

Lesson Plan (2025-26)

Name of Assistant/Associate Professor: Dr. Neelam Kumari Class: B.Sc. III- (Medical) 5th Semester

Paper: Cell Biology (BOT501L), Molecular Biology (BOT503L)

Lesson Plan: 14th July to 24th Nov 2025

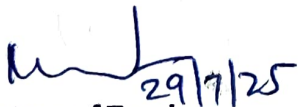
Weeks	Topic Covered
Week 1(14 th to 19 th July)	The Cell Theory; Prokaryotic and eukaryotic cells; Cell size and shape; Eukaryotic Cell components.
Week 2(21 th July to 26 th July)	DNA: Miescher to Watson and Crick- historic perspective, Griffith's and Avery's transformation experiments, Hershey-Chase bacteriophage experiment,
Week 3 (28 th July to 2 nd Aug)	DNA structure, types of DNA, types of genetic material. DNA replication (Prokaryotes and eukaryotes): bidirectional replication, semi-conservative, semi discontinuous RNA priming, replication of linear dsDNA, replicating the 5' end of linear chromosome including replication enzymes
Week 4 (04 th Aug to 09 th Aug.)	The functions of membranes; Models of membrane structure; The fluidity of membranes; Membrane proteins and their functions; Carbohydrates in the membrane; Faces of the membranes; Selective permeability of the membranes; Cell wall
Week 5 (11 th Aug to 16 th Aug)	Mitochondria: Structure, marker enzymes, composition; Semiautonomous nature; Symbiont hypothesis; Proteins synthesized within mitochondria; mitochondrial DNA.
Week 6 (18 th Aug to 23 rd Aug)	Chloroplast Structure, marker enzymes, composition; semiautonomous nature, chloroplast DNA.ER, Golgi body & Lysosomes: Structures and roles.
Week 7(25 th Aug to 30 th Aug)	RNA structure and types of RNA, Transcription in prokaryotes: Prokaryotic RNA polymerase, role of sigma factor, promoter, initiation, elongation and termination of RNA chains. Transcription in eukaryotes: Eukaryotic RNA polymerases
Week 8(1 st Sep to 6 th Sep)	Genetic code and its characteristics, prokaryotic and eukaryotic translation: ribosome structure and assembly, charging of tRNA, amino acyl tRNA synthetase, mechanism of initiation, elongation and termination of polypeptide
Week 9 (8 th Sep – 13 th Sep)	Regulation of gene expression in prokaryotes: Operon concept (inducible and repressible system). Assignment -1, Test-1
Week 10 (15 th Sep-20 th Sep)	Peroxisomes and Glyoxisomes: Structures, composition, functions in animals and plants and biogenesis.
Week 11 (22 nd Sep-27 th Sep)	Nucleus: Nuclear Envelope- structure of nuclear pore complex
Week 12 (29 th Sep-04 th Oct.)	Chromatin; molecular organization, DNA packaging in eukaryotes, euchromatin and heterochromatin, nucleolus and ribosome structure (brief).
Week 13 (6 th Oct. -11 th Oct.)	Cell Cycle: Overview of Cell cycle, Mitosis and Meiosis; Molecular controls.
Week 14 (13 th Oct – 18 th Oct)	Introduction to electrophoresis, Agarose gel electrophoresis, acrylamide gel electrophoresis, Immuno-electrophoresis, PCR and its variants, application of PCR, Assignment -2, Test-2
Week 15 (27 th Oct – 31 th Oct)	Principles of microscopy; Light and Phase contrast microscopy;
Week 16(3 rd Nov.-8 th Nov)	Electron microscopy (EM)- Scanning EM and Scanning Transmission EM (STEM).
Week 17(10 th Nov- 15 th Nov)	Revision
Week 18 (17 th Nov- 22 th Nov)	Revision

Signature of Teacher 29/11/25

Principal

Lesson Plan (2025-26)**Name of Assistant/Associate Professor: Dr. Neelam Kumari****Class: B.Sc. II- Life Science 3rd Sem.****Paper: Diversity of seed Plants: Gymnosperms & Angiosperms (DSC) Course Code: C2BOT301T****Lesson Plan: 14th July to 24th Nov 2025****July 2025& August 2025**

