite host.	Understanding
4	Know, Understand and come to a conclusion as to why certain diseases have specific symptom(s) or reaction(s) in humans.	Unders

**UNIT 1**

(15 lectures)

➤ **Bacteria:**

- **Tuberculosis** – description of Causative organism, pathogenicity and progression of disease, mechanism of infection, Treatment approaches.

➤ **Parasite:**

- **Malaria** - Brief idea of the causative organism, Concept of a biological insect Vector, Brief idea of the insect vector, Pathogenicity, medical symptoms and progression of disease, Treatment approaches.

➤ **Yeast:**

- **Candidiasis** – Oral thrush and vaginal thrush, Causes for infection, Symptoms and Treatment approaches.

➤ **Virus:**

- **HPV** - Brief idea of the causative organism, mechanism of infection, HPV and cervical cancer, Prophylactic measures.

**UNIT 2**

(15 lectures)

➤ **Sexually Transmitted:**

- **HIV (Virus)** – Mechanism of Infection, Effect on the immune system and consequence on immunity, progression to AIDS, Treatment approaches and novel therapy
- **Gonorrhoea (Bacteria)** - Description of causative organism, pathogenicity and progression of disease, symptoms and Treatment approaches

➤ **Non-Infectious Diseases:**

- **Cancer** – What is it? Types of Cancers (carcinomas, lymphomas, sarcomas, leukemia. Metastatic vs benign tumours), Causes (Hereditary, Environmental factors, lifestyle, infectious agents). Introduction to some common cancers in the Indian Subcontinent. Treatment modalities (Chemo, Radiation therapy)
- **Diabetes** – What is it? Types of Diabetes (Type I and II, gestational diabetes and Juvenile), Causes and risk factors (Genetic, Lifestyle, Obesity, Environment), Pathophysiology (Insulin action, resistance to insulin), Common symptoms and monitoring of diabetes.

**List of Recommended Reference Books:**

1. Chatterjee, K. D. (2019). Parasitology - Protozoology and Helminthology (13<sup>th</sup> ed). S.Chand Publications.
2. Holt, R. I. G., Cockram, C. S., & Flyvbjerg, A. (Eds.). (2017). Textbook of Diabetes. John Wiley & Sons.

3. Zimmer, C (2014). Parasite Rex. Atria Paperback
4. Weinberg, R. A. (2013). The Biology of Cancer. Garland Science.
5. Jain, S. (2008). A Handbook of Common Diseases: Causes & Cure. Vijay Goyal Publishers.
6. Heelan, J. S., Ingersoll, F. W. (2002). Essentials of Human Parasitology. Delmar Thomson Learning
7. Gillespie, S. H., & Hawkey, P. M (1995). Medical Parasitology - A Practical approach. Oxford Univ Press.

**Evaluation (Theory): Total marks per course - 50**

**I. Formative Assessment ‘for’ Learning (continuous internal assessment - CIA to improve learning).**

CIA- 20 marks

- CIA 1: Written Test – 20 marks

**II. Summative Assessment ‘of’ Learning**

End Semester Examination – 30 marks.

- One question from each unit for 15 marks, with internal choice. Total marks per question with choice -22 to 23.

**Template for the End Semester examination in Semester III for the Open Elective course in Biology of Disease.**

<b>UNITS</b>	<b>REMEMBERING</b>	<b>UNDERSTANDING</b>	<b>APPLICATION and ANALYSES</b>	<b>TOTAL MARKS Per unit</b>
1	7	5	3	15
2	6	6	3	15
<b>TOTAL</b>	13	11	6	30
<b>% WEIGHTAGE</b>	43.3	36.7	20	100

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