

TEACHING PLAN (Year 2019-20)
Department of Zoology
SBMS COLLEGE, SUALKUCHI

Teaching Technique:

- The classroom transaction of all the papers will be done through lectures, assignments, group discussion, practical demonstration, projects, etc.
- To make the teaching learning process more interactive and interesting ICT enabled classes will also be taken.
- Practical experiments will be done in departmental laboratories under guidance of respective teacher. Necessary instruction will be followed. To develop an understanding quality few experiments will be incorporated outside the laboratory (within college campus)
- To gain practical knowledge, field study, educational excursion, institutional visit etc. will also be planned according to demand of course content.
- At least two class tests will be conducted per semester among the major students.
- For knowledge upliftment, observation of Days of importance, poster presentation competition, photography (Zoology related) competition will also be organized time to time.
- Invited lecture/ popular talk/ workshop/ departmental seminars etc. will also be arranged for boosting the knowledge/ ideas among the students.

NB:

- Sessional Examinations are conducted by the College Examination Cell in the middle part of each semester.
- End Semester Examinations are generally held in Nov- Dec and May- Jun.
- Summer Vacation (generally starts from 1st Jul to 31st Jul)
- Winter Break (generally starts from 1st Jan to 19th Jan)

Odd Semester

CBCS Course Content (Starting Year 2019)

Semester	TDC I Semester	Course	Major
Credit	04	Marks:	60
Paper Name	NON-CHORDATES I: PROTISTS TO PSEUDOCOELOMATES	Paper Code:	ZOO-HC-1016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Protista, Parazoa and Metazoa 19 General characteristics and Classification upto classes Study of Euglena, Amoeba and Paramecium Life cycle and pathogenicity of Plasmodium vivax and Entamoeba histolytica Locomotion and Reproduction in Protista Evolution of symmetry and segmentation of Metazoa	Dr Sikha Rani Kalita	13	Aug	
2	• Porifera 7 General characteristics and Classification upto classes Canal system and spicules in sponges		04	Aug, Sep	
3	• Cnidaria: General characteristics and Classification upto classes Metagenesis in Obelia Polymorphism in Cnidaria Corals and coral reefs		09	Sep, Oct, Nov	
4	• Ctenophora: General characteristics and Evolutionary significance		02	Nov	
5	• Platyhelminthes: General characteristics and Classification up to classes Life cycle and pathogenicity of Fasciola hepatica and Taeniasolium	Dr Kakali Talukdar	06	Aug	
6	• Nematelminthes: General characteristics and Classification up to classes Lifecycle, and pathogenicity of Ascaris lumbricoides and Wuchereri abancrofti Parasitic adaptations in helminthe		06	Sep	

Semester	TDC I Semester	Course	Major
Credit	04	Marks:	20
Paper Name	Practical	Paper No:	ZOO-HC-1016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Study of whole mount of Euglena, Amoeba and Paramecium, Binary fission and Conjugation in Paramecium	Dr Sikha Rani Kalita	02	Aug	
2	• Examination of pond water collected from different places for diversity in protista		07	Sep	
3	• Study of Sycon (T.S. and L.S.), Hyalonema, Euplectella, Spongilla		04	Sep	
4	• Study of Obelia, Physalia, Millepora, Aurelia, Tubipora, Corallium, Alcyonium, Gorgonia, Metridium, Pennatula, Fungia, Meandrina, Madrepora		07	Sep	
5	• One specimen/slide of any ctenophore	Dr Kakali Talukdar	02	Aug	
6	Study of adult Fasciola hepatica, Taenia solium and their life cycles (Slides/micro- photographs)		04	Sep	
7	• Study of adult Ascaris lumbricoides and its life stages (Slides/micro-photographs)		04	Sep	
8	• To submit a Project Report on any related topic on life cycles.	Bandana Deka	Each student will be given to prepare a project report individually on a topic given in the syllabus (within Apr)		

Semester	TDC I Semester	Course	Major
Credit	04	Marks:	60
Paper Name	PRINCIPLES OF ECOLOGY	Paper No:	ZOO-HC-1026

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Introduction to Ecology: History of ecology, Autecology and synecology, Levels of organization, Laws of limiting factors, Study of physical factors	Bandana Deka	05	Aug	
2	• Population: Unitary and Modular populations Unique and group attributes of population: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion Exponential and logistic growth, equation and patterns, r and K strategies Population regulation - density-dependent and independent factors Population interactions, Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition and Predation, functional and numerical responses		12	Aug, Sep	
3	• Community: Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Ecotone and edge effect; Ecological succession with one example Theories pertaining to climax community		08	Oct	
4	• Ecosystem: Types of ecosystems with one example in detail, Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies Nutrient and biogeochemical cycle with one example of Nitrogen cycle Human modified ecosystem	Dr Kakali Talukdar	10	Oct, Nov	
5	• Applied Ecology: Ecology in Wildlife Conservation and Management		04	Nov	

Semester	TDC I Semester	Course	Major
Credit	02	Marks:	20
Paper Name	Practical	Paper No:	ZOO-HC-1026

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided	Bandana Deka	02	Sep	
2	• Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon Weiner diversity index for the same community		04	Sep	
3	• Study of an aquatic ecosystem: Phytoplankton and zooplankton, determination of pH	Dr Sikha Rani Kalita	04	Aug	
	• Measurement of area, temperature, turbidity/penetration of light,	Bandana Deka	04	Nov	
	• Dissolved Oxygen content (Winkler's method).	Dr Kakali Talukdar	04	Nov	
4	• Report on a visit to National Park/Biodiversity Park/Wild life sanctuary	All faculty members will guide and accompany the tour in the month of Oct/Nov			

