

GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)



Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

- **Course No.:** PSZOTC-301
- **Course Title:** Animal Physiology
- **Credits -** 4
- **M.M.:** 100
 - **Minor-1:** 20 marks
 - **Minor-2:** 20 marks
 - **Major Test:** 60 marks

OBJECTIVES

- The course in animal physiology has been designed to familiarize students with the functional mechanisms of the organs and organ systems and their regulation.
- The course will also acquaint the learners with various functional disorders seen at various levels in an organism.

LEARNING OUTCOMES: -

After completion of the course the students will be able to:

1. Understand the concept of digestion and absorption in mammals.
2. Comprehend main disorders of absorption and their control.
3. Understand about the process of erythropoiesis and origin of heart beat.
4. Understand about the adaptation of animals during hypothermia and hyperthermia.
5. Understand the concept of excretion and impulse transmission.
6. Comprehend the concept of muscle contraction.

UNIT-I : Digestion and absorption

- 1.1 Digestion, advantages and digestive coefficient
- 1.2 Process of digestion & its control
 - 1.2.1 Salivary digestion
 - 1.2.2 Gastric digestion
 - 1.2.3 Intestinal digestion, digestive enzymes
 - 1.2.4 Movements in GIT
- 1.3 Absorption in GIT
 - 1.3.1 Carbohydrates
 - 1.3.2 Amino acids
 - 1.3.3 Lipids
- 1.4 Disorders of Malabsorption
- 1.5 Concept of obesity, types, causes and dangers
- 1.6 Jaundice – causes, types, symptoms and control

Unit-II: Blood and Cardiophysiology

- 2.1 Composition of blood and its Functions
- 2.2 Concept of Erythropoiesis, process and factors influencing it
- 2.3 Biosynthesis of Haemoglobin, types of Haemoglobin and functions
- 2.4 Blood coagulation, pathways and clotting factors
- 2.5 Blood groups and transfusion
- 2.6 Bleeding and thrombosis
- 2.7 Heart and its working
- 2.8 Heart beat in mammals
 - 2.6.1 Origin, rhythmicity and conduction
 - 2.6.2 Nervous and chemical regulation

**GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU
(AN AUTONOMOUS COLLEGE)**



**Syllabus and Course of Study in Zoology – M.SC. Semester-III
For examinations to be held in 2021-22, 2022-23, 2023-24**

- 2.6.3 Electrocardiogram and significance
- 2.6.4 Events in Cardiac cycle (Pressure – volume changes) in man
- 2.6.5 Arterial blood pressure, concept, measurement and control

Unit-III : Respiratory Physiology

- 3.1 Nervous regulation of respiration in mammals
- 3.2 Chemical control of respiration and chemoreceptors in mammals
- 3.3 Altitude sickness, concept, symptoms and acclimatization
 - 3.2.1 Adaptation to Extreme Temperature and tolerance to cold and freezing (Hypothermia)
 - 3.2.2 Tolerance to high temperature (Hyperthermia)
- 3.3 Emphysema and Asthama

Unit-IV: Excretory and Neurophysiology

- 4.1 Excretory physiology
 - 4.1.1 Detailed structure of nephron
 - 4.1.2 Glomerular functions
 - 4.1.3 Tubular functions
 - 4.1.4 The rennin angiotensin system
 - 4.1.5 Acidosis and Alkalosis
- 4.2 Neurophysiology
 - 4.2.1 Neuron doctrine and nerve cell organization
 - 4.2.2 Nerve impulse, origin and propagation, Ion channels
 - 4.2.3 Synapsis and transmitters
- 4.3 Functional Anatomy of Brain & spinal cord in vertebrates
- 4.4 Fundamental concept of EEG
- 4.5 Neurophysiology of vision in mammals
- 4.6 Parkinson's disease

Unit-V: Structural basis of contraction

- 5.1 Muscle: Types, their gross structure
 - 5.1.1 Hierarchy and skeletal muscle organization (vertebrates)
 - 5.1.2 Myofibrils: Ultra- structure
 - 5.1.3 Chemical composition of myofibril
 - 5.1.4 Muscle contraction-striated muscles
- 5.2. Sliding, filament theory and cross bridge activity
 - 5.2.1 Contraction cycle
 - 5.2.2 Excitation- contraction coupling
 - 5.2.3 Cross-bridge attachment and muscle contraction
 - 5.2.4 Energy cycle, role of ATP and phosphagen
- 5.3 Myasthenia gravis

NOTE FOR PAPER SETTING

Examination Theory	Syllabus to be covered in examination	Time allowed for Exam.	% weightage (Marks)
Minor Test I	Upto 20%	1 Hr.	20
Minor Test II	21% to 40%	1 Hr.	20
Major Test	41% to 100%	2Hrs. & 30 Mins.	60



GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)

Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

Major Test will have two sections A & B.

