

SEM I: CORE COURSE I

Phycology and Microbiology

CODE: BOTACOR01T (4 Credits) & BOTACOR01P (2 Credits)

LEARNING OUTCOMES:

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

- Develop understanding on the concept of microbial nutrition
- Classify viruses based on their characteristics and structures
- Develop critical understanding of plant diseases and their remediation.
- Examine the general characteristics of bacteria and their cell reproduction/ recombination
- Increase the awareness and appreciation of human friendly viruses, bacteria, algae and their economic importance.
- Conduct experiments using skills appropriate to subdivisions.

**LESSON PLAN FOR
SEMESTER: 1**

THEORY

Phycology and Microbiology (BOTACOR01T)

(CREDIT: 4)

BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR HONS)										
NAME OF THE DEPARTMENT					Botany					
HOD		DR. ARUNEEMA BARDHAN								
INITIALS OF FACULTIES		AC	AB	SDG	SS	ABJ				
PERIOD OF SEMESTER		FROM JULY 2022 TO DECEMBER 2022					HONS		GENERAL	
		FROM SEPTEMBER 2022 TO JANUARY 2022					√			
SEM	1	Core Course		1	CREDIT POINT		4	Course Code	BOTACOR01T	
Name of the Course		PHYCOLOGY AND MICROBIOLOGY (CC1)								
Course Co-ordinator		DR. AYANA CHAKRABORTY								
TOTAL MARKS	50	TH	√	TUT		PRAC				
TOTAL HOURS	60 HRS (adjusted to 51 HRS)									
UNIT/ SECTION/ GROUP/ MODULE/ TOPIC			1							
NAME OF THE UNIT/MODULE			Introduction to microbial world							
TOTAL HOURS	7 HRS	THEORY	√	TUTORIAL		PRAC				
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)										
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH				
1.	Primary concept of microorganism, classification, domain concept			1	AC	SEPT				
2.	Five kingdom classification, Three domain concept by Carl Woese			1	AC	SEPT				
3.	Microbial characteristics, nutrition			1	AC	SEPT				
4.	Growth and metabolism			1	AC	SEPT				
5.	Role of virus in vaccine production and research			1	AC	OCT				
6.	Role of virus in medicine, diagnostic uses and plant diseases			1	AC	NOV				
7.	Economic Importance of bacteria in agriculture and industry			1	AC	NOV				
TOTAL				7 HRS						

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC			2						
NAME OF THE UNIT/MODULE			Viruses						
TOTAL HOURS	7 HRS 6 HRS	THEORY	√	TUTORIAL		PRAC			
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)									
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH			
1	Virus: physicochemical and biological characters and types of virus.			1	AC	NOV			
2	General structure of virus, prion and viroids.			1	AC	NOV			
3	Classification of virus, Study of DNA virus (T-phage)			1	AC	NOV			
4	Lytic and Lysogenic cycle			1	AC	NOV			
5	Study of RNA virus (TMV)			1	AC	NOV			
6	Multiplication of TMV			1	AC	NOV			
TOTAL				6 HRS					

*** Alloted total 7 hours adjusted to 6 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		3				
NAME OF THE UNIT/MODULE		Bacteria				
TOTAL HOURS	7 HRS	THEORY	√	TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	General Characters of bacteria; Types of bacteria (archaeobacteria, eubacteria, wall-less forms i.e., mycoplasma, spheroplasma)			1	AC	DEC
2	Cell structure of bacteria and nutritional types			1	AC	DEC
3	Vegetative and asexual reproduction of bacteria			1	AC	DEC
4	Class Test			1	AC	DEC
5	Bacterial Conjugation			1	AC	DEC
6	Bacterial Transformation			1	AC	DEC
7	Bacterial Transduction			1	AC	JAN
	TOTAL			7 HRS		