Weeks	Topic Covered
Week 1(14 th to 19 th July)	Unit 1: Gymnosperms: General characters
Week 2(21 th July to 26 th July)	Unit 1: Gymnosperms: Economic importance, Classification up to classes (Smith)
Week 3 (28 th July to 2 nd Aug)	Unit 1: Gymnosperms: Morphology, Anatomy of <i>Cycas</i>
Week 4 (04 th Aug to 09 th Aug.)	Unit 1: Gymnosperms: Reproduction of <i>cycas</i>
Week 5 (11 th Aug to 16 th Aug)	Unit 1: Gymnosperms: Reproduction of <i>cycas</i> (Contd.)
Week 6 (18 th Aug to 23 rd Aug)	Unit 1: Gymnosperms: Morphology, Anatomy of <i>Pinus</i>
Week 7(25 th Aug to 30 th Aug)	Unit 1: Gymnosperms: Reproduction of <i>Pinus</i>
September 2025	
Week 8(1 st Sep to 6 th Sep)	Unit II: Taxonomy and Systematics, Types of classification: Artificial, Natural and Phylogenetic
Week 9 (8 th Sep – 13 th Sep)	Unit II: Bentham and Hooker classification, Its merits and demerits.
Week 10 (15 th Sep-20 th Sep)	Unit II: Botanical Nomenclature, International Code for Botanical Nomenclature (ICBN), Taxonomic Keys.
Week 11 (22 nd Sep-27 th Sep)	Unit III: Herbarium: Preparation steps and types, Type, Concept, Assignment-1 Test-1
October 2025	
Week 12 (29 th Sep-04 th Oct.)	Unit III: Botanical Garden, And Introduction to Botanical Survey of India Assignment-1 Test-1
Week 13 (6 th Oct -11 th Oct.)	Unit III: Flower and its Parts (Semi technical description), Types of Inflorescence, Simple and Compound Leaves, Phyllotaxy.
Week 14 (13 th Oct – 18 th Oct)	Unit IV: Diagnostic features and economic importance of the following families: Malvaceae, Solanaceae
Week 15 (27 th Oct – 31 th Oct)	Unit IV: Diagnostic features and economic importance of the following families: Lamiaceae, Asteraceae
November 2025	
Week 16 (3 rd Nov.-8 th Nov)	Unit IV: Diagnostic features and economic importance of the following families: Fabaceae
Week 17 (10 th Nov- 15 th Nov)	Unit IV: Diagnostic features and economic importance of the following families: Poaceae
Week 18 (17 th Nov-22 nd Nov)	Revision



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Lesson Plan (2025-26)

Name of Assistant/Associate Professor: Dr. Neelam Kumari

Class: B.Sc. I- Life Science 1st Sem.

Subject: Botany Name of paper - Diversity of Microbes & Lower Cryptogams; Cytology (DSC)

Paper code: C24BOT101T

Lesson Plan: 14th July to 24th Nov 2025

July 2025& August 2025

Weeks	Topic Covered
Week 1(14 th to 19 th July)	Unit 1: Bacteria: Structure, Bacterial types (gram positive & gram negative)
Week 2(21 th July to 26 th July)	Bacterial Reproduction Economic Importance of Bacteria
Week 3 (28 th July to 2 nd Aug)	Viruses: General account of Virus, Structure of TMV. Structure of Bacteriophage
Week 4 (04 th Aug to 09 th Aug.)	Unit 2: Algae Algae: General characters, Classification up to classes (G.M. Smith, 1955), Economic Importance,
Week 5 (11Aug to 16Aug)	Life Cycle (excluding development) of Nostoc (Cyanophyceae),
Week 6 (18 th Aug to 23 rd Aug)	Volvox, (Chlorophyceae),
Week 7(25 th Aug to 30 th Aug)	Ectocarpus (Phaeophyceae).