Semester	TDC I Semester	Course	Major
Credit	04	Marks:	60
Paper Name	ANIMAL DIVERSITY	Paper No:	ZOO-HG/RC-1016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Kingdom Protista: General characters and classification up to classes; Locomotory Organelles and locomotion in Protozoa	Dr Sikha Rani Kalita	03	Aug	
2	• Porifera: General characters and classification up to		03	Aug	

	classes; Canal System in Sycon				
3	• Cnidaria: General characters and classification up to classes; Polymorphism in Hydrozoa			Sep	
4	• Platyhelminthes: General characters and classification up to classes; Life history of Taenia solium	Dr Kakali Talukdar	03	Aug	
5	• Nematelminthes: General characters and classification up to classes; Life history of Ascaris lumbricoides and its parasitic adaptations		04	Aug	
6	• Annelida: General characters and classification up to classes; Metamerism in Annelida		03	Sep,	
7	• Arthropoda: General characters and classification up to classes; Vision in Arthropoda, Metamorphosis in Insects	Bandana Deka	04	Aug,	
8	• Mollusca: General characters and classification up to classes; Torsion in gastropods		03	Sep	
9	• Echinodermata: General characters and classification up to classes; Water-vascular system in Asteroidea		03	Oct	
10	• Protochordates: General features and Phylogeny of Protochordata	Dr Kakali Talukdar	03	Sep	
11	• Agnatha: General features of Agnatha and classification of cyclostomes up to classes		03	Oct	
12	• Pisces: General features and Classification up to orders; Osmoregulation in Fishes	Dr Sikha Rani Kalita	02	Oct	
13	• Amphibia: General features and Classification up to orders; Parental care		02	Nov	
14	• Reptiles: General features and Classification up to orders; Poisonous and non-poisonous snakes, Biting mechanism in snakes		03	Nov, Dec	
15	• Aves: General features and Classification up to orders; Flight adaptations in birds	Bandana Deka	03	Nov	
16	• Mammals: Classification up to orders; Origin of mammals		03	Nov	

Semester	TDC I Semester	Course	Major
Credit	02	Marks:	20
Paper Name	Practical	Paper No:	ZOO-HG/RC-1016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	<ul style="list-style-type: none"> Study of the following specimens: Amoeba, Euglena, Plasmodium, Paramecium, Sycon, Hyalonema, and Euplectella, Obelia, Physalia, Aurelia, Tubipora, Metridium, Taeniasolium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Julus, Periplaneta, Apis, Chiton, Dentalium, Pila, Unio, Loligo, Sepia, Octopus, Pentaceros, Ophiura, Echinus, Cucumaria and Antedon, Balanoglossus, Herdmania, Branchiostoma, Petromyzon, Sphyrna, Pristis, Torpedo, Labeo, Exocoetus, Anguilla, Ichthyophis/Ureotyphlus, Salamandra, Bufo, Hyla, Chelone, Hemidactylus, Chamaeleon, Draco, Vipera, Naja, Crocodylus, Gavialis, Any six common birds from different orders, Sorex, Bat, Funambulus, Loris 	Bandana Deka Dr Sikha Rani Kalita Dr Kakali Talukdar	06 06 04	Sep, Oct, Nov	
2	<ul style="list-style-type: none"> Study of the following permanent slides: T.S. and L.S. of Sycon, Study of life history stages of Taenia, T.S. of Male and female Ascaris 	Dr Kakali Talukdar	06	Oct, Nov	
3	<ul style="list-style-type: none"> Key for Identification of poisonous and non-poisonous snakes 	Dr Sikha Rani Kalita	02	Sep	

Non CBCS Course

Semester	TDC III Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Comparative Anatomy and Histology	Paper No:	M-301

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Integument and its derivatives in vertebrates	Bandana Deka	05	Aug	
1.2	• Comparative anatomy of heart, Aortic arches and succession of kidney in vertebrates		10	Aug	
1.3	• Organs of hearing and balancing in vertebrates		06	Sep	
1.4	• Comparative anatomy of thyroid		05	Sep	
1.5	• Comparative anatomy of respiratory system in vertebrates		7	Oct	
1.6	• Comparative anatomy of brain in vertebrates		7	Nov	
2.1	• Differentiation and organization of cells and maintenance of tissues.	Dr Sikha Rani Kalita	02	Aug	
2.2	• Animal tissues—Types, structure and their functions: Epithelial, Muscular, Connective tissues (cartilage, bone, blood, lymph, areolar, adipose, reticular) and Nervous tissue.		15	Aug, Sep	
2.3	• Basic principles of fixation and staining.		02	Oct	
2.4	• Classification, Composition and Properties of dye.		02	Oct	
2.5	• Use of mordants and metachromatic dyes.		02	Nov	
2.6	• Principle and procedure of histological staining of carbohydrates, amino acids, proteins, lipids and nucleic acids.		03	Nov	

Semester	TDC III Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Cell Biology	Paper No:	M-302

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Diversity of cell size and shape	Dr Kakali Talukdar	01	Aug	
2	• Cell theory		01	Aug	
3	• Structure of prokaryotic and eukaryotic cell		01	Aug	
4	• Physical and chemical properties of protoplasm		02	Aug	
5	• Structure of plasma membrane, its modifications and function		03	Aug	
6	• Chromosome -Structure and function		02	Aug	
7	• Cell division- cell division cycles, Mechanism of cell cycle. • Membrane transport of small molecules and ionic basis of membrane excitability, Intracellular organisation of the cell. • Ultra structure and function of mitochondria, Golgi bodies, Endoplasmic reticulum, ribosome, Lysosome, exo and endocytosis		10	Aug, Sep	
8	• Cellular energy transaction- role of mitochondria and Chloroplast		03	Sep	
9	• Cytoskeleton: structure and function of centriole, microtubule and microfilaments- structure and dynamics. Mitotic apparatus and chromosome movement		03	Sep	
10	• Cilia and flagella- Structure and function		02	Sep	

Semester	TDC III Semester	Course	Major
Credit	04	Marks:	40+10=50
Paper Name	Practical	Paper No:	M-303

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Study of different types of cells (prokaryotic and eukaryotic)	Bandana Deka	04	Aug	
2	• Staining techniques of nucleus and nucleolus	Dr Kakali Talukdar	02	Oct	
3	• Preparation of physiological solution- buffers, fixatives, stains,		04	Oct	
4	• Preparation of histological slides from tissues as liver, lung, stomach, intestine, kidney, pancreas, testis and ovary		08	Nov	
5	• Study of different tissue through Permanent slides	Bandana Deka & Dr Sikha Rani Kalita	04 + 08	Sep	

