PROPOSED SYBSC SYLLABUS FOR ACADEMIC YEAR 2017-18

Course Code	Title	Credits
USBO303	CURRENT TRENDS IN PLANT SCIENCES I	2 Credits (45 lectures)
 Unit1: Pharmacognosy and phytochemistry Introduction to pharmacopoeia Indian pharmacopoeia, Indian Herbal Pharmacopoeia and Ayurvedic Pharmacopoeia Study of Monograph from pharmacopoeia Secondary Metabolites: Sources, properties, uses and adulterants, regional and seasonal variations Adulterants: Saraca asoca, Polyalthia longifolia Terminalia arjuna, Terminalia tomentosa Bacopa monnieri, Centella asiatica Abrus, Glycyrrhiza Phyllanthus amarus (Bhuiamla) 		15 Lectures
 Unit 2: Forestry and Economic Botany Forestry: Outline of types of forest in India Forestry: Agro-forestry, Urban forestry, organic farming, Silviculture Economic Botany: Types of fibers: Jute and cotton, Current trends in Fiber industries Spices and condiments: Saffron and cardamom Commercial market of spices 		15 Lectures
 Aromathera Jojoba, le Botanical an <i>Garcinia can</i> 	y based on plant products py- Introduction, Uses with few examples. emon, jasmin d nutraceuticals - <i>Spirulina, Vanillin, Garcinia indica/</i> <i>nbogia, Chlorella,</i> and <i>Kale.</i> dustry: Cellulases, Papain, Bromelain	15 Lectures

SimaPillari

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	Semester III USBOP3 PRACTICAL - Paper III CURRENT TRENDS IN PLANT SCIENCES I	Cr 1
1	Study of <i>Phyllanthus amarus</i>	
	Saraca asoka	
	Bacopa monieri	
2	Study of biodiversity	
	(Visit to National Park/ Botanical Garden)	
	Sources of : Fibres & Paper	
	Spices & condiments	
	Preparation of herbal cosmetics (Face pack/ De-tanning cream)	
3	Estimation of crude fibre in cereals & their products	
4	Preparation & evaluation of probiotic foods	
5	Evaluation of nutraceutical value of mushroom/ wheat germ	

Course Code	Title	Credits	
USBO403	CURRENT TRENDS IN PLANT SCIENCES I	2 Credits (45 lectures)	
		(+5 10000105)	
Unit I : Horticulture and Gardening Introduction to Horticulture: Branches of Horticulture Gardening:15 Lecture• Locations in the garden- edges, hedges, lawn, flower beds, avenue, water garden (with names of two plants for each category). Focal point.15 Lecture• Types of garden o Formal and informal gardens o National Park: Sanjay Gandhi National Park. o Botanical Garden: Veer Mata JijabaiUdyan (Victoria15 Lecture			
Garden). <u>Unit II : Biotechnology</u>		15 Lectures	
• Introdu			
 Labor culture 			
 Totip Organ			
o Org	an culture – root cultures, meristem cultures, her and pollen culture, embryo culture.		
	R-DNA technology-		
○ Gene cloning			
 Enzymes involved in Gene cloning Vectors used for Gene cloning. 			
	157		
Unit III : Biostatistics and Bioinformatics		15 Lectures	
Biostatistics: O The chi square test.			
o (Correlation – Calculation of coefficient of correlation.		
	prmatics \circ Information technology: History and		
	IT, Internet and its uses.		

Introduction to Bioinformatics- goal, need, scope and limitation
 Aims of Bioinformatics: Data organization, Tools of Bioinformatics- tools for web search, Data retrieval tools- Entrez,
 BLAST
 Bioinformatics programme in India.

Semester III USBOP3 Cr 1 PRACTICAL - Paper III CURRENT TRENDS IN PLANT SCIENCES I

Horticulture

- 1 Study of five examples of plants for each of the garden locations as prescribed for theory
- 2 Preparation of garden plans formal and informal gardens
- 3 Bottle and dish garden preparation.

Biotechnology

- 4 Various sterilization techniques
- 5 Preparation of Stock solutions, Preparation of MS medium.
- 6 Seed sterilization, callus induction
- 7 Regeneration of plantlet from callus.
- 8 Identification of the cloning vectors pBR322, pUC 18, Ti plasmid.

Biostatistics and Bioinformatics

- 9 Chi square test
- 10 Calculation of coefficient of correlation
- 11 Web Search Google, Entrez.
- 12 BLAST