- **SECTION 'A'** shall comprise of 5 multiple choice questions of 1 mark each and 5 short answer type questions of 2 marks each. (Total 15 marks)
- **SECTION 'B'** shall comprise of 6 questions, two questions from each unit from the remaining three units. Each question carries 15 marks. Students will attempt three questions selecting one question from each unit. Total (45 marks)

Syllabus for Practicals of Animal Physiology

Credits-02

1. Qualitative Analysis of Carbohydrates (reducing & non-reducing sugars) – Benedicts Test, Molich's Test, Fehleings Test, Iodine Test.
2. Qualitative Analysis of Proteins – biuret Test, Xanthoprotein Test, Milon's Test, Ninhydrin Test.
3. Action of digestive enzymes on their respective substrates
4. Liver enzymes assessment (Biochemical analyzer)
5. Observation of Respiration in Bird egg.
6. Spirometry study
7. Formations of Peripheral Blood Smear.
 - a. Enumeration of Total leucocyte count in a given blood sample.
 - b. Enumeration of DLC in a given blood sample.
8. Estimation of Hemoglobin content in a given blood sample.
9. Study of Blood groups (ABO)
10. Observation of Bleeding time and clotting time in human Blood sample.
11. Permanent slide study of Glands associated with digestion, slides of endocrine glands, Kidneys, Brian, Spinal cord etc.
12. Use of sphygmomanometer and measurement of Blood Pressure.
13. Study of E.C.G

Books Recommended

1. Dennis, W. Wood (1970). Principles of Animal Physiology. Amold, Publ. Ltd., London.
2. Malcolin & Gorden. (1977). Animal Physiology: Principles and Adaptation. Mecmillan Publ. Co. New York.
3. Nagabhushnam. (1993), Textbook of Animal Physiology. Oxford & IBH Publ. Co. Pvt. Ltd.
4. Louw. (1993). Physiological Animal Ecology. Langman House, Burnt Mill, Harlow, England.
5. Randall, Burggren and French. (2000). Eckert Animal Physiology Mechanisms and Adaptations. W.H.Freeman and Co. New York.
6. Guyton and Hall. (2013). Textbook of Medical Physiology.
7. K. Sembulingam and Prema Sembulingam. (2016). Essentials of Medical Physiology, 7th edition.

GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)



Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

- Course No. PSZOTC-302
- Course Title: Fundamentals of Biochemistry
- CREDITS: 4
- MAXIMUM MARKS : 100
 - Minor Test I : 20
 - Minor Test II : 20
 - Major Test : 60

Syllabus for the examination to be held in December 2021, December 2022 & December 2023.

Objectives: The course has been designed to expose the students of Zoology to modern functional approach with prime object to understand the biochemical basis explaining the basic functioning of various body mechanisms. The attempt is to arrive at an approach that would necessarily involve biochemistry and help to solve mysteries of cellular activities.

Learning Outcomes: The learning outcomes that a student should be able to demonstrate on completion of the semester shall involve a level of understanding of the Biochemistry subject and its sub-areas.

- The programme learning outcomes shall include academic competence, disciplinary knowledge and understanding of biochemistry, structure and function of biological molecules and explain biological mechanisms, such as the processes and control of bioenergetics and metabolism.
- The student is also expected to attain basic professional skills pertaining to biochemical analysis and carrying out clinical diagnostic tests.

