# DEPARTMENT OF BOTANY Teaching Plan 2022-23 (ODD Semester) Dr. M.Arunjit Singh

## B.Sc. (H.) Botany 2nd Year, Sem III

#### Core Course Botany – Economic Botany (THEORY)

	Name of Papar & Code	Allocation	Month wise	Reading
	Name of Faper & Coue	of Lectures	schedule	suggestions
•	Unit 1.Origin of Cultivated Plants(4 lectures) Unit 2. Cereals (6 lectures)	10 lectures	26 <sup>th</sup> Aug – 5 <sup>th</sup> Sep	<ul> <li>Kochhar, S.L.</li> <li>(2012). Economic</li> <li>Botany in Tropics.</li> </ul>
•	Unit 3. Legumes (3 lectures): Unit 4. Fruits (3 lectures):	6 lectures	7 <sup>th</sup> – 22 <sup>nd</sup> Sep	New Delhi, India: MacMillan & Co Wickens, G.E. (2001). Economic Botany: Principles & Practices.The Netherlands: Kluwer
•	Unit 5. Sugars and Starches (5 lectures): Unit 6. Spices (6 lectures):	11 lectures	$23^{\text{th}}$ – $12^{\text{th}}$ Oct	
•	Unit 7. Beverages (4 lectures): Unit 8. Oils and fats (8 lectures):	12 lectures	$13^{\text{th}}-31^{\text{st}}$ Oct	
•	Unit 9. Essential Oils (4 lectures): Unit 10. Natural Rubber (3 lectures):	7 lectures	2 <sup>nd</sup> - 16 <sup>th</sup> Nov	Academic Publishers.
•	Unit 11. Drug-yielding plants (5 lectures): Unit 12. Tobacco (3 lectures):	8 lectures	17 <sup>th</sup> – 24 <sup>th</sup> Nov	
•	Unit 13. Fibers (6 lectures): Classification based on the origin of fibers;	6 lectures	24 <sup>th</sup> -28 <sup>th</sup> Nov	
•	Revision		Upto 19 <sup>th</sup> Dec	
•	Class test		December	

## B.Sc. (H.) Botany 2nd Year, Sem III

#### Core Course Botany – Economic Botany (Practical)

Topic (Practical)	Approximate (schedule)
1. Cereals: Wheat (habit sketch, L.S/T.S. grain, starch grains, micro-chemical tests), Rice (habit sketch, study of paddy and grain, starch grains, micro-chemical tests). Millets and Pseudocereals (specimens / photographs and grains)	August 2022
<ul> <li>2. Legumes: Soybean, Groundnut, (habit, fruit, seed structure, micro-chemical tests).</li> </ul>	September 2022
<ul> <li>B. Fruits: Mango (habit sketch, L.S. fruit, micro-chemical tests in ripe fruit); Citrus (habit sketch, T.S. hesperidium, W.M. vesicle, micro-chemical tests including test for vitamin C)</li> <li>B. Sugars and starches: Sugarcane (habit sketch; cane juice- micro-chemical tests); Potato (habit sketch, tuber morphology, T.S. tuber to show localization of starch grains, W.M. starch grains, micro-chemical tests).</li> <li>G. Spices: Black pepper, Fennel and Clove (habit and sections L.S./T.S.). 6.</li> <li>Beverages: Tea (plant specimen, tea leaves), Coffee (plant specimen, beans).</li> <li>O. Oils and fats: Coconut- T.S. nut, Mustard–plant specimen, seeds</li> <li>Essential oil-yielding plants: Habit sketch of Rosa, Vetiveria, Santalum and Eucalyptus (specimen, photographs).</li> <li>Rubber: specimen, photograph/model of tapping, samples of rubber products.</li> <li>D. Drug-yielding plants: Specimens of Cinchona, Digitalis, Papaver and Cannabis (male &amp; female plant).</li> <li>Tobacco: specimen and products of Tobacco.</li> <li>Fiber-yielding plants: Cotton (specimen, whole mount of seed to show lint to specimen.</li> </ul>	September 2022
	September 2022
	September 2022 October 2022
	October 2022 October 2022
	October 2022
	November 2022
and fuzz; whole mount of fiber and test for cellulose), Jute (specimen, transverse section of stem, test for cellulose and lignin on transverse section of	November 2022
stem and fiber)	November 2022
Mock Test and Revision of selected topics	December 2022

## B.Sc. (Life-Science) 3rd Year, Sem V

## Paper – CELL AND MOLECULAR BIOLOGY (PRACTICAL) (DSE)

	Allocation	Month	Reading
Topics	of	wise	suggestions
	Lectures	schedule	
Demonstration of dialysis of starch and simple sugar	4	August	
Study of plasmolysis and deplasmolysis on Rhoeo leaf	4	August	
Study of the photomicrographs or cell organdies	4	August	
Study of mitosis and meiosis (temporary mounts and permanent slides).	4	August	
Study the effect of temperature on semi permeable membrane.	4	September	
Preparation of the karyotype and ideogram from given photograph of		September	
somatic	4		
Study DNA packaging by micrographs		September	Laboratory
Study the effect of organic solvent on semi permeable membrane.	4	September	Manual of Cell
To study the structure of animal cells by temporary mounts-squamous		September	Biology by
epithelial cell			Rina
To prepare temporary stained preparation of mitochondria from striated	4	October	Majumdar
muscle cells /cheek epithelial cells using vital stain Janus green			And Rama
Measure the cell size (either length or breadth/diameter) by micrometry	4	October	Sisodia
To study the structure of plant cell through temporary mounts	4	October	
To study prokaryotic cells (bacteria), viruses, eukaryotic cells with the		November	
help of light and electron micrographs			
Study the structure of nuclear pore complex by photograph (from Gerald	л		
Karp)	4		
Study of special chromosomes polytene & lampbrush) either by slides or			
photographs			
Revision and Class test		December	