BOMDC -124T: Applied Plant Sciences

Semester: II	Course Title: Applied Plant Sciences	Credits: 2
Course No.: BOMDC-124 T	MDC- T	Hours: 2/week

COs :

COs	COURSE OUTCOMES
CO1	Understand the importance of plants in human lives.
CO2	Remember names, uses, useful parts of important cereals, pulses and oil plants.
CO3	Understand and remember useful spices, condiments and important herbal plants.
CO4	Understand plant biotechnology, its two mainprocesses ,viz. Plant Tissue culture and Recombinant DNA Technology

CO-PO Mapping

	PO 1	PO 2	PO 3	PO 4
CO 1	1	2	1	
CO 2	1	1	1	
CO 3	1	2	1	
CO 4		1	2	

Unit	Detailed Syllabus	No. of Hours of Teaching
I	**Plants In Human Welfare** ● Cereals and Millet plants- Botanical and Vernacular name,Family, Useful parts, uses and brief description of cultivation of: **Wheat , Jowar** ● Pulses and Oil crops Botanical and Vernacular name,Family, Useful parts, uses and brief description of cultivation and processing of: **Pea, Groundnut** ● Vegetables and Fruits it, Habitat, Botanical name, Family, useful part and nutritional value Earth vegetable: **Carrot**; Herb vegetable: **Spinach**; Fruit vegetable: **Tomato** Fruits: 1. **Banana 2. Mango 3. Papaya** ● Spices and condiments Botanical name, family, useful part, chemical constituents and uses of: **Clove, Ginger, Cardamom, Cumin** ● Medicinal Plants Botanical name, family, useful part, chemical constituents and uses:	15

	Aloe, Neem, Tulsi, Ardusi General account of dyes and dye yielding plants General account of wood- Timber and Fuel yielding plants	
II	**Plant Biotechnology** ● Introduction, , Scope and Types of Plant Biotechnology. ● Application of Biotechnology in health and agriculture ● Plant Tissue Culture – Laboratory organization ● Tools & Instruments of PTC- Weighing balance, Oven, Water Distillation unit, Autoclave, Laminar Air Flow ● Technique of PTC- Sterilization, Media preparation, Inoculation ● Applications of Plant Tissue Culture in Agriculture and Industry ● Recombinant DNA Technology and its uses ● Synthetic Seeds & Edible Vaccines	15

Suggested Reading:

- Sen, S. 1992. *Economic Bota*ny, New Central Book Agency, Culcutta.
- Verma, V. 1974. *A Textbook of Economic Botany*, Emcay Publication, New Delhi.
- Kochar, S.L. 2011. *Economic Botany in the Tropics*, McMillan Publications, New Delhi.
- Hill, A. 1976. *Economic Botan*y, Tata McGraw Hill Publishing Co., Ltd., New Delhi.
- Bendre, A., Kumar, A. *Economic Botany*, Rastogi Publication, New Delhi. India.
- Sambhamurthy ,A.V.S.S &Subramamanian N.S.: A textbook of Economic botany, Wiley eastern ltd, New Delhi
- Introduction to plant tissue culture – M. K. Razdan, Oxford and IBH publishing Co. Pvt. Ltd., New Delhi.
- Introduction to Plant Biotechnology- H. S. Chawla, Oxford and IBH publishing Co. Pvt. Ltd., New Delhi.

BOMDC -124P: Botanymultidisciplinary-Practical

Semester: II	Course Title: Botany multidisciplinary practical 124	Credits: 2
Course No.: BOMDC -124P	BOMDC-P	Hours: 4/week

COs

COs	COURSE OUTCOMES
CO1	Learn to sketch various plant useful plant parts.
CO2	Learn about vegetables and fruits, their nutritional values
CO3	Understand and remember dye, timber and fuel yielding plants
CO4	Learn, remember and apply the various uses of biotechnology in current times

CO-PO Mapping

	PO 1	PO 2	PO 3	PO 4
CO 1	1	2	1	
CO 2	1	1	1	2
CO 3	1	2	1	3
CO 4		1	2	2

LIST OF PRACTICALS

Practical No.	Title of thePractical
1.	Study of Cereals and Millets- **Wheat, Jowar**
2.	Study of Pulses and Oil crops- **Pea and Groundnut**
3.	Study of Vegetables and Fruits- **Carrot, Spinach, Tomato**, **Banana, Mango, Papaya**
4.	Study of Spices and condiments- **Clove,** **Ginger,** **Cardamom,** **Cumin**
5.	Study of Medicinal Plants **Aloe** **Neem** **Tulsi** **Ardusi**

6.	General account of dyes and dye yielding plants
7.	General account of wood- Timber and Fuel yielding plants
8.	Laboratory organization in Plant Tissue Culture
9.	Basic Tools of PTC- Weighing balance, Oven, pH meter, Autoclave, laminar Air Flow
10.	Technique of PTC by chart
11.	Technique of Recombinnt DNA technology
12.	Study of Synthetic seeds, Edible vaccines
13.	Study of Edible vaccines
14.	Study of Biofertilizers
15.	Study of Biopesticides