UNIT I - Proteins: Structure, Function & Metabolism (13h)

- 1.1 General features and classification
 - 1.1.1 General Features
 - 1.1.2 Classification
- 1.2 Levels of organization
 - 1.2.1 Primary
 - 1.2.2 Secondary
 - 1.2.3 Tertiary
 - 1.2.4 Quaternary
 - 1.2.5 Globular & Fibrous proteins
- 1.3 Protein metabolism
 - 1.3.1 Catabolism of Amino Acid Nitrogen.
 - 1.3.2 Transamination & Deamination.
 - 1.3.3. Formation of Ammonia, its transport and effects of its retention.
 - 1.3.4 Biosynthesis of Urea, Uric Acid & Creatinine.
- 1.4. Denaturation.

UNIT II- Enzymes: Structure & Function (13h)

- 2.1 General properties and classification.
- 2.2 Coenzymes: Structure, function and types.
- 2.3 Kinetic properties of enzymes: Michaelis–Menten kinetics
- 2.4 Mechanism of enzyme activity.



GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)

Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

- 2.5 Inhibition of enzyme activity.
 - 2.5.1 Irreversible inhibition.
 - 2.5.2 Reversible inhibition.
 - 2.5.2.1 Competitive
 - 2.5.2.2 Non-competitive
 - 2.5.2.3 Uncompetitive
- 2.7 Feedback inhibition: Allosteric site – a concept, Allosteric inhibition

UNIT III- Carbohydrates: Structure and Function

- 3.1 General features and classification.
- 3.2 Isomerism in Glucose
 - 3.2.1 Optical isomerism
 - 3.2.2 Ring Structure
 - 3.2.3 Anomers and Epimers
 - 3.2.4 Aldose & Ketose Isomerism
- 3.3 Hexosamines, Glycoproteins and Glycophorins: Occurrence and Functions

UNIT IV- Lipids: Structure & Function (12h)

- 4.1 Concept and classification.
- 4.2 Nomenclature and forms of fatty acids
- 4.3 Simple lipids : Triacylglycerols, waxes
- 4.4 Complex Lipids : Phospholipids, Glycolipids
- 4.5 Derived Lipids : Steroids, Lipoprotein, Prostaglandins
- 4.6 Lipid precursors: Overview

UNIT V- Metabolism of Carbohydrates & Lipids (13h)

- 5.1 Introduction to bioenergetics
- 5.2 Steps of cellular respiration
 - 5.2.1 Glycolysis
 - 5.2.2 Pyruvate Oxidation
 - 5.2.3 Citric Acid Cycle
 - 5.2.4 Oxidative phosphorylation: Electron transport chain & Chemiosmosis
- 5.1 Fermentation and Lactic acid metabolism
- 5.2 Glycogenesis, Glycogenolysis & Gluconeogenesis
- 5.3 Fatty acid oxidation
- 5.4 Biosynthesis of saturated fatty acids.
- 5.5 Hormonal control of Adipose tissue metabolism

Note for Paper Setting

Examination Theory	Syllabus to be covered in examination	Time allotted for Exam	% weightage (marks)
Minor Test I	upto 20%	1 Hr.	20
Minor Test II	21% to 40%	1 Hr.	20
Major Test	41% to 100%	2Hrs.& 30 mins.	60

- i. Major test will have two sections (A & B)
- ii. Section A is compulsory comprising of 10 questions of 1.5 marks each and be spread

GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)



Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

over entire syllabus

- iii. Section B comprises of 6 questions (2 from each unit) from the remaining 3 units and candidate has to attempt one question from each unit (15 marks each).

Syllabus for Practicals of Fundamentals of Biochemistry

Credits-02

1. To understand the Principle of Photoplethysmography (PPG).
2. To measure metabolites present in biological samples such as blood or urine using a biochemistry analyzer.
3. To prepare temporary mounts of hemin and hemochromogen crystals.
4. To study the principle & procedure of "Total Leucocyte Count" using Hemocytometer.
5. Demonstration of tests for qualitative analysis of carbohydrates:
 - Molisch's Test
 - Fehling's Test
 - Barfoed's Test
 - Seliwanoff's Test
 - Bial's Test
 - Benedict's test
 - Tollen's test
6. To determine the Iodine Number of Lipids.
7. To determine the Saponification Number of Fats.
8. Demonstration of tests for detection of proteins:
 - Biuret test
 - Xanthoproteic test
 - Ninhydrin test

Books Recommended:

