

Structure and function of respiratory tract and lungs; Ventilation, External and Internal respiration; Transport of oxygen and carbon dioxide in blood.

Unit V: Cardiovascular System (04 Hours)

Structure of heart, Cardiac cycle, Composition of blood

Unit VI: Renal Physiology (03 Hours)

Functional anatomy of kidney

Unit VII: Reproductive Physiology (04 Hours)

Structure of testis and ovary; Spermatogenesis and Oogenesis.

Practical component (if any) (60 Hours)

1. Preparation of temporary mount of neurons and blood cells (blood film preparation).
2. Preparation of haemin and haemochromogen crystals.
3. Haemoglobin estimation using Sahli's haemoglobinometer.
4. Determination of ABO Blood group.
5. Recording of blood pressure using a Sphygmomanometer.
6. Examination and detailed study of permanent histological sections of mammalian Stomach, Duodenum, Liver, Lung, Kidney, Pancreas, Testis and Ovary.

Essential readings

1. Tortora, G.J. and Derrickson, B.H. (2012). Principles of Anatomy and Physiology. XIIIth Edition, John Wiley and Sons, Inc.
2. Widmaier E, Raff H and Strang K. (2013). Vander's Human Physiology: The Mechanism of Body Functions. XIIIth Edition, McGraw-Hill Education.
3. Guyton, A.C. and Hall, J.E. (2011) Textbook of Medical Physiology. XII Edition, Harcourt Asia Pvt. Ltd/ W.B. Saunders Company.
4. Kesar, S. and Vashisht, N. (2007) Experimental Physiology. Heritage Publishers.
5. Prakash, G. (2012) Lab Manual on Blood Analysis and Medical Diagnostics. S. Chand and Company Ltd.

GENERIC ELECTIVES (GE-2): Nature and Wildlife Studies

Credit distribution, Eligibility and Pre-requisites of the Course

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course	Department offering the course
		Lecture	Tutorial	Practical/ Practice			
Nature and Wildlife Studies	4	2	-	2	12 th Pass	Nil	Zoology

Learning Objectives

The course is designed to acquaint students with varied aspects of wildlife conservation, including its importance, major threats, and management of habitats and populations. The emphasis will be on developing interest and invoking a sense of responsibility among students towards wildlife conservation. The course also explores different techniques, perspectives, and approaches to both identify and achieve wildlife management goals. Further, students will be motivated to pursue careers in the field of wildlife conservation and management..

Learning outcomes

By studying the course the students will develop:

- Understanding about wild life
- Evaluation and Management of Wildlife
- Wild life resources and protection

SYLLABUS OF GE-2

Unit I: Conservation of Nature and Wildlife (06 Hours)

Values of wildlife - positive and negative; Conservation ethics; Importance of conservation; Causes of depletion; World conservation strategies: Wildlife Conservation Society (WCS), Convention on Biological Diversity (CBD), Agenda 21 of United Nations.

Unit II: Evaluation and Management of Wildlife (06 Hours)

Habitat analysis: a) Physical parameters: Topography, Geology, Soil and water; b) Biological Parameters: food, cover, forage; Census method

Unit III: Management of Natural Habitats (04 Hours)

Setting back succession: Grazing logging, Mechanical treatment, Advancing the successional process.

Unit IV: Management Planning of Wildlife in Protected Areas (04 Hours)

Human-wildlife conflict, Captive Breeding, Ecotourism.

Unit V: Wildlife Health and Management (04 Hours)

Care of injured and diseased animals, Quarantine; Zoonotic diseases: Ebola, Salmonellosis, Rabies, Foot and Mouth Disease, MonkeyPox, SARS, Bovine and Avian Flu.

Unit VI: Protected Areas (06 Hours)

National parks and sanctuaries, Biosphere reserves, Conservation and Community reserve, Important features of protected areas in India, Tiger conservation , management and challenges.

Practical component (if any) (60 Hours)

1. Identification of mammalian fauna, avian fauna, herpeto-fauna through direct and indirect evidences seen on a field trip to a wildlife conservation site.
2. Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Various types of Cameras and lenses).
3. Familiarization and study of animal evidences in the field: Identification of animals
4. through pug marks, hoof marks and scats.

5. To study the various animal tracking system: Global Positioning System, Remote Sensing and Biotelemetry.
6. Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences).
7. A report based on a visit to National Park/ Wildlife Sanctuary/ Biodiversity Park or any other wildlife conservation site.

Essential readings

1. Saha, G.K. and Mazumdar, S. (2017). Wildlife Biology: An Indian Perspective. PHI learning Pvt. Ltd. ISBN: 8120353137, 978-812035313
2. A.R.E. Sinclair, J.M. Fryxell and G. Caughley (2006). Wildlife Ecology, Conservation and Management. Wiley-Blackwell, Oxford, UK.
3. S.K. Singh (2005). Textbook of Wildlife Management. IBDC, Lucknow.
4. K. Banerjee (2002). Biodiversity conservation in managed and protected areas. Agrobios, India.
5. B.D. Sharma (1999). Indian Wildlife Resources Ecology and Development. Daya Publishing House, Delhi.
6. R.B. Primack (1998). Essentials of Conservation Biology. Sinauer Associates, Inc. Sunderland, MA.
7. B. B. Hossetti (1997). Concepts in Wildlife Management. Daya Publishing House, Delhi.