Semester	TDC III Semester	Course	General
Credit	04	Marks:	40+10=50
Paper Name	Animal Diversity-I (NON-CHORDATES)	Paper No:	E-301

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Introduction to Animal kingdom	Dr Sikha Rani Kalita	01		
2	• Protozoa: General Characters and classification upto orders with examples. • Structure, Nutrition, locomotion and reproduction of <i>Paramecium</i>		06	Aug	
3	• Porifera: General Characters and classification upto orders with examples.		04	Aug	

	<ul style="list-style-type: none"> • Anatomical structure and function with special reference to Canal system in <i>Sycon</i> 				
4	<ul style="list-style-type: none"> • Coelenterata: General Characters and classification upto orders with examples. • Anatomical structure and function of <i>Obelia</i> 		03	Sep	
5	<ul style="list-style-type: none"> • Platyhelminthes: General Characters and classification upto orders with examples. • Structure and life history of Fasciola 	Dr Kakali Talukdar	03	Aug	
6	<ul style="list-style-type: none"> • Aschelminthes: General Characters and classification upto orders with examples. • Anatomical structure and life history of Ascaris. 		03	Aug	
7	<ul style="list-style-type: none"> • Annelida: General Characters and classification upto orders with examples. • Anatomical structure and function of <i>Leech</i> 		03	Sep	
8	<ul style="list-style-type: none"> • ARTHROPODA: General Characters and classification upto orders with examples. • Anatomical structure and appendages of prawn • Mouth parts, life history of mosquito and housefly and their roles as vector 	Bandana Deka	06	Aug	
9	<ul style="list-style-type: none"> • MOLLUSCA: General Characters and classification upto orders with examples. • Anatomical structure and function of pila 		04	Sep	
10	<ul style="list-style-type: none"> • ECHINODERMATA: General Characters and classification upto orders with examples. • Anatomical structure and function of starfish with special reference to Water Vascular System. 		04	Oct, Nov	

Semester	TDC III Semester	Course	General
Credit	04	Marks:	40+10=50
Paper Name	Practical	Paper No:	E-302

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	Dissection- • Nervous system and Digestive system of cockroach	Dr Kakali Talukdar	04	Sep	
	• Urinogenital system of leech	Bandana Deka	02	Oct	
	• Digestive system of Pila	Dr Sikha Rani Kalita	02	Oct	
2	• Slide preparation- Temporary	Dr Kakali Talukdar Dr Sikha Rani Kalita	02+02	Oct	
3	• Slide preparation- Permanent	Dr Sikha Rani Kalita	04	Nov	
4	• Identification of prepared slide	Dr Kakali Talukdar	04	Nov	
5	• Study of Museum Specimen	Bandana Deka	08	Aug, Sep	

Semester	TDC V Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Animal Physiology	Paper No:	M-501

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Nutrition: Nutritional requirements, Digestion and absorption of dietary components (Carbohydrates, fats, proteins, vitamins, and minerals), Co-ordination and control of digestive activity (nervous and hormonal regulation)	Dr Kakali Talukdar	03	Aug	
2	• Respiration: Types of respiration-anaerobic and aerobic, Properties and function of respiratory pigments, Exchange of gases, Breathing, O ₂ dissociation curve, control of		08	Aug	

	breathing				
3	• Body fluids: Type of body fluids, composition and function of different body fluids, haemopoiesis, Buffer system in blood, chloride shift, blood group and transfusion, Blood clotting mechanism	Bandana Deka	09	Aug	
4	• Heart and circulation: Types of heart-myogenic and neurogenic, origin, conduction and regulation of heart beat, cardiac cycle, blood pressure		07	Aug, Sep	
5	• Excretion: Types of nitrogenous wastes- ammonotelic, ureotelic and uricotelic. Physiology of urine formation. Regulation of urine formation	Dr Sikha Rani Kalita	05	Aug	
6	• Nerve physiology: Initiation and conduction of nerve impulse, Synapse and synaptic transmission through myelinated and non- myelinated nerve fibre, Neuromuscular co-ordination		05	Aug	
7	• Muscle protein, chemistry of muscle contraction		02	Aug	
8	• Osmoregulation in vertebrates		02	Aug	

Semester	TDC V Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Biochemistry and bioenergetics	Paper No:	M-502

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Chemical foundation of biology- pH, pK, acids, bases, buffers free energy, isomerisation	Dr Kakali Talukdar	03	Aug	
1.2	• Classification and biological significance of carbohydrate, protein and lipid		03	Aug	
1.3	• Assembly of macromolecular complexes, ribosome chromatin and plasma membrane		03	Aug	

1.4	<ul style="list-style-type: none"> Enzymes nature and classification- Mechanism of enzyme action Enzyme kinetics 	Dr Sikha Rani Kalita	02	Aug	
1.5	<ul style="list-style-type: none"> Ornithine cycle 		01	Aug	
1.6	<ul style="list-style-type: none"> Oxidation and biosynthesis of fatty acids 	Bandana Deka	04	Sep	
2.1	<ul style="list-style-type: none"> First and second laws of thermodynamics 	Dr Kakali Talukdar	02	Aug	
2.2	<ul style="list-style-type: none"> Oxidation- reduction potential with special reference to mitochondrial electron transport system. ATP in metabolism and in free energy production 		03	Aug	
2.3	<ul style="list-style-type: none"> Theories of oxidative phosphorylation 		03	Aug	

Semester	TDC V Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Endocrinology and Immunology	Paper No:	M-503

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	<ul style="list-style-type: none"> Brief account of structural features, historical structure and function of endocrine glands-Pituitary, Thyroid, Pancreas, Adrenal and Gonads 	Bandana Deka	06	Sep	
1.2	<ul style="list-style-type: none"> Hypothalamo-hypophysial axis 		02	Sep	
1.3	<ul style="list-style-type: none"> Classification of hormone 		03	Sep	
1.4	<ul style="list-style-type: none"> Mechanism of hormone action 		03	Oct	
1.5	<ul style="list-style-type: none"> Synthesis of thyroxin 		02	Oct	
1.6	<ul style="list-style-type: none"> Pancreatic hormones and metabolic regulation, physiological action of insulin and glucagon 		03	Oct	
1.7	<ul style="list-style-type: none"> Hormonal control of calcium homeostasis, chemistry and control of secretion of parathormone 	Dr Sikha Rani Kalita	02	Sep	
2.1	<ul style="list-style-type: none"> Basic immunological concept 		01	Sep	

