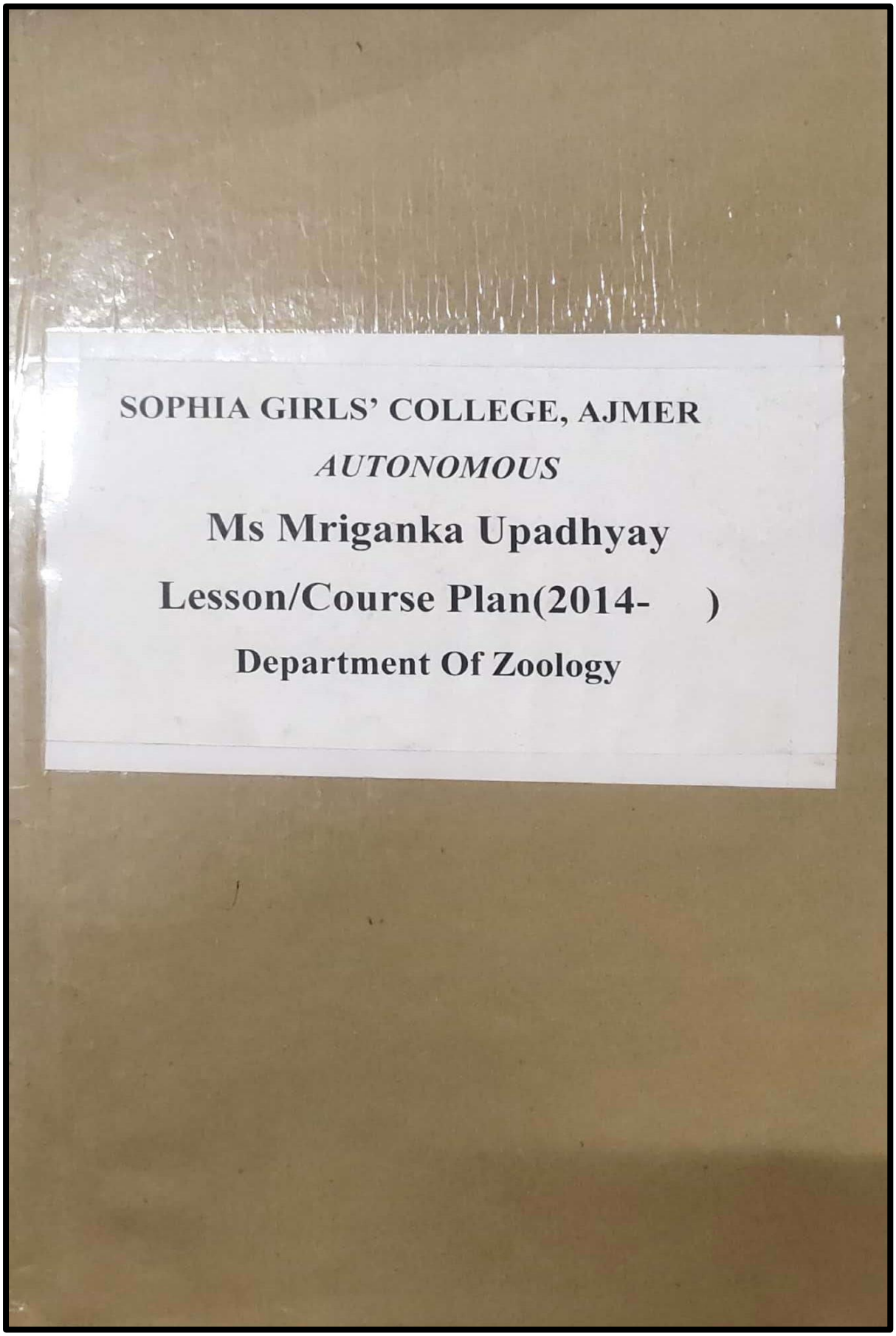
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AUTONOMOUS
Ms Mriganka Upadhyay
Lesson/Course Plan(2014-)
Department Of Zoology

TEACHING PLAN
2018-19

B.Sc. (Zoology) (Semester –III)

PAPER : 302 Microbiology & Biotechnology

Month	Unit and Topics Covered	Other activities
July	**Unit – II** **Biotechnology** **Recombinant DNA** technologies and its application: Elementary idea **Vectors** for gene transfer (plasmids and phages). Basic concepts of cell and tissue culture, **Hybridoma** technology **Monoclonal antibodies** and their applications.	Group discussion Open book test
August	**Unit - III** **Transgenic animals** and their uses in biotechnology. Brief account of **cloning**; (i) Nuclear transfer techniques (ii) Cloning, mechanism and applications.	Quiz Assignment
September	**Food and dairy microbiology** (outline idea only): Fermented food production: dairy products. **Bacteria of medical importance: Brief introductio:**TetanusDiarrhoea Tuberculosis Streptococcal pharyngitisGonorrhoea, Botulism **AIDS** The causative agents Transmission, treatment and prevention	Test
October		**CIA**

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	Unit - I **TheProkaryota(Bacteria)Structural organization :** Size, shapes and patterns Structural organization Slime layer (capsule), cell envelopes cytoplasmic membrane (inner membrane) cell wall (outer membrane) of Gram negative and Gram positive bacteria, mesosomes, cytoplasmic organization cell projections, flagella and pili	Power Point Presentations Mock test
November	. **Genetic material of bacteria**.Chromosome Plasmids replication of bacterial DNA Reproduction in Bacteria , asexual reproduction: binary fission, budding, endospore formation, exospore and cyst formation, sexual reproduction: conjugation. **END SEMESTER EXAMINATION**	

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B.Sc (Zoology) (Semester –V)