September 2025

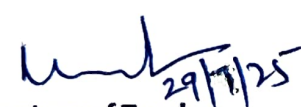
Week 8(1 st Sep to 6 th Sep)	UNIT: 3 Fungi Fungi: General characters, Classification up to classes (Alexopoulos and Mims, 1979), Economic Importance,
Week 9 (8 th Sep – 13 th Sep)	Life Cycle (excluding development) of <i>Phytophthora</i> (Mastigomycotina),
Week 10 (15th Sep-20 th Sep)	<i>Puccinia</i> (Basidiomycotina).
Week 11 (22 nd Sep-27 th Sep)	<i>Penicillium</i> (Ascomycotina) General account of Lichens.
	Assignment –I Test-I

October 2025

Week 12 (29th Sep-04 th Oct.)	UNIT: 4 Cell as a Unit of Life, Prokaryotic and Eukaryotic cells. Basic Structure and Function of Eukaryotic Cell Organelles : Cell Wall
Week 13 (6 th Oct. -11 th Oct.)	Basic Structure and Function of Eukaryotic Cell Organelles : Plasma Membrane, Nucleus,
Week 14 (13 th Oct – 18 th Oct)	Basic Structure and Function of Eukaryotic Cell Organelles Ribosome, Endoplasmic Reticulum
Week 15 (27 th Oct – 31 th Oct)	Basic Structure and Function of Eukaryotic Cell Organelles Chloroplast, Mitochondria.

November 2025

Week 16 (3 rd Nov– 8 th Nov.)	Cell Division: Mitosis
Week 17 (10th Nov- 15th Nov)	Cell Division: Meiosis.
Week 18 (17 th Nov-22 nd Nov)	Revision


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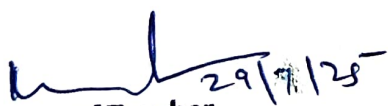
Name of Assistant/Associate Professor: Dr. Neelam Kumari

Class: B.Com. II- 3rd Sem.

Paper: Plants in Every Day Life (MDC) Course Code: C2MDC302T

Lesson Plan: 14th July to 24th Nov 2025

July 2025 & August 2025	
Weeks	Topic Covered
Week 1 (14 th to 19 th July)	Unit 1: Plant services to human in everyday life: Introduction to science of Botany
Week 2 (21 th July to 26 th July)	Plant resources in everyday life, Role of plants: Air purifier (photosynthesis);
Week 3 (28 th July to 2 nd Aug)	Plants used in rituals/festivals;
Week 4 (04 th Aug to 09 th Aug.)	Pollution control: Plants used in pollution control and Phytoremediation;
Week 5 (11 th Aug to 16 th Aug)	Pollution indicator (lichens),
Week 6 (18 th Aug to 23 rd Aug)	Nutrient source (litter manure, organic manure),
Week 7 (25 th Aug to 30 th Aug)	Aesthetic value of plants
Week 8 (1 st Sep to 6 th Sep)	Unit 2: Plant resources and utilization (brief description of plants and/or plant parts used), Cereals; Rice
Week 9 (8 th Sep – 13 th Sep)	Cereals; Wheat, Legumes; Bengal gram, (Chana)
Week 10 (15 th Sep-20 th Sep)	Legumes; Green gram (Mung) Soya bean, Spices; Turmeric
Week 11 (22 nd Sep-27 th Sep)	Beverages; Tea; Assignment – I Test-I
Week 12 (29 th Sep-04 th Oct.)	Medicinal plants; Tulsi, Neem, Giloy,
Week 13 (6 th Oct. -11 th Oct.)	Sugar yielding plant; Sugarcane
Week 14 (13 th Oct – 18 th Oct)	Edible oils; Groundnut
Week 15 (27 th Oct – 31 th Oct)	Edible oils; Mustard
Week 16 (3 rd Nov – 8 th Nov)	Fiber: Cotton
Week 17 (10 th Nov- 15 th Nov)	Jute
Week 18 (17 th Nov-22 nd Nov)	Revision


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