2.2	• Innate and acquired immunity	Dr Kakali Talukdar	02	Sep	
2.3	• Components of immune system		01	Sep	
2.4	• Cell mediated and humoral immune system		01	Sep	
2.5	• Structure and function of antibodies		03	Aug	
2.6	• Antigen antibody interaction		02	Sep	
2.7	• Immunization		02	Sep	
2.8	• Hyper immunity (allergy, immune deficiency, autoimmunity, Basic concept)		02	Sep	

Semester	TDC V Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Biological techniques and Biostatistics	Paper No:	M-504

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Principle and uses of analytical instruments: pH meter, colorimeter, spectrophotometer, ultra centrifuge	Dr Kakali Talukdar	03	Sep	
1.2	• Microscopy- Working principle of light, electron phase contrast and fluorescence microscopy		03	Sep	
1.3	• Separation techniques in biology- elementary knowledge of chromatography and electrophoresis		02	Oct	
1.4	• Microtomy		02	Oct	
1.5	• Cryopreservation of eggs and sperms		01	Nov	
1.6	• Use of radioisotope in biology, Autoradiography		01	Nov	
2.1	• Statistics in Biology	Dr Sikha Rani Kalita	02	Sep	
2.2	• Sampling techniques-sample units and their selection		01	Sep	
2.3	• Correlation and regression analysis- linear		01	Sep	
2.4	• Analysis of variance, t-test		03	Oct	

2.5	• Chi Square test (XY)		02	Oct	
2.6	• Use of computers in biology, computer application- data processing, language		05	Nov	
2.7	• Utility of biostatistics	Bandana Deka	01	Nov	
2.8	• Mean-Arithmetic, Geometric and Harmonic mean. Median and Mode		03	Nov	
2.9	• Standard deviation, standard error of mean		02	Nov	
2.10	• Graphic representation of data- histogram, bar diagram, Pie diagram and O-give		01	Nov	

Semester	TDC V Semester	Course	Major
Credit	04	Marks:	40+10=50
Paper Name	Physiology (Practical)	Paper No:	M-505

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Demonstration of Osmosis	Dr Sikha Rani Kalita	02	Aug	
2	• Effect of isotonic, hypertonic and hypotonic solution, acid and alkali on RBC		02	Sep	
3	• Haemoglobin estimation	Bandana Deka	02	Oct	
4	• Human blood grouping, ABO and Rh factor		02	Sep	
5	• Total count of RBC and WBC		06	Sep	
6	• Differential count of WBC		02	Sep	
7	• Preparation of haemin crystal from blood		02	Oct	
8	• Study of cardiac cycle in frog/rat using Kymograph	Dr Sikha Rani Kalita	02	Sep	
9	• Normal and abnormal constituents of urine (glucose and albumin)	Dr Kakali Talukdar	02	Sep	

Semester	TDC V Semester	Course	Major
Credit	04	Marks:	40+10=50
Paper Name	Biochemistry and Endocrinology (Practical)	Paper No:	M-506

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Biochemical estimation of glucose, total soluble proteins and total lipids.	Dr Kakali Talukdar	02	Sep	
1.2.	• Detection of enzyme activity-salivary amylase, pepsin		02	Oct	
1.3	• Separation of amino acids by paper/thin layer chromatography	Bandana Deka	06	Nov	
1.4	• Estimation of ascorbic acid in lemon	Dr Kakali Talukdar	02	Nov	
1.5	• Detection of presence of vitamin A		02	Nov	
1.6	• Detection of mono, di, and polysaccharides		02	Nov	
2.1	• Dissection and localisation of selected endocrine glands: thyroid, pituitary, pancreas, adrenal, testis, ovary in frog/rat/rabbit	Dr Sikha Rani Kalita	10	Oct, Nov	
2.2	• Histological study of endocrine glands: thyroid, pancreas, adrenal, testis, ovary (through prepared slides)		04	Nov	

Semester	TDC V Semester	Course	General
Credit	08	Marks:	80+20=100
Paper Name	Cell biology, Genetics and Developmental Biology	Paper No:	E-501

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Structure of prokaryotic and eukaryotic cell		01	Aug	

1.2	• Virus- structure and assembly	Dr Kakali Talukdar	01	Aug	
1.3	• Cell Theory		01	Aug	
1.4	• Structure and function of plasma membrane, Membrane transport		03	Aug	
1.5	• Cell reproduction and mitosis		03	Sep	
1.6	• Ultra structure and function of mitochondria, Golgi bodies, Endoplasmic reticulum, and ribosome,		03	Sep	
1.7	• Chromosome -Ultrastructure and organization, Giant Chromosomes- Types and significance		02	Sep	
2.1	• Linkage- its mechanism and significance		Dr Sikha Rani Kalita	01	Aug
2.2	• Crossing over- its types, mechanism, and significance	02		Aug	
2.3	• Sex linkage, Sex linked inheritance	02		Aug	
2.4	• Chromosomal sex determination	01		Aug	
2.5	• Varieties of gene expression-multiple alleles, lethal genes, pleotropic genes, epistasis	03		Sep	
2.6	• Mutation- a) Chromosomal aberration b) Gene mutation, c) Harmful and beneficial effects of mutation	04		Oct, Nov	
3.1	• Gametogenesis: Spermatogenesis, Oogenesis,	Bandana Deka	02	Aug	
3.2	• Fertilization: Sperm-egg interaction, activation of egg, Gaete fusion in Sea urchin		03	Aug	
3.3	• Types of animal eggs.		01	Aug	
3.4	• Concept of Organizer and Induction		02	Sep	
3.5	• Extra embryonic membranes in bird and mammal.		02	Oct	
3.6	• Reproductive cycles in vertebrates		01	Oct	
3.7	• Regeneration in vertebrates and invertebrates		02	Nov	
3.8	• Parthenogenesis.		01	Nov	

Semester	TDC V Semester	Course	General
Credit	08	Marks:	80+20=100
Paper Name	Cell biology, Genetics and Developmental Biology (Practical)	Paper No:	E-502

