

Mahatma Gandhi Vidyamandir's Loknete Vyankatrao Hiray Arts, Science and Commerce College, Panchavati, Nashik-422003 (Affiliated to SPPU, Pune, Reaccredited with 'A' grade, Recipient of Best College Award by SPPU)

Programme Specific Outcomes, & Course Outcomes of M.Sc.

Department of Botany

Academic Year

2021-22

Programme Specific Outcomes: M.SC. Botany(PSB)

Name of the Department : Botany			
Program S	Program Specific Outcomes		
At the end of the programme, student will be able to			
1	Demonstrate and Understanding of principles and theories of Botany.		
2	Apply knowledge of Botany for entrepreneurship through nursery development, landscape gardening, herbal medicinal plant industry, mushroom cultivation.		
3	Demonstrate ability to apply knowledge of the diversity of plants in the context of various disciplines of botany.		
4	Take research work at the higher degree level in the field		
5	Hands on training in various fields will develop practical skill, handling equipment		
6	Provides entrepreneurship skill development for small scale start up		

Course Outcomes: M.Sc.-I Botany(PSB)

PaperCourse code & course titleAt the end of the course, student will be able toPaper& course titleAt the end of the course, student will be able toPSB (BOUT 111) Plant systematicsDescribe and define various terminology and concept of plant systematicsPSB (BOUT 111) Plant systematicsDemonstrate and examine morphological and anatomical features Distinguish and compare characters of lower plants Summarize the economic importance of lower reptogams Propose the life cycles of various aspects of cell biology and evolution Discuss features and organisation of cell Illustrate cellular signalling and trafficking Compare and contrast various cellular processes Summarize genome instability and cell transformation Design evolutionary time scaleIIIPSB (BOUT 113) CytogeneticsSummarise Concept and methods of plant breeding Illustrate the methods of hybridisation Compare and contrast classical genetics, microbial genetics and cytogeneticsVIPSB (BODT 114)Pomoculture Evaluate hard categorise plant genetic resources Organize linkage and recombinationVIPSB (BODT 114) PracticalCompare various methods of propagation Evaluate processing technologyVPSB (BODT 114) PracticalEvaluate processing technologyVIPSB (BODT 114) PracticalDescribe, recognise different fruit processing technologyVPSB (BODT 114) PracticalDescribe, recognise different fruit processing technologyVPSB (BODT 114) PracticalDescribe, recognise different fruit processing technologyVPSB (BODT 114) PracticalDescribe, recognise different fruit processi	Class : M.Sc1		
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V Discuss and explain different harvesting technology		DSB (DODT	Describe, recognise different fruit processing technology
Demonstrate any one by-product of wastes of fruits	V	·	Discuss and explain different harvesting technology
		114) Practical	Demonstrate any one by-product of wastes of fruits

	Based on	Compare methods of Pruning and training of fruit plants
	BODT 114:	Estimate maturity in locally growing fruit plants
		Develop jam, Jelly, Marmalade from locally available fruits
	PSB (BOUP 115) Practical	Describe morphological, anatomical and reproductive structures of lower cryptogams
	based on	Classify plants on the basis of