1. Geogrey L.Zubay, William w. Parson, Dennis E. Vance.(1995). Principles of Biochemistry.
2. R.I. Gumpert, Frank, H. Deis, Nancy Counts Gerber & Rager. W.H. Freeman Co. N.Y. (2002). Biochemistry 5th Ed.
3. Horton Moran, Scrimgeour Perry Rawn.(2006). Principles of Biochemistry : Pearson International Edition. Fourth Edition.
4. Donald Voet, Judith, G. Voet, Wiley Plus Charlotte, W. Pratt. (2008). Principles of Biochemistry
5. Murray, Bender, Botham, Kennelly Rodwell,(2009). Harper's Illustrated Biochemistry, Mc. Graw Hill Publ. House.
6. Lehninger, Michael M. cox and David L. Nelson. W.H. Freeman & Co. N.Y. (2010). Principles of Biochemistry
7. Hannah Sulochana, (2010). Principles of Biochemistry. 8.Thomas M. Devlin. (2011).
8. Text book of Biochemistry,7th Edition. John, L. Tymoczko, Jeremy M, Berg & Lubert Stryer (2013).
9. Biochemistry, 2nd Ed. 10.Jeremy M.Berg, John L. Tymocz Ko and Lubert storer. (2013). Biochemistry 7th Edition.
10. B.D. Hames. Instant Notes in Biochemistry. Bios Pub. UK.
11. Metzler D.E. and Metzler C.M. , Biochemistry, Wiley – Liss.
12. Devlin T.M. , Text book of Biochemistry , Willey-Liss.

GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)



Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

- **Course No. PSZOTC -303**
- **Title: Biosystematics, Taxonomy & Evolution**
- **Course credits: 4**
- **Maximum marks : 100 marks**
 - **Minor Test I : 20 marks**
 - **Minor Test II : 20 marks**
 - **Major Test : 60 marks**

Course Learning Objectives:

The course is designed to make students aware not only of the great diversity which is being displayed by animals around us but also to prepare them theoretically and practically to study and arrange the Bio-diversity in a scientific and natural manner. The theoretical background of systematics and taxonomy, thus, will go a long way in classifying the organisms based on their evolutionary history and establishing their phylogeny on the totality of parameters from all fields of study. Besides this, the course is also designed to convey the students, the knowledge and principles of evolution. As the syllabus deals with evolutionary thoughts in biology also, this will help the learners comprehend how in nature the variations are developed and subsequently lead to the formation of new taxa.

Course Learning Outcomes:

On completion of the course, the students will be able to:

- Understand the historical development of systematic biology from the 18th century to the present time.
- Comprehend the basic concepts of animal taxonomy and zoological nomenclature.
- Identify and classify different animal species following the ICZN.
- Describe the various theories of evolution.
- Describe different modes of speciation, role of isolating mechanisms in speciation.
- Write down the chemical basis of the origin of life and experiments for supporting this idea.
- Understand the phenomenon of adaptive radiation in different groups of animals.

Theory

Unit-I Basic concept of Biosystematics and Animal Taxonomy

- 1.1 History and importance of application of biosystematics in Biology
- 1.2 Trends in taxonomy: Chemotaxonomy, cytotaxonomy and molecular taxonomy
- 1.3 Macro-taxonomy and its three schools; Phenetics, cladistics and phylogenetics
- 1.4 Role of Biosystematics in conservation programmes
- 1.5 Types of classification: artificial and natural
- 1.6 Species concepts: Typological, Nominalistic, Biological and Evolutionary species concept
- 1.7 Species Categories: Variety, Sub & super species, Sibling species and identical forms

Unit-II Essentials of Taxonomy and Biological Nomenclature

- 2.1 Taxonomic collections, preservation, curation
- 2.2 Methods of identification and problems encountered during the process
- 2.3 Taxonomic keys, different types of keys, their merits and demerits
- 2.4 Process of typification and different Zoological types
- 2.5 Binomial system of classification, author citation, criteria for publication, types of names, principle of priority and its limitations, taxonomic revisions
- 2.6 International code of Zoological Nomenclature (ICZN) and its operative principles



GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)

Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

Unit-III Concepts and Theories of organic evolution

- 3.1 Concepts of evolution (Convergent and Divergent evolution)
- 3.2 Dentition in mammals
- 3.3 Darwinism and Natural selection; Neo Darwinism
- 3.4 Aquatic and flying adaptations in mammals
- 3.5 Theories of sexual selection
- 3.6 The Shifting Balance theory of evolution