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Study of different types of cells (prokaryotic and eukaryotic)	Bandana Deka	04	Aug	
2	• Staining techniques of nucleus and nucleolus	Dr Kakali Talukdar	02	Aug	
3	• Study of mitosis in onion root tip/tadpole larve		02	Sep	
4	• Study of meosis in Grasshopper/ <i>Grylotalpa</i>		02	Sep	
5	• Study of different tissue through Permanent slides	Dr Sikha Rani Kalita	04	Oct	
6	• Staining of Barr body from buccal epithelium		02	Nov	
7	• Study of slides of blastula, gastrula, and morula of Amphioxus and Frog/Toad	Bandana Deka	02	Sep	
8	• Study of specific stages of development of chick embryo through prepared slides		02	Oct	

Even Semester

CBCS Course Content

Semester	TDC II Semester	Course	Major
Credit	04	Marks:	60
Paper Name	NON-CHORDATES II: COELOMATES	Paper Code:	ZOO-HC-2016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Introduction to Coelomates Evolution of coelom and metamerism	Dr Sikha Rani Kalita	02	Feb	
2	• General characteristics and Classification upto classes Excretion in Annelida		03	Feb	
3	• Arthropoda General characteristics and Classification upto classes Vision and Respiration in Arthropoda Metamorphosis in Insects Social life in bees and termites	Bandana Deka	07	Feb, Mar	
4	• Onychophora General characteristics and Evolutionary significance	Dr Sikha Rani Kalita	03	Mar, Apr	
5	• Mollusca General characteristics and Classification upto classes Respiration in Mollusca Torsion and detorsion in Gastropoda Pearl formation in bivalves Evolutionary significance of trochophore larva	Bandana Deka	06	Mar, Apr	
6	• Echinodermata General characteristics and Classification upto classes Water-vascular system in Asteroidea Larval forms in Echinodermata Affinities with Chordates	Dr Sikha Rani Kalita	10	Feb, Mar, Apr	

Semester	TDC II Semester	Course	Major
Credit	04	Marks:	20
Paper Name	Practical	Paper No:	ZOO-HC-2016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	<ul style="list-style-type: none"> • Study of following specimens: Annelids-Aphrodite, Nereis, Heteronereis, Sabella, Serpula, Chaetopterus, Pheretima, Hirudinaria 2 	Dr Sikha Rani Kalita	02	Apr	
	<ul style="list-style-type: none"> • Arthropods - Limulus, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer, Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta, termites and honey bees Onychophora - Peripatus 	Bandana Deka	04	Mar	
	<ul style="list-style-type: none"> • Molluscs - Chiton, Dentalium, Pila, Doris, Helix, Unio, Ostrea, Pinctada, Sepia, Octopus, Nautilus 		02	Apr	
	<ul style="list-style-type: none"> • Echinodermates - Pentaceros/Asterias, Ophiura, Clypeaster, Echinus, Cucumaria and Antedon 		02	Mar	
2	<ul style="list-style-type: none"> • Study of digestive system septal nephridia and pharyngeal nephridia of earthworm 	Dr Sikha Rani Kalita	02	Mar	
3	<ul style="list-style-type: none"> • T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm 		02	Mar	
4	<ul style="list-style-type: none"> • Mount of mouth parts and dissection of digestive system and nervous system of Periplaneta 		04		
5	<ul style="list-style-type: none"> • To submit a Project Report on any related topic to larval forms (crustacean, mollusc and echinoderm) 	Bandana Deka	Each student will be given to prepare a project report individually on a topic given in the syllabus (within Apr)		

Semester	TDC II Semester	Course	Major
Credit	04	Marks:	60
Paper Name	CELL BIOLOGY	Paper Code:	ZOO-HC-2026

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Over view of Cells 3 Prokaryotic and Eukaryotic cells, Virus, Viroids, Mycoplasma, Prions	Dr Kakali Talukdar	03	Feb	
2	• Plasma Membrane 7 Various models of plasma membrane structure Transport across membranes: Active and Passive transport, Facilitated transport Cell junctions: Tight junctions, Desmosomes, Gap junctions		04	Feb	
3	• Endomembrane System 10 Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes		04	Feb	
4	• Mitochondria and Peroxisomes 8 Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain, Chemi-osmotic hypothesis Peroxisomes		04	Mar	
5	• Cytoskeleton 8 Structure and Functions: Microtubules, Microfilaments and Intermediate filaments		02	Mar	
6	• Nucleus 12 Structure of Nucleus: Nuclear envelope, Nuclear pore complex, Nucleolus Chromatin: Euchromatin and Heterochromatin and packaging (nucleosome)		04	Apr	
7	• Cell Division Mitosis, Meiosis, Cell cycle and its regulation 8		03	Apr	
8	• Cell Signalling GPCR and Role of second messenger (cAMP)		02	Apr	

Semester	TDC II Semester	Course	Major
Credit	04	Marks:	20
Paper Name	Practical	Paper No:	ZOO-HC-2026

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Preparation of temporary stained squash of onion root tip to study various stages of mitosis	Dr Kakali Talukdar	02	Feb	
2	• Study of various stages of meiosis.		02	Mar	
3	• Preparation of permanent slide to show the presence of Barrbody in human female blood cells/cheek cells.	Dr Sikha Rani Kalita	04	Mar	
4	• Preparation of permanent slide to demonstrate: i DNA by Feulgen reaction ii Mucopolysaccharides by PAS reaction iii Proteins by Mercurio bromophenol blue/Fast Green	Dr Kakali Talukdar	06	Mar, Apr	

Semester	TDC II Semester	Course	Major
Credit	04	Marks:	60
Paper Name	COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES	Paper Code:	ZOO-HG/RC-2016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Integumentary System 4 Derivatives of integument w.r.t. glands and digital tips	Dr Sikha Rani Kalita	02	Feb	
2	• Skeletal System Evolution of visceral arches		02	Feb, Mar	
3	• Digestive System Brief account of alimentary canal and digestive glands		03	Mar	

