

<b>MAHARANA PRATAP MAHAVIDHYALAYA JUNGLE DHUSAR GORAKHPUR</b> <b>BOTANY DEPARTMENT</b> <b>SEM - 6th (Practicals)</b>				
Date	Lecture Number	Teacher's	Unit	Topic
17.01.2025	1	Dr.AKS/ Dr. AKG	I Cell biology	1. Study of plant cell structure with the help of epidermal peel mount of Onion/Rhoeo/Crinum 2. Measurement of cell size by the technique of micrometry.
18.01.2025	1	Dr.AKS/ Dr. AKG		3. Counting cells per unit volume with the help of haemocytometer (Yeast/pollen grains)
24.01.2025	2	Dr.AKS/ Dr. AKG		4. Determination of mitotic index and frequency of different mitotic stages in prefixed root tips of Allium cepa
25.01.2025	2	Dr.AKS/ Dr. AKG	II Genetics	1. Monohybrid cross (Dominance and incomplete dominance)      2. Dihybrid cross (Dominance and incomplete dominance)
31.01.2025	3	Dr.AKS/ Dr. AKG		3. Gene interactions (All types of gene interactions mentioned in the syllabus) a. Recessive epistasis 9: 3: 1. b. Dominant epistasis 12: 3: 1 c. Complementary genes 9: 7 d. Duplicate genes with cumulative effect 9: 6: 1 e. Inhibitory genes 13: 3
01.02.2025	4	Dr.AKS/ Dr. AKG		4. Observe the genetic variations among inter and intra specific plants. 5. Demonstration of Breeding techniques-Hybridization, case studies of mutation, polyploidy, emasculation experiment.
07.02.2025	5	Dr.AKS/ Dr. AKG	III Biostatistics	1. Univariate analysis of statistical data: Statistical tables, mean, mode, median, standard deviation and standard error (using seedling population / leaflet size).
08.02.2025	6	Dr.AKS/ Dr. AKG		2. Calculation of correlation coefficient values and finding out the probability. 3. Determination of goodness of fit in Mendelian and modified mono- and dihybrid ratios (3:1, 1:1, 9:3:3:1, 1:1:1:1, 9:7, 13:3, 15:1) by Chi-square analysis and comment on the nature of inheritance
14.02.2025	7	Dr.AKS/ Dr. AKG		3. Computer application in biostatistics - MS Excel at
15.02.2025	8	Dr.AKS/ Dr. AKG	IV Plant tissue culture	1. Familiarization of instruments and special equipments used in the plant tissue culture Experiments 2. Preparation of plant tissue culture medium, and sterilization, Preparation of stock solutions of nutrients for MS Media.

21.02.2025	8	Dr.AKS/ Dr. AKG		3.Surface sterilization of plant materials for inoculation (implantation in the medium) 4.Micropropagation of potato/tomato/ - Demonstration 5.Protoplast isolation and culturing – Demonstration
22.02.2025	9	Dr.AKS/ Dr. AKG		
28.02.2025			VEcology & Environment	1. Ecological Adaptations: Hydrophytes, Xerophytes, Halophytes, Epiphytes and Parasites
01.03.2025	10	Dr.AKS/ Dr. AKG		2. Study of morphological adaptations of hydrophytes and xerophytes (four each).
07.03.2025	11	Dr.AKS/ Dr. AKG		3. Study of biotic interactions of: Stem parasite (Cuscuta), Root parasite (Orobancha) Epiphytes, Predation (Insectivorous plants).
08.03.2025				4. Observation and study of different ecosystems mentioned in the syllabus. 5. Field visit to familiarize students with ecology of different sites
21.03.2025			VI Soil Formation Properties & Conservation	1. Determination of pH of various soil and water samples (pH meter, universal indicator/Lovibond comparator and pH paper)
22.04.2025	12	Dr.AKS/ Dr. AKG		2. Analysis for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency from two soil samples by rapid field tests
04.04.2025	13	Dr.AKS/ Dr. AKG		3. Determination of organic matter of different soil samples by Walkley & Black rapid titration method. 4. Soil Profile study 5. Soil types of India-Map
05.04.2025	14	Dr.AKS/ Dr. AKG	VII Biodiversity and Phytogeography:	1. Study of community structure by quadrat method and determination of (i) Minimal size of the quadrat, (ii) Frequency, density and abundance of components (to be done during excursion/field visit).
11.04.2025	15	Dr.AKS/ Dr. AKG		2. Marking of vegetation types of India, World & Uttar Pradesh on maps
12.04.2025	16	Dr.AKS/ Dr. AKG		3. Phytogeographical areas of India
19.04.2025	17	Dr.AKS/ Dr. AKG	VIII Pollution & Waste management	1. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter 2. Estimation of chloride and dissolved oxygen content in water sample

25.04.2025	18	Dr.AKS/ Dr. AKG		3. Comparative anatomical studies of leaves from polluted and less polluted areas. 4. Measurement of dissolved O <sub>2</sub> by azide modification of Winkler's method. 5. Determination of dissolved oxygen of water samples from polluted and unpolluted sources.
26.04.2025	19	Dr.AKS/ Dr. AKG		6. Microbiological assessment of drinking water using MPN technique- water from well, river, water supply department and packaged drinking water. 7. Making kitchen waste from compost/vermicompost by Enzymes/Bio decomposer/Whey with dung. Climate Change, Carbon Credits & Role of GIS. Conducting Waste Audit of your Institution - Demo 2. Green auditing of the College/University - Demo