Unit-IV Major events in the evolution of life on the earth

- 4.1 History of life on earth
- 4.2 Adaptive radiations
- 4.3 The Mutation theory of Evolution
- 4.4 Isolating mechanisms
- 4.5 Anagenesis and Cladogenesis
- 4.6 Speciation: Origin and mode of speciation (Allopatric, Parapatric, Peripatric and Sympatric)

Unit-V Evidences of organic evolution

- 5.1 Molecular Drive: A cohesive mode of species evolution
- 5.2.1 Neutral Theory of Molecular Evolution
- 5.2 Paleontological evidences: Formation of fossils and their types
- 5.3 Connecting links and Zoo-geography
- 5.4 Hardy-Weinberg Equilibrium and destabilizing forces
- 5.5 Evolution of Man
- 5.6 Evolution of Horse

Note for Paper Setting:

Examination Theory	Syllabus to be covered in examination	Time allotted for Exam	% weightage (marks)
Minor Test I	upto 20%	1 Hr.	20
Minor Test II	21% to 40%	1 Hr.	20
Major Test	41% to 100%	2Hrs.& 30 mins.	60

- Major test will have two sections (A & B).
- Section A is compulsory comprising of five (5) multiple choice questions of 1 mark each covering the entire syllabus and 5 short answer type questions of 2 marks each spread over the entire syllabus. (Sec A = 15 marks).
- Section B comprises of 6 questions of 15 marks, each from remaining three units and the candidate has to attempt 1 question from each unit. (Sec B = 3×15 = 15 marks)

Teaching and Learning Process:

Lectures using blackboard and power-point presentations will be delivered by the teachers and the queries of students will be addressed after they have revised the topic. Concepts can be clarified by giving assignments, e.g., collection, identification and classification of local animal fauna (insects etc), on the basis of their taxonomic characters, preparation of charts on the Evolutionary Time Scale, Adaptive radiation in different groups of animals, organising trips to some biodiversity rich area/ Museum etc. As a part of peer learning, regular group discussions will be held amongst the students to enhance their knowledge. In order to develop the scientific temperament of the students

GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)



Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

and to polish their communication skills, power point presentations, paper presentations and debate competitions shall be organized on various themes as prescribed in the syllabi, while focussing on the latest developments in them. Lectures of the researchers can be organised to update the students about the latest developments in this field so that they can make a career in this highly versatile field of Biological Sciences.

Assessment Methods:

The students can be assessed by the following methods for proper understanding of the subject.

- Assigning problem solving assignments.
- Evaluation of different topics through power point presentations.
- Holding debates and seminars for assessing the understanding of the subject.
- Conducting quiz competitions for assessing grasping of the topics.

Online tools and web resources:

- Google search
- http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/botany/15_plant_systematics-iii/biosystematics/et/5905_et_21-biosystematics-et.pdf
- <https://www.britannica.com/science/taxonomy>
- [https://en.wikipedia.org/wiki/Taxonomy_\(biology\)](https://en.wikipedia.org/wiki/Taxonomy_(biology))
- https://en.wikipedia.org/wiki/Evolutionary_biology
- <https://www.yourarticlelibrary.com/evolution/concept-of-evolution-notes-on-the-modern-concept-of-evolution/12443>

Books Recommended:

1. Mayer, E. (1982). The growth of Biological thought. The Pulknapp Press of Harvard University, Massachusetts.
2. E. Mayer (1983). Principles of animal systematics. Tat McGraw Pub.
3. Jha, A.P. (1983). Genes and Evolution. John Publication, New Delhi
4. Merrel, D.J. (1993). Evolution and genetics, Holt, Rinchart and Winston, Inc.
5. E.O. Wilson(1999). The diversity of life W.W. Northern & Co.
6. Strickburger, N.W. (2000). Evolution, Jones and Bartett Publishers, Boston London.
7. Dobzhansky, (2005). The Genetics and Origin of Species. Columbia University press
8. Dobzhansky, Th. F.J.Ayala, I.L. Stebbins and J.M. valentine.(2005). Evolution. Surjeet Publication, Delhi.
9. King, M. (2009). Species Evolution-The role of chromosomal Change. The Cambridge University Press, Cambridge.
10. Pellens Roseli and Grand Colas (2016) Biodiversity conservation and phylogenetic systematics. Springer publication.



GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)

Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

Practical exercises for Biosystematics, Taxonomy & Evolution - Credits: 2

1. To study the tools and techniques involved in the museum preservation of specimens.
2. To study the common household insects and list their taxonomic characters.
3. To use the taxonomic keys for identification of the fish of the region, representing different families.
4. To prepare the identification keys for selected specimens of invertebrates (Insects) and vertebrates (Snakes and Birds).
5. To study the adaptive characters of various invertebrates and vertebrates in different habitats.
6. To study the fossil evidences (*Archaeopteryx*) of evolution from models/pictures.
7. To study the ancestry of man from the models/chart.
8. To study the phylogeny of horse from the model/chart.
9. To prepare a chart on the Geological Time Scale with special reference to the dominant species of each division.
10. To study the phenomenon of homology and analogy from the suitable specimens/pictures.
11. To demonstrate the phenomenon of adaptive radiation as exemplified by the Darwin's finches, their origin and ancestry.
12. To conduct the zoogeographical study through maps/charts/photographs.
13. To visit a local animal park/zoo/ geological museum to identify and study the captive/available fauna and prepare a report of the same.

Note: There will be one practical paper of 50 marks (comprising Lab Course II; based on Course No. 3023 and 303). 50% (25 marks) shall be reserved for internal assessment including 20% marks (5 marks) for attendance, 20% (5 marks) for viva and 60% (15 marks i.e., 7 marks for internal assessment and 8 marks for day-to-day performance). In case of the regular students, internal assessment received from the college will be added to the marks obtained by them in the final examination (Major test) and in case of private candidates, the internal assessment marks shall be added proportionately to the marks obtained by them in the major examination in accordance with the statutes/regulations.

GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU (AN AUTONOMOUS COLLEGE)



Syllabus and Course of Study in Zoology – M.SC. Semester-III For examinations to be held in 2021-22, 2022-23, 2023-24

- **Course No.: PSZOTC-304**
- **Course Title: Anthropology**
- **Credits - 4**
- **M.M.: 100**
 - **Minor-1: 20 marks**
 - **Minor-2: 20 marks**
 - **Major Test: 60 marks**

Course Learning Objective:

Anthropology is the holistic science of mankind. It is an interdisciplinary approach which deals with infinite curiosity about human beings, their existence and activity. Biological Anthropology is a branch of science that deals with the human evolution, variation and adaptations to different environmental conditions whereas social anthropology studies the ways in which people live in different social and cultural settings across the globe. This course is designed to teach the students basics and fundamentals, branches and scope of Anthropology. It also attempts to classify biological and racial diversity in human species. This course aims to provide knowledge to students about primate and human evolution through fossils and demography. This course also provide knowledge to students about the various social institutions namely marriage, family, and kinship, concept of tribe, culture and society and ethnography method as this is the main focus for social anthropologists.

Course Learning Outcome:

After the completion of course, students will be able

- To understand about the discipline Anthropology, its branches, scope and relationship with other disciplines.
- This course also sharpens the skills of the students so that they can explain biological diversity observed in human species.
- Provides better understanding about the social relations and culture of our society
- Familiar with the variation, distribution and characteristics of primates and early hominids
- Able to understand about the various institutions i.e. marriage, family and kinship
- Provides knowledge about the religion and different theories associated with it.

Unit-I Introduction to Anthropology (12h)

- 1.1 Definition, Nature, scope of Anthropology
- 1.2 Branches of Anthropology with special reference to Biological Anthropology
 - 1.2.1 Biological Anthropology
 - 1.2.2 Cultural anthropology
 - 1.2.3 Lingual Anthropology
 - 1.2.4 Archaeological Anthropology
 - 1.2.5 Relationship of Anthropology with other disciplines

**GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU
(AN AUTONOMOUS COLLEGE)**



**Syllabus and Course of Study in Zoology – M.SC. Semester-III
For examinations to be held in 2021-22, 2022-23, 2023-24**

UNIT- II Introduction to Social Anthropology (13h)

- 2.1 Introduction of Social and cultural Anthropology
- 2.2 Subdivisions of Social-cultural Anthropology
- 2.3 Ethnology and Ethnography
- 2.4 Concept of Society and Culture: Meaning, Definitions and characteristics.
- 2.5 Tribe: Definition, characteristics, classification, tribal problems and their welfare measures.