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		4				
NAME OF THE UNIT/MODULE		Algae				
TOTAL HOURS	11 Hrs 9 Hrs	THEORY	√	TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Algae: General characteristics, ecology and distribution,			1	SS	SEPT
2	Range of thallus organisation of algae			1	SS	SEPT
3	Cell structure and cell components of algae; Cell wall structure, composition			1	SS	NOV
4	Pigment system and reserve food of algae			1	SS	NOV
5	Algal flagella – types, structure, flagellar root			1	SS	NOV
6	Classification criteria according to Lee, 2008; Evolutionary classification according to Lee, 2008			1	SS	DEC
7	Methods of reproduction – vegetative, asexual and sexual			1	SS	DEC
8	Role of algae in the environment, agriculture			1	SS	DEC
9	Role of algae in biotechnology and industry.			1	SS	JAN
10						
11						
	TOTAL			9 HRS		

*** Alloted total 11 hours adjusted to 9 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		5				
NAME OF THE UNIT/MODULE		Cyanophyta and Xanthophyta				
TOTAL HOURS	8 Hrs 7 Hrs	THEORY	√	TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Ecology, occurrence, cell structure and			1	ABJ	SEPT
2	Range of thallus organisation of cyanophyta			1	ABJ	SEPT
3	Morphology of <i>Nostoc</i>			1	ABJ	NOV
4	Reproduction and Life cycle of <i>Nostoc</i>					NOV
5	Ecology, occurrence, cell structure and range of thallus organisation of xanthophyta			1	ABJ	NOV
6	Morphology and reproduction (asexual) of <i>Vaucheria</i>			1	ABJ	DEC
7	Reproduction (sexual) and Life cycle of <i>Vaucheria</i>			1	ABJ	DEC
8						
	TOTAL			7 HRS		

*** Alloted total 8 hours adjusted to 7 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		6				
NAME OF THE UNIT/MODULE		Chlorophyta and Charophyta				
TOTAL HOURS	8 Hrs	THEORY	√	TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	General characters, occurrence and range of thallus organisation of chlorophyta			1	ABJ	DEC
2	Cell structure, Morphology and reproduction of chlorophyta			1	ABJ	DEC
3	Life cycle of <i>Volvox</i>			1	ABJ	JAN
4	Life Cycle of <i>Oedogonium</i> (macrandrous)			1	ABJ	JAN
5	Life Cycle of <i>Oedogonium</i> (nannandrous)			1	ABJ	JAN
6	General characters, occurrence, range of thallus organisation, cell structure, morphology and reproduction of Charophyta			1	ABJ	JAN
7	Life cycle of <i>Chara</i>			1	SS	JAN
8	Evolutionary significance of Prochloron, Question answer discussion			1	SS	JAN
	TOTAL			8 HRS		

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		7				
NAME OF THE UNIT/MODULE		Phaeophyta and Rhodophyta				
TOTAL HOURS	12 Hrs 8 Hrs	THEORY	√	TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Characteristics, occurrence and Range of thallus organisations of Phaeophyta			1	AC	
2	<i>Ectocarpus</i> : Cell structure, morphology, asexual and sexual reproduction, Life Cycle			1	AC	JAN
3	<i>Fucus</i> : Cell structure, morphology, asexual and sexual reproduction, Life Cycle			1	AC	JAN
4	Doubt Clearing Class			1	AC	JAN
5	Characteristics, occurrence and Range of thallus organisations of Rhodophyta			1	AC	JAN
6	<i>Polysiphonia</i> : Cell structure, morphology, asexual reproduction			1	AC	JAN
7	Sexual reproduction and Life Cycle of <i>Polysiphonia</i>			1	AC	JAN
8	QA discussion			1	SS	JAN
	TOTAL			8 HRS		

*** Alloted total 12 hours adjusted to 8 hours.

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LESSON PLAN FOR

SEMESTER: 1

Phycology and Microbiology

PRACTICAL (BOTACOR01P)

(CREDIT: 2)

BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR HONS)										
NAME OF THE DEPARTMENT					BOTANY					
HOD		DR. ARUNEEMA BARDHAN								
INITIALS OF FACULTIES			AC	AB	SDG	SS	ABJ			
PERIOD OF SEMESTER		FROM JULY 2022 TO DECEMBER 2022					HONS		GENERAL	
		FROM SEPTEMBER 2022 TO JANUARY 2022					√			
SEM	1	Core Course		1	CREDIT POINT		2	Course Code		BOTACOR01P
Name of the Course										
Course Co-ordinator			DR. AYANA CHAKRABORTY							
TOTAL MARKS		25	TH		TUT			PRAC	√	
TOTAL HOURS		60 HRS								
UNIT/ SECTION/ GROUP/ MODULE/ TOPIC				PRACTICAL						
NAME OF THE UNIT/MODULE				Phycology and Microbiology Practical						
TOTAL HOURS		60 HRS 52 HRS	THEORY		TUTORIAL		PRAC		√	
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)										
SL	TOPIC					HR	TEACHER	MONTH		
	Phycology Practical (Group: A)									
1.	Study of procedure of preparation of temporary slides.					2	SS	SEPT		
2.	Study of vegetative and reproductive structures of <i>Nostoc</i> through temporary preparation and permanent slides / photographs					2	SS	SEPT		
3.	Study of vegetative and reproductive structures of <i>Volvox</i> through temporary preparation and permanent slides / photographs					2	SS	NOV		
4.	Study of vegetative and reproductive structures of <i>Oedogonium</i> (macrandrous) through temporary preparation and permanent slides / photographs					2	SS	NOV		
5.	Study of vegetative and reproductive structures of <i>Oedogonium</i> (nannandrous) through temporary preparation and permanent slides / photographs							NOV		
6.	Study of vegetative and reproductive structures of <i>Chara</i> through temporary preparation and permanent slides / photographs.					2	SS	DEC		
7.	Study of vegetative and reproductive structures of <i>Vaucheria</i> through temporary preparation and permanent slides / photographs					2	SS	DEC		
8.	Study of vegetative and reproductive structures of <i>Ectocarpus</i> through temporary preparation and permanent slides / photographs.					2	SS	DEC		
9.	Study of vegetative and reproductive structures of <i>Fucus</i> through temporary preparation and permanent slides / photographs.					2	SS	JAN		
10.	Study of vegetative and reproductive structures of <i>Polysiphonia</i> (male spermatangia and female carpogogonia, Tetrasporangia and					2	SS	JAN		

	Cystocarp) through temporary preparation and permanent slides / photographs			
11.	Study of <i>Prochloron</i> through electron micrographs / photographs – drawing and description	2	AC	DEC
12	Introduction to micrometry and magnification under X10 and X40 objectives (principles and methodology) Study of procedure of prism drawing.	2	AC	DEC
13.	Camera lucida drawing (using drawing prism) of vegetative and reproductive structure of <i>Chara</i>	2	AC	DEC
14.	Camera lucida drawing (using drawing prism) of vegetative and reproductive structure of <i>Oedogonium (macrandrous)</i> ,	2	AC	DEC
15.	Camera lucida drawing (using drawing prism) of vegetative and reproductive structure of <i>Oedogonium (nannadrous)</i>	2	AC	JAN
16.	Camera lucida drawing (using drawing prism) of vegetative and reproductive structure of <i>Vaucheria</i>	2	AC	JAN
17.	Camera lucida drawing (using drawing prism) of vegetative and reproductive structure of <i>Polysiphonia</i> (cystocarp, tetrasporophyte and tetrasporangia)	2	AC	JAN
	Microbiology Practical (Group: B)			
1.	Electron micrographs/Models of viruses – T-Phage & TMV.	2	AC	SEPT
2.	Line drawings/ Photographs of Lytic and Lysogenic Cycle.	2	AC	SEPT
3.	Study of types of Bacteria from temporary/permanent slides/photographs	2	AC	OCT
4.	Study of bacteria, binary fission, endospore from Electron micrographs/photographs	2	AC	NOV
5.	Study of conjugation, root nodule from Electron micrographs/photographs.	2	AC	NOV
6.	Demonstration of Preparation of media, sterilization.	2	AC	NOV
7.	Demonstration of Sub culturing.	2	AC	NOV
8.	Gram staining	2	SS	JAN
9.	Endospore staining (endospores taken from soil bacteria) with malachite green	2	SS	JAN
	TOTAL		52 HOURS	

