



ARSD College, University of Delhi

Model Course Handout/Lesson Plan

CourseName: Generic Elective for Hons. Courses (CBCS) (Practical)						
Semester	Course Code	CourseTitle	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
IV	32165401	GE :Economic Botany and Biotechnology	0	0	2	6
Teacher/Instructor(s)		Dr. Anita Singh				
Session		2022-23				

CourseObjective:

- This paper will help the students to gain knowledge about economically important plants, their life cycle, processing, plant parts used, application of Biotechnology for the production of plant resources and production of new varieties.

CourseLearningOutcomes:

- Understanding the morphology, processing and economic values of plant sources of cereals, legumes, spices, oils, rubber, timber and medicines.

LessonPlan:

Unit No.	Learning Objective	Practical No.	Topics to be covered
1	Study of economically important plants : Wheat, Gram, Soybean, Black-pepper, Clove, Tea, Cotton and Groundnut through specimens, sections and micro-chemical tests	1	Wheat : Classification, General description, Morphology, Anatomy and uses. General description, classification, and uses of Soybean, tea and cotton.
		2	Black-pepper : Classification, General description, Morphology, Anatomy and uses
		3	Clove : Classification, General description, Morphology, Anatomy and uses
2	Familiarization with basic equipments in tissue culture	4	Study of basic equipment in tissue culture : Autoclave, Magnetic stirrer, pH meter, Laminar air flow.
3	Study through photographs	5	Anther culture : Culture medium, selection of right stage of anther, physiology of donor plant and Genotype of experimental material.
		6	Endosperm culture and Embryo culture and Micropropagation.
4	Study of molecular techniques through photographs	7	P.C.R : General description and application. Electrophoresis : types(AGE &PAGE), Gel preparation, sample preparation and chemical preparation.
		8	Blotting techniques : Southern, Northern and Western.

Assessment methods

The students are assessed on the basis of oral presentations and regular class tests.

1. Students are continuously assessed during practical classes.
2. Submission of class records is mandatory. This exercise develops scientific skill as well as methods of recording and presenting scientific data.

Evaluation scheme :

No.	Component	Duration	Marks
1.	InternalAssessment		25
	• ClassTest (10)		
	• Attendance (5)		
2.	EndSemesterExamination (Hands on)	4hr	25
		Total	50

SuggestedBooks:		
Sl.No.	Name of Authors/Books/Publishers	Year of Publication/Re print
1.	Kochhar,S.L (2011), Economic Botany in the Tropics, MacMillan Publishers India Ltd., New Delhi. 4 th edition	2011
2.	Bhojwani,S.S. and Razdan,M.K.,(1996), Plant Tissue Culture : Theory and practice. Elsevier Science Amsterdam. The Netherlands.	1996
3.	Glick,B.R., Pasternak,J.J. (2003) – Molecular Biotechnology – Principles and Applications of recombinant DNA . ASM Press, Washington.	2003