UNIT -III Evolution of man (12h)

- 3.1 Major primate taxa
- 3.1.1 Classification of living primates
- 3.2 Phylogenetic status, characteristics and distribution of the following: Propliopithecus, Australopithecus, Paranthropus, Homo erectus, Homo sapiens, Java man, Peking man, Neanderthal man, Rhodesian man.
- 3.3 Relationship of man with Anthropoid ape
- 3.4 Evolutionary changes in Primates with special references to skull and limbs.

UNIT- IV Human Variations (13h)

- 4.1 Human races and racial classification
- 4.1.1. Skin colour
- 4.1.2 Hair stature
- 4.2 Eye colour
- 4.3 UNESCO statement on Race
- 4.4 Basic concept of population structure
 - 4.4.1 Age and sex composition
 - 4.4.2 Natality, mortality and morbidity
 - 4.4.3 Fecundity and fertility
- 4.5 Dermatoglyphics

UNIT- V Human Health (13h)

- 5.1 Family: forms and functions, universality of family, typological and processual approaches to the study of family
- 5.2 Marriage: The problem of universal definition of marriage, forms, functions and types of marriage
- 5.3 Kinship: Nature, meaning, definition, types, functions and rules of descent
- 5.4 Religion: Definition, explanatory and functional theories.

**GOVT. COLLEGE FOR WOMEN, PARADE GROUND JAMMU
(AN AUTONOMOUS COLLEGE)**



**Syllabus and Course of Study in Zoology – M.SC. Semester-III
For examinations to be held in 2021-22, 2022-23, 2023-24**

Note for Paper Setting

Examination Theory	Syllabus to be covered in examination	Time allotted for Exam	% weightage (marks)
Minor Test I	Upto 20%	1 Hr.	20
Minor Test II	21% to 40%	1 Hr.	20
Major Test	41% to 100%	2 Hrs 30 Mins	60

- Major Test shall comprise of two sections A&B.
- Section A shall comprise of five (5) multiple choice question of 1 mark each covering the entire syllabus and 5 short answer questions of 2 marks each from the entire syllabus. (A Sec. =15 marks)
- Section B comprises of 6 questions of 15 marks each from remaining 3 units and candidate has to attempt one question from each unit. (3 x 15=45)

Teaching and Learning Process:

The teaching learning process will involve lecture, classroom exercises, project based learning, PowerPoint presentations and group discussions within the class.

Assessment Methods:

Student's knowledge will be assessed by using time-constraint examination and internal assessment through classroom exams, classroom presentation and assignments.

Recommended Books

1. Ember, E.R., M. Ember & P.N. Peregrine. (1963). Anthropology. Prentice Hall, India Pvt. Ltd.
2. Brace, C.L. and Montagu, M.F.A (1977) Human evolution; A Introduction to biological Anthropology
3. Beals, R & Hoijer.(1966) An Introduction to Anthropology
4. Victor Nerriou (1982). Physical Anthropology and Archaeology
5. Russell, L. Coochon and Fleagle John (1985). Primate Evolution and Human Origin.
6. Brace, C.L.(1989). Stages of Human Evolution
7. Larsen, C.S. (2010). A Companion to Biological Anthropology. 2nd Ed. Wiley Blackwell
8. Wood, B. (2011). Encyclopedia of Human Evolution. Wiley Blackwell
9. Majumdar, D.N. and T.N. Madan (1956). An introduction to social anthropology.
10. Das, B.M. (2013), Outlive of Physical Anthropology
11. Stanford, Allen and Anton (2018). Biological Anthropology. Pearson Education.
12. Beattie J. (1964). Other Cultures. London: Cohen & West Limited.
13. Bernard H.R. (1940). Research Methods in Cultural Anthropology. Newbury Park: Sage Publications.
14. Delaney C. (2004). 'Orientation and disorientation' In Investigating Culture: An Experiential Introduction to Anthropology. Wiley-Blackwell.
15. Ember C. R. et al. (2011). Anthropology. New Delhi: Pearson