PAPER : 501 Classification, Structure and Special Features of Chordates

Month	Unit and Topics Covered	Other activities
July	**Unit – III** **Reptilia** – Venomous and non-venomous snakes, Poison apparatus / venom gland **Aves** - Flight adaptation, Bird migration **Mammals** - Adaptive radiation, Dentition	Group discussion Quiz
August	**Unit - II** **Pisces** - Scales and fins, Migration, Parental care. **Amphibia** - Parental care Habit, Habitat and Salient features of ***Petromyzon*, Ammocoete larva**	Assignment Project
September	**Unit – II** Habit, habitat, external features and anatomy of ***Branchiostoma*** (excluding development) Salient Features of **Hemichordata** Habit, habitat, external features and anatomy of **Herdmania** (excluding development)	Test
October	**Unit – I** Classification and characters of phylum **Chordata** (excluding extinct forms) up to classes (up to subclass in mammals).	**C I A**
November	Classification continued **END SEMESTER EXAMINATION**	Quiz

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B.Sc (Zoology) (Semester –V)

PAPER : 502 Comparative Anatomy of Chordates

Month	Unit and Topics Covered	Other activities
July	**UNIT II** Heart and aortic arches Respiratory system	Group disussion
August	**Unit - III** Excretory system Reproductive system	Assignment
September	Basic plan of vertebrate endoskeleton. Brain	Project
October	**Unit - I** Comparative study of **Pisces, Amphibians, Reptiles, Aves and Mammals**. (*Scoliodon*, Frog, *Varanus*, Fowl and rabbit Integument including structure and development of placoid scales, feathers and hair. Alimentary canal	**C.I.A** Power Point Presentation Mock test
November	**END SEMESTER EXAMINATION**	

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B.Sc (Zoology) (Semester –II)
PAPER : 202 Developmental Biology

Month	Unit and Topics Covered	Other activities
January	**Unit – I** **Gametogenesis**: Spermatogenesis and Oogenesis Formation of egg and spermVitellogenesis **Fertilization**: Activation of ovum, changes in the organization of the egg cytoplasm.	Quiz Open book test
February Last week of Feb	**Unit – II** **Cleavage**: Definition, types of cleavage, planes and patterns Significance of cleavage, morulation and blastulation. **Gastrulation**: definition, fate maps, morphogenetic cell movements, significance of gastrulation. **Embryonic induction**; primary organizer, differentiation, competence **Regeneration Types**- Morphollaxis and Epimorphic regeneration, regeneration abilities in different animals. Amphibian limb regeneration	Project work C.I.A
March	**Unit – III** **Embryonic adaptations**-elementary idea of cledoic egg. Extra-embryonic membranes in chick. **Placentation in Mammals**: Definition, types, classification on the basis of morphology and histology, functions of placenta Elementary idea about **Xenobiotics**, teratological	Power Point Presentation

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	effects of Xenobiotics. **Stem Cells:** Types and their importance. (Elementary idea).	Mock test
April	**END SEMESTER EXAMINATION**	

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B.Sc (Zoology) (Semester –IV)
PAPER : 402 Biochemistry & Immunology

Month	Unit and Topics Covered	Other activities
January	**Unit II** **Immunology**: Definition, types of immunity, innate and acquired, humoral and cell mediated. **Structure of Antibodies.** Structure of different classes of Antibodies Hinge region, Light chain, heavy chain Proteolytic cleavage of antibody by papain and pepsin. **Unit – III** **Cells and Molecules of the immune system:** Phagocytes, Basophils, Eosinophils, Mast cells, dendritic cells, T cells, B cells, Neutrophils. Interleukins, Interferons, Growth factors.	Group Discussion Project
February Last week of Feb	Antigen – Antibody interactions: Precipitation reaction– Radial immunodiffusion; Agglutination reaction– ELISA **ENZYMES** **Definition and structure of enzyme,** Mechanism of enzyme action, Specificity of enzymes Classifications of **Enzymes** **Factors affecting enzyme activity**: pH, Temperature, Substrate concentration Enzyme substrate *Inhibitors: Types of Inhibitors 'Feedback Inhibition Allosteric Regulation and Inhibition* .	Quiz C.I.A

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March	**Unit – I** **Carbohydrate**: Structure, function and significance. Oxidation of glucose through glycolysis, Krebs cycle and oxidative phosphorylation. **Proteins**: Essential and non-essential amino acids, Structure, function and significance of Protein.	Power Point Presentations
April	. **Lipids**: Basic structure, function and significance. **END SEMESTER EXAMINATION**	

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B.Sc (Zoology) (Semester –IV)
PAPER : 601 Environmental Biology

Month	Unit and Topics Covered	Other activities
January	**UNIT III** **Basic concepts of Eutrophication, bioaccumulation, biomagnifications and biodegradation of pollutants.** Green House Effect, Ozone layer, depletion and Ozone Hole. Global Warming and Acid Rain.	Group discussion Quiz
February Last week of Feb	**Unit – II** **Biogeochemical cycle of O_2, CO_2, H_2O, N, P,** and role of microbes **Habitat ecology-** Characteristics and fauna of fresh water, marine, terrestrial. **Natural resources:** Present status and future needs and its management . .	Assignment Project work **C.I.A**
March	**Unit – I** **Population:** interspecies and intraspecies interactions. **Characteristics of natural communities:** structure, composition, stratification, succession, concept of monoclimax, diclimax, polyclimax, climatic and edaphic climaxes, periodicity, ecotonal communities, ecological indicators. **Ecosystem-** Biotic and abiotic factors, Homeostasis, Food chain, Food web, Trophic	Power Point Presentation Mock test

	levels, Ecological Pyramids, Energy flow and Productivity.	
April	END SEMESTER EXAMINATION	

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