4	•Respiratory System Brief account of Gills, lungs, air sacs and swim bladder	Bandana Deka	04	Feb,	
5	•Circulatory System Evolution of heart and aortic arches		04	Mar,	
6	•Urinogenital System Succession of kidney, Evolution of urinogenital ducts	Dr Sikha Rani Kalita	03	Apr	
7	•Nervous System Comparative account of brain	Bandana Deka	02	Mar,	
8	•Sense Organs Types of receptors		02	Mar,	
9	•Early Embryonic Development Gametogenesis: Spermatogenesis and oogenesis w.r.t. mammals, vitellogenesis in birds; Fertilization: external (amphibians), internal (mammals), blocks to polyspermy; Early development of frog and humans (structure of mature egg and its membranes, patterns of cleavage, fate map, up to formation of gastrula); types of morphogenetic movements; Fate of germ layers; Neurulation in frog embryo.	Dr Kakali Talukdar	12	Feb, Mar, Apr	
10	•Late Embryonic Development Implantation of embryo in humans, Formation of human placenta and functions, other types of placenta on the basis of histology; Metamorphic events in frog life cycle and its hormonal regulation.	Bandana Deka Dr Sikha Rani Kalita	06 02	Apr Apr	
11	•Control of Development Fundamental processes in development (brief idea) – Gene activation, determination, induction, Differentiation, morphogenesis, intercellular communication, cell movements and cell death	Dr Kakali Talukdar	08	Apr	

Semester	TDC II Semester	Course	Major
Credit	04	Marks:	20
Paper Name	Practical	Paper No:	ZOO-HG/RC-2016

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	<ul style="list-style-type: none"> • Osteology: <ul style="list-style-type: none"> a) Disarticulated skeleton of fowl and rabbit b) Carapace and plastron of turtle/tortoise c) Mammalian skulls: One herbivorous and one carnivorous animal. 	Dr Sikha Rani Kalita	06	Feb, Mar	
2	<ul style="list-style-type: none"> • Frog - Study of developmental stages - whole mounts and sections through permanent slides – cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages. 	Dr Kakali Talukdar	08	Mar	
3	<ul style="list-style-type: none"> • Study of the different types of placenta histological sections through permanent slides or photomicrographs. 	Bandana Deka	02	Mar	
4	<ul style="list-style-type: none"> • Examination of gametes - frog/rat - sperm and ova through permanent slides or photomicrographs. 		02	Apr	

Non CBCS Course Content

Semester	TDC IV Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Developmental Biology	Paper No:	M-401

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Developmental biology- aim and scope	Dr Sikha Rani Kalita	02	Feb	
2	• Gametogenesis: Spermatogenesis, Oogenesis, Vitellogenesis, egg membrane.		03	Feb	
3	• Fertilization: Sperm-egg interaction, biochemical events, post- fertilizations events.		02	Feb	
4	• Parthenogenesis- Natural haploid, diploid and cyclic parthenogenesis. Artificial stimulus for parthenogenesis and its significance.		02	Mar	
5	• Types of animal eggs.		02	Mar	
6	• Cellular dynamics in development		02	Mar	
7	• Organizer and Induction	Bandana Deka	04	Feb	
8	• Fate map construction in frog and chick.		06	Feb	
9	• Organogenesis: Development of heart and eye in vertebrates.		08	Mar	
10	• Development of chick embryo up to three germ layer formation.		06	Mar, Apr	
11	• Extra embryonic membranes in bird and mammal.		07	Apr, May	
12	• Placenta- different types, function and physiology.		04	May	

Semester	TDC IV Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Genetics	Paper No:	M-402

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Back cross and test cross.	Bandana Deka	01	Mar,	
2	• Varieties of gene expression- multiple alleles, lethal genes, pleiotropic genes, gene interaction, epistasis.		04	Mar,	
3	• Linkage- its mechanism and significance, Experiment of linkage, Linkage map.		03	Apr	
4	• Crossing over- types and mechanism, synaptonemal complex and genetic recombination, significance of crossing over.	Dr Sikha Rani Kalita	02	Apr	
5	• Genetic basis of sex determination.		01	Apr	
6	• Genetic diseases in man.		01	Apr	
7	• Nucleic acids- DNA and RNA, Chemical structure and function, Replication of DNA.	Dr Kakali Talukdar	03	Feb	
8	• Structural changes in chromosomes (Chromosomal aberration)		01	Feb	
9	• Numerical changes in chromosome, Genetic consequences of changes in chromosome.		02	Mar	
10	• Mutation- Molecular basis of mutation. Consequences of mutation.		02	Mar	
11	• Genetic code, transcription and regulation of protein synthesis.		03	Mar	
12	• Regulation of gene expression.		02	Mar	
13	• Sexuality and Recombination in Virus and Bacteria.		02	Apr	
14	• Mitochondrial DNA.		01	Apr	
15	• Human Karyotypes- Nomenclature, Human genome.		02	Apr	
16	• Cytogenetic effect of ionizing and non-ionizing radiation		02	May	

Semester	TDC IV Semester	Course	Major
Credit	04	Marks:	40+10=50
Paper Name	Practical	Paper No:	M-403

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	Developmental Biology • Study of frog development through prepared slides and models.	Bandana Deka	04	Mar	
2	• Study of whole preparation of chick embryos from 16-18 hours, 24-28 hrs, 33-36 hrs, 42-48 hrs and 72 hours of development.		06	Mar	
3	Genetics • Squash preparation for the study of mitosis in tadpole tail/ onion root tip.	Dr Kakali Talukdar	02	Mar	
4	• Study of meiosis in testes of Gryllotalpa/ Grasshopper.		02	Apr	
5	• Study of polytene chromosome in salivary glands of Chironomous or Drosophila.	Dr Sikha Rani Kalita	02	Mar	
6	• Study of sex chromatin from buccal epithelium.		02	Apr	

Semester	TDC IV Semester	Course	General
Credit	04	Marks:	40+10=50
Paper Name	Animal Diversity- II (Chordates)	Paper No:	E-401

Unit	Course Content	Allotted to	Hours	Month	Remarks
	• General characters outline classification and plan of body organization in chordates	Dr Kakali Talukdar	02	Feb	
1	• PROTOCHORDATES: General characters, classification of protochordates up to suborder with examples, Structural organisation of Hemichordata (Balanoglossus), Urochordata (Hardmania) and		04	Feb Mar	

