Shree Ram Singh Dhoni Govt. Degree College Jainti (Almora)

Teaching Plan (Semester Mode), Dept. Of Zoology (B.Sc.)

Year	**Semester**	**Paper code**	**Paper title**	**No. of lectures**		**Max. marks**	
				Theory	**Practical**	**Theory**	**Practical**
1st	1st	ZOO101T	Animal Physiology and Biochemistry	60	60	100	100

Program Outcome –1. The programme in Zoology aims to equip students with recent advances in Zoology from organismic to reductionist biology. It also aims to empower students to understand the challenges of society and the country that falls into the realms of Zoology, such as Aquaculture, Reproductive health, Behavior and Biological time keeping, Cancer Biology, Microbiome and their roles in health and diseases, Bioremediation of pollutants and pesticides, etc. It also offers students to a series of elective courses so that they can choose to specialize in the specific area of their interests in Zoology. It will enhance the basic knowledge about the different systems of an organism and the clinical study of biomolecules.

Program Specific Outcomes:- 1. To provide Knowledge of various animals from primitive to highly evolved forms and its complexity. 2. To foster curiosity in the students for Zoology & understand potential of various branches of Zoology. 3. To equip students with laboratory skills as well as field based studies to become an successful enterpreuner. 4. To highlight biodiversity and its need of conservation. 5. To make aware about ways of conservation and sustainability. 6. To inculcate knowledge and make successful career in zoology. 7. To inculcate research attitude and aptitude among students. 8. To conduct basic and applied research which has societal and environmental value.

Paper- 1st

Topics	No. of Lectures
Animal Physiology: Nutrition: Food constituents, intracellular and extracellular digestion, Digestion and absorption of carbohydrate, fat and protein.	8
Respiration: Pulmonary ventilation, respiratory pigments, gaseous transport and control of respiration. With reference to dissociation of oxyhaemoglobin.	9
Excretion: Concept of ammonotelic, ureotelic and guanotelic animals, urine formation in mammals.	8

Blood vascular system: Haemopoiesis, composition and functions of blood, blood coagulation. A brief account of immunity. Types of heart, origin and conduction of heart beat. Cardiac Cycle	9
Nervous system: Types of Neurons Resting and action potential of nerves, synapse and transmission of nerve impulse. Neurotransmitter	8
Muscular system: Types of Muscles molecular and chemical basic of Muscle contraction and its Mechanism. A brief idea of tetanus and fatigue.	8
Biochemistry: Introduction to biological molecules: Proteins, Amino acids, Carbohydrates and Lipids- their structure, classification and significance. Metabolism of Carbohydrates. Enzymes and Vitamins. (glycolyisis, Krebs cycle, gluconeogenesis , glyscogenesis glyogenolysis) Mechanism of Enzyme Action, Kinetics , Inhibition & Regulation Vitamins, Types & source, deficiencies.	10

Practical-

Topics	No. of Lectures
(i) Preparation of haemin crystals from human blood (ii) Determination of clotting and bleeding time (iii) Counting of RBCs in human blood (iv) Counting of WBCs in human blood (v) Determination of haemoglobin percentage in human blood (vi) Qualitative identification of carbohydrate, protein and lipoid. (vii) Analysis of urine for identification of sugar, albumin, ketone bodies , etc. (viii) Study of the action of salivary amylase on starch.	60

Books Suggested-

1- Ganong: Review of Medical Physiology, Lang Medical Publ.
2- Guyton and Hall; Textbook of Medical Physiology WB Saunders.
3- Keel et al: Sampson Wright's Applied Physiology, Oxford Press.
4- C.C. Chatterjee: Human Physiology.
5- Nielson: Animal Physiology, Cambridge.
6- Jain A.K.: Textbook of Physiology, Avical Publishing Company.
7- Conn And Stumpf: Outlines of Biochemistry, John Wiley.
8- Pandey B.N: Zoology Series- Biochemistry, Physiology, Endocrinology, Tata McGraw Hill Edu Pvt Ltd, New Delhi.