*** Keeping the contents unchanged Total 60 Hours adjusted to 52 hours according to time availability.

SEM I: CORE COURSE II

Biomolecules and Cell Biology

**CODE: BOTACOR02T (4 Credits) &
BOTACOR02P (2 Credits)**

LEARNING OUTCOMES:

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

- Develop understanding on chemical bonding among molecules
- Identify the concept that explains chemical composition and structure of cell wall and membrane
- Classify the enzymes and explain mechanism of action and structure
- Compare the structure and function of cells & explain the development of cells
- Describe the relationship between the structure and function of biomolecules.

LESSON PLAN FOR

SEMESTER: 1

THEORY

Biomolecules and Cell Biology (BOTACORO2T)

(CREDIT: 4)

BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR HONS)												
NAME OF THE DEPARTMENT						BOTANY						
HOD		DR. ARUNEEMA BARDHAN										
INITIALS OF FACULTIES		DAY	AC	AB	SDG	SS	ABJ					
		MORN										
PERIOD OF SEMESTER		FROM JULY 2022 TO DECEMBER 2022						HONS		GENERAL		
		FROM SEPTEMBER 2022 TO JANUARY 2022						√				
SEM	1	Core Course			2	CREDIT POINT		4	Course Code	BOTACORO2T		
Name of the Course			Biomolecules and Cell Biology									
Course Co-ordinator			DR. ARUNEEMA BARDHAN									
TOTAL MARKS	50	TH		√	TUT			PRAC				
TOTAL HOURS	60 HRS (adjusted to 44 HRS)											
UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		1										
NAME OF THE UNIT/MODULE		Biomolecules										
TOTAL HOURS	20 Hrs 14 Hrs	THEORY			TUTORIAL			PRAC				
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)												
SL	LECTURE HEAD/TOPIC							HR	TEACHER	MONTH		
1	Types and significance of chemical bonds							1	AB	SEPT		
2	Structure and properties of water,							1	AB	SEPT		
3	pH and buffers							1	AB	SEPT		
4	Carbohydrates: Nomenclature and classification,							1	AB	SEPT		
5	Carbohydrates: Monosaccharides, disaccharides, oligosaccharides and polysaccharides							1	AB	NOV		
6	Lipids: Definition and major classes of storage and structural lipids							1	AB	NOV		
7	Lipids: ; Fatty acids structure and functions, Essential fatty acids							1	AB	NOV		
8	Lipids: Triacylglycerols structure functions and properties;							1	AB	NOV		
9	Phosphoglycerides									NOV		
10	Proteins: Structure of amino acids; levels of protein structure- primary, secondary protein, tertiary and quarternary							1	AB	NOV		
11	Proteins: denaturation , biological roles of proteins							1	AB	DEC		
12	Nucleic acids: Structure of nitrogenous bases, nucleotides							1	AB	DEC		
13	Nucleic acids: types of nucleic acids; structure of A type of DNA, Structure of B and Z types of DNA							1	AB	DEC		
14	Nucleic acids: types of RNA; structure of tRNA							1	AB	DEC		
TOTAL							14 HRS					

*** Alloted total 20 hours adjusted to 14 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		2				
NAME OF THE UNIT/MODULE		Bioenergenetics				
TOTAL HOURS	4 Hrs 3 Hrs	THEORY		TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Laws of thermodynamics; concept of free energy, endergonic and exergonic reactions			1	AB	DEC
2	Coupled reactions, redox reactions			1	AB	DEC
3	ATP structure, its role as a energy currency molecule			1	AB	JAN
	TOTAL			3 HRS		

*** Alloted total 4 hours adjusted to 3 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		2				
NAME OF THE UNIT/MODULE		Enzymes				
TOTAL HOURS	6 Hrs 5 Hrs	THEORY		TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Structure of enzyme, holoenzyme, apoenzyme, Cofactors, coenzymes and prosthetic group			1	AB	JAN
2	Classification of enzymes; Features of active site, substrate specificity			1	AB	JAN
3	Mechanism of action (activation energy, lock and key hypothesis, induced - fit theory);			1	AB	JAN
4	Michaelis – Menten equation and Lineweaver-Burk Plot			1	SDG	JAN
5	Enzyme inhibition and factors affecting enzyme activity.			1	-	JAN
6						
	TOTAL			5 HRS		

*** Alloted total 6 hours adjusted to 5 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		4				
NAME OF THE UNIT/MODULE		The Cell				
TOTAL HOURS	4 Hrs 3Hrs	THEORY		TUTORIAL		PRAC
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Cell as a unit of structure and function			1	SDG	SEPT
2	Cell: characteristics of prokaryotic and eukaryotic cells			1	SDG	SEPT
3	Origin of cell; origin of eukaryotic cell (endosymbiotic theory)			1	SDG	SEPT
4						
	TOTAL			3 HRS		

*** Alloted total 4 hours adjusted to 3 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		5				
NAME OF THE UNIT/MODULE		Cell wall and plasma membrane				
TOTAL HOURS	4 Hrs 3Hrs	THEORY		TUTORIAL	PRAC	
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Chemistry, structure and function of plant cell wall;			1	SDG	SEPT
2	Overview of membrane function; Fluid mosaic model; chemical composition of membranes.			1	SDG	OCT
3	Membrane transport – passive, active and facilitated transport, endocytosis and exocytosis.			1	SDG	NOV
4						
TOTAL				3 HRS		

*** Alloted total 4 hours adjusted to 3 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		6				
NAME OF THE UNIT/MODULE		Nucleus and Endomembrane system				
TOTAL HOURS	16 Hrs 13 Hrs	THEORY		TUTORIAL	PRAC	
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Nucleus: Structure - nuclear envelope,			1	SDG	NOV
2	Nucleus: nuclear pore complex, nuclear lamina			1	SDG	NOV
3	Nucleus: molecular organization of chromatin			1	SDG	NOV
4	Nucleus: nucleolus			1	SDG	NOV
5	Cytoskeleton: Role and structure of microtubules; microfilaments and intermediary filament.			1	SDG	NOV
6	Chloroplast, mitochondria and peroxisomes: Structural organization; function; semiautonomous nature of mitochondria			1	SDG	NOV
7	Chloroplast, mitochondria and peroxisomes: Structural organization; function; semiautonomous nature of chloroplast.			1	SDG	DEC
8	Chloroplast, mitochondria and peroxisomes: Structural organization; function of peroxisomes.			1	SDG	DEC
9	Endomembrane system: Endoplasmic reticulum – structure, targeting and insertion of proteins in the ER			1	SDG	DEC
10	Endomembrane system: protein folding, processing			1	SDG	DEC
11	Endomembrane system: smooth ER and lipid synthesis,			1	SDG	DEC
12	Endomembrane system: export of proteins and lipids;			1	SDG	DEC
13	Endomembrane system: Golgi apparatus – organization, protein glycosylation, Golgi apparatus – protein sorting and export from Golgi apparatus; lysosomes.			1	SDG	JAN
14						
15						
16						
TOTAL				13 HRS		

*** Alloted total 16 hours adjusted to 13 hours.

UNIT/ SECTION/ GROUP/ MODULE/ TOPIC		7				
NAME OF THE UNIT/MODULE		Cell divion				
TOTAL HOURS	6 Hrs 4 Hrs	THEORY		TUTORIAL	PRAC	
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)						
SL	LECTURE HEAD/TOPIC			HR	TEACHER	MONTH
1	Cell division: Phases of eukaryotic cell cycle			1	SDG	JAN
2	Cell division: Mitosis			1	SDG	JAN
3	Cell division: Meiosis			1	SDG	JAN
4	Cell division: cell cycle - checkpoints, regulation of cell cycle - checkpoints, Role of protein kinases			1	SDG	JAN
5				1	SDG	JAN
6						
	TOTAL			4 HRS		