	Cephalochordata (Amphioxus) affinities if Amphioxus.				
2	•AGNATHOSTOMATA: classification, Ammocoete larva		01	Mar	
3	•PISCES: General characters, classification up to order with examples. Anatomical structures of Scoliodon Digestive, circulatory system, nervous System of Scoliodon. Distinction between cartilaginous and bony fishes	Dr Sikha Rani Kalita	06	Feb, Mar	
4	•AMPHIBIA: General characters, classification up to order with examples. Anatomical structures of Bufo with special refernce to respiration. Metamorphosis in Amphibia.		06	Mar	
5	•REPTILIA: General characters, classification up to order with examples. Characteristics of poisonous snake, Poison apparatus and biting mechanism		06	Apr	
6	•AVES: Distinctive characters, classification up to order with examples. Difference between Paleognathae and Neognathae, Flight muscle and flight mechanisms in birds, Migration of bird.	Bandana Deka	09	Feb, Mar, Apr	
7	•MAMMALIA: Distinctive characters, classification up to order with examples. Affinities of Prototheria.		06	May	
8	•General organization of exoskeleton in vertebrates	Dr Kakali Talukdar	02	Mar	
9	•Comparative anatomy of heart and aortic arches in vertebrates		03	Apr	

Semester	TDC IV Semester	Course	General
Credit	04	Marks:	40+10=50
Paper Name	Practical	Paper No:	E-402

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Dissection- Afferent and efferent branchial system,		04	Apr	

	Internal ear and IX th and X th cranial nerves of Scoliodon	Bandana Deka			
2	• Slide preparation- Temporary	Dr Kakali Talukdar	02	Mar	
3	• Slide preparation- Permanent	Dr Sikha Rani Kalita	02	Mar	
4	• Identification of prepared slide	Dr Kakali Talukdar	02	Apr	
5	• Study of Bones	Dr Sikha Rani Kalita	02	Apr	
6	• Study of Museum Specimen	Bandana Deka	06	Mar	

Semester	TDC VI Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Animal Behaviour	Paper No:	M-601

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Introduction to Ethology	Bandana Deka	01	Feb	
2	• Scope and methods of ethology		02	Feb	
3	• Behaviour and equipment- Sign, stimuli, stimulus filtering		02	Feb	
4	• Patterns of Behaviour		02	Feb	
5	• Individual behavioural pattern		01	Feb	
6	• Homeing behaviour		01	Feb	
7	• Genetic basis of behaviour		02	Feb	
8	• Neural and hormonal control of behaviour		02	Feb	
9	• Circadian rhythm		02	Feb	
10	• Motivation: Models of motivation of motivation, feeding and drinking		02	Feb	
11	• Learning behaviour: Types of learning, Reasoning and Imprinting		02	Apr	
12	• Socio Biology: Social organization, Individual Social		08	Mar	

	interactions, Animal communications, Dance language of honey bees, Aggregation, Social behaviour of bee, ant and monkey, Role of pheromones.			
13	• Communication; Chemical, Visual, Audio, Language of behaviour, Habitat Selection, Aggression, Territoriality, Dispersal.		05	Apr

Semester	TDC VI Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Evolution and Adaptation	Paper No:	M-602

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Evolution – Origin of life	Dr Kakali Talukdar	02	Feb	
1.2	• Spontaneous generation, formation of organic compound.		02	Feb	
1.3	• Evidences of organic evolution: Embryological and biochemical		02	Feb	
1.4	• Theories of organic evolution		01	Feb	
1.5	• Darwinism and Neo-Darwinism		01	Feb	
1.6	• Lamarckism and Neo Lamarckism		01	Feb	
1.7	• Germplasm theory, Mutation theory		02	Feb	
1.8	• Modern synthetic theory		01	Feb	
1.9	• Concept of micro, macro and mega evolution		02	Feb	
1.10	• Phylogeny of Horse		01	Mar	
1.11	• Evolution of Man		01	Mar	
1.12	• Origin of Bird		01	Mar	
1.13	• Speciation- Genetic and Geographical		01	Mar	
1.14	• Zoo-geography		01	Mar	

1.15	• Factor influencing animal distribution		01	Mar	
1.16	• Geological time scale		01	Mar	
1.17	• Fossils-Definition, fossilization and significance, dating of fossils.		02	Mar	
2.1	• Principles of adaptation	Dr Sikha Rani Kalita	01	Mar	
2.2	• Types of adaptation- Aquatic, terrestrial and Volant adaptation		02	Mar	
2.3	• Adaptive Radiation in mammal		01	Mar	
2.4	• Cryptic and warning coloration, Mimicry.		01	Mar	

Semester	TDC VI Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Economic Zoology	Paper No:	M-603

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	Sericulture • Nature of silk	Dr Sikha Rani Kalita	01	Feb	
1.2	• Concise account of four varieties of silk products and economics in India (Eri, Muga, Pat, Tasar), Life cycle of silk worm- Muga and Eri		07	Feb	
1.3	• Diseases, prevention, and control measures of silkworm pest		02	Feb	
1.4	• Rearing of silkworm- Muga and Eri		02	Feb	
1.5	• Environmental conditions for silkworm rearing temperature, humidity, light and air		02	Feb	
1.6	• Storage, spinning and reeling of silkworm		01	Feb	
2.1	Apiculture • External Morphology of honey bee		01	Mar	

2.2	•Bee colony-cast/members-the queen, worker and drone, life history of honey bee, colony nest		03	Mar	
2.3	•Cast distinction during development of honey bee		02	Mar	
2.4	•Economics of bee keeping		01	Mar	
3.1	Aquaculture •Aquaculture-Definition, Important groups of aquacultures		02	Mar	
3.2	•Fresh water fish groups of India		02	Mar	
3.3	•Captive and culture fisheries		02	Apr	
3.4	•Fresh water prawn culture		02	Apr	
3.5	•Pond fisheries- Construction and layout of ponds of a fish farm		03	Apr	
3.6	•Composite fish culture		02	Apr	
3.7	•Induced breeding		02	Apr	
3.8	•Integrated fish farming		03	Apr	
4	•Lac culture and enemies of lac, uses of lac		03	Apr	
5.1	Pest and pest Management •Definition of term pest, Types of pests	Bandana Deka	02	Mar	
5.2	•Importance of pest control		02	Mar	
5.3	•Principles of pest control- Cultural, Physical, Mechanical and Biological control of Pest		05	Mar	
5.4	•Pesticides and their hazards		02	Mar	
5.5	•Role of natural products and in pest control		02	Apr	
5.6	•Integrated pest management		03	Apr	

Semester	TDC VI Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Biotechnology, Bioinformatics and Computer Application	Paper No:	M-604

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Basic concepts in genetic engineering	Dr Kakali Talukdar	01	Mar	
1.2	• Enzymology in genetic engineering- Restriction enzyme, DNA ligases		02	Mar	
1.3	• Tissue culture		02	Apr	
1.4	• Media preparation and sterilisation		01	Apr	
1.5	• Cell culture media preparation and cell harvesting methods		02	Apr	
1.6	• Cloning		01	Apr	
1.7	• Gene libraries- Construction of CDNA, mRNA, isolation		02	Apr	
1.8	• Transferring genes into animal oocytes, eggs, embryos and specific animal tissues		02	Apr	
2.1	• Operating system DOTS, WINDOWS, UNIX	Guest lecture	03	Apr	
2.2	• Programming using C++		02	Apr	
2.3	• Computer aided techniques for data presentation, data analysis, statistical techniques		04	Apr	

Semester	TDC VI Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	Economic Zoology (Practical)	Paper No:	M-605

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Identification of different varieties of silkworm (Eri, Muga, Mulberry) larval and adult stages	Dr Sikha Rani Kalita	2	Mar	
2	• Study of life history of honey bee	Bandana Deka	02	Mar	
3	• Study of important pest of paddy, jute, tea, stored grain, cane sugar and vegetables		06	Apr	
4	• Identification of commercially important fishes		02	Apr	
5	• Slide preparation: pollen basket of honeybee, different types of antennae, mouth parts, legs of insects	Dr Sikha Rani Kalita	2	Apr	
6	• Dissection of pituitary from any locally available fish		2	Apr	

Semester	TDC VI Semester	Course	Major
Credit	06	Marks:	60+15=75
Paper Name	(Practical)	Paper No:	M-606

Unit	Course Content	Allotted to	Hours	Remarks
	Submission	Bandana Deka	About 3-4 class	In the month of Mar Teachers will demonstrate the methods
1.1	• Submission of slides			
1.2	• Submission of body parts of insects			
1.3	• Insect pest, fishes and other insects (10 in each category)			
1.4	• Project: Each student should allot a field-based study and presents the result in the form of a report	Bandana Deka Dr Sikha Rani Kalita Dr Kakali Talukdar	In-Charge teacher will guide the field- based study per student on a given topic	

1.5	• Visit to advanced laboratories/National Park/Wildlife Sanctuary and prepare a note	Bandana Deka Dr Sikha Rani Kalita Dr Kakali Talukdar	Teacher will guide and accompany the tour in the month of Feb/ Mar
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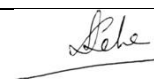
Semester	TDC VI Semester	Course	General
Credit	08	Marks:	80+20=100
Paper Name	Physiology, Biochemistry and Endocrinology	Paper No:	E-601

Unit	Course Content	Allotted to	Hours	Month	Remarks
1.1	• Chemical foundation of physiology- solution, osmotic pressure, diffusion, PK and Ph, buffer	Dr Kakali Talukdar	02	Feb	
1.2	• Physiology of digestion- Digestion of carbohydrates, fats and protein. Function of liver and pancreas, Absorption of dietary components	Dr Sikha Rani Kalita	03	Feb	
.1.3	• Respiration: Exchange of gases, O ₂ transport, respiratory pigments, O ₂ association and dissociation curve, transport and removal of CO ₂	Bandana Deka	04	Feb	
.1.4	• Excretion: Nitrogenous wastes- ammonotelic, ureotelic and uricotelic modes of excretion.	Dr Sikha Rani Kalita	02	Mar	
1.5	• Blood- Composition and function of blood and lymph, Blood group and Blood coagulation	Dr Kakali Talukdar	04	Feb	
1.6	• Initiation and conduction of nerve impulse, Neurotransmitters	Bandana Deka	03	Feb	
2.1	• Biomolecules- Structure, classification and biological significance of carbohydrate, protein and lipid	Dr Kakali Talukdar	04	Feb, Mar	
2.2	• Enzymes nature and classification- Mechanism of enzyme action		02	Mar	
2.3	• Cellular respiration		01	Apr	
3.1	• Brief outline of organisation of endocrine system in mammals with special reference to Pituitary, and	Bandana Deka	04	Mar	

	Gonads				
3.2	• Regulation of hormone secretion		02	Mar	
4.1	• Utility of biostatistics	Dr Sikha Rani Kalita	01	Mar	
4.2	• Mean-Arithmetic, Geometric and Harmonic mean. Median and Mode		03	Mar	
4.3	• Standard deviation, standard error of mean		03	Apr	
4.4	• Graphic representation of data- histogram, bar diagram, Pie diagram		02	Apr	

Semester	TDC VI Semester	Course	General
Credit	08	Marks:	80+20=100
Paper Name	Practical	Paper No:	E-601

Unit	Course Content	Allotted to	Hours	Month	Remarks
1	• Determination of blood group in man	Bandana Deka	01	Apr	
2	• RBC, WBC- total count		02	Apr	
3	• Preparation of haemin crystal		01	Apr	
4	• Biochemical detection of carbohydrate (mono, di, and polysaccharides/ glucose, fructose, sucrose,) protein and lipid	Dr Kakali Talukdar	02	Mar	
5	• Qualitative detection of salivary amylase		02	Apr	
6	• Dissection of pituitary, thyroid, pancreas in Rat/rabbit	Dr Sikha Rani Kalita	3	Apr	
7	• Dissection of Weberian ossicle in fish		1	Apr	
8	• Dissection of pituitary gland in fish		1	Apr	



**Signature of HoD
(Bandana Deka)**