*** Alloted total 6 hours adjusted to 4 hours.

LESSON PLAN FOR

SEMESTER: 1

Biomolecules and Cell Biology

PRACTICAL (BOTACORO2P)

(CREDIT: 2)

BASIRHAT COLLEGE LESSON PLAN FOR CBCS (FOR HONS)										
NAME OF THE DEPARTMENT					BOTANY					
HOD		Dr. ARUNEEMA BARDHAN								
INITIALS OF FACULTIES		DAY	AC	AB	SDG	SS	ABJ			
		MORN								
PERIOD OF SEMESTER		FROM JULY 2022 TO DECEMBER 2022					HONS		GENERAL	
		FROM SEPTEMBER 2022 TO JANUARY 2022					√			
SEM	1	Core Course		2	CREDIT POINT		2	Course Code	BOTACOR02P	
Name of the Course			Biomolecules and cell Biology							
Course Co-ordinator			DR. ARUNEEMA BARDHAN							
TOTAL MARKS	25	TH			TUT			PRAC	√	
TOTAL HOURS	60									
UNIT/ SECTION/ GROUP/ MODULE/ TOPIC					Practical					
NAME OF THE UNIT/MODULE					Biomolecules and Cell Biology Practical					
TOTAL HOURS	60 HRS (adjusted to 44 HRS)			THEORY		TUTORIAL		PRAC	√	
DISTRIBUTION OF LESSON PLAN (MODULE/ UNIT/ SECTION/ TOPIC WISE)										
SL	TOPIC					HR	TEACHER	MONTH		
	Unit: 1: Qualitative tests									
1	Qualitative tests for reducing sugar- Glucose.					2	AB	OCT		
2	Qualitative tests for reducing sugar- fructose Qualitative tests for reducing sugar- Sucrose					2	AB	NOV		
3	Qualitative tests for non- reducing sugar- Starch					2	AB	NOV		
4	Qualitative tests for Protein					2	AB	NOV		
5	Qualitative tests for Lipid					2	AB	DEC		

	Unit 2: Study of plant cell structure with the help of epidermal peel			
6	Study of plant cell structure with the help of epidermal peel mount Onion	2	AB	DEC
7	Study of plant cell structure with the help of epidermal peel mount <i>Rhoeo</i>	2	AB	DEC
8	Study of plant cell structure with the help of epidermal peel mount OF <i>Crinum</i> .	2	AB	DEC
9	Unit 3: Micrometry Measurement of cell size by the technique of micrometry.	2	AB	DEC
10	Measurement of cell size by the technique of micrometry – Practice class			
11	Unit 4: Counting the cells (yeast/ pollen grains) per unit volume with the help of haemocytometer	2	AB	JAN
12	Practice class on cell counting			
	Unit 5: Study of cell and its organelles with the help of electron micrographs/ photographs (Prokaryotic and Eukaryotic)			
13	Study of Prokaryotic cell Study of Eukaryotic cell	2	SDG	OCT
14	Study of Nucleus Study of Mitochondria	2	SDG	OCT
15	Study of Chloroplast, Study of ER	2	SDG	OCT
16	Study of Golgi bodies and peroxysome	2	SDG	NOV
17	Unit 6: Cytochemical staining of: DNA-Feulgen	2	SDG	NOV
18	Unit 7: Study the effect of organic solvent and temperature on membrane permeability.	2	SDG	DEC
19	Unit 8: Study of cell division			
20	Study of the different stages of mitosis	2	SDG	DEC
21	Study of the different stages of meiosis	2	SDG	DEC
22	Practice class			JAN
	TOTAL	44 HRS		

*** Keeping the contents unchanged, Alloted total 60 hours adjusted to 44 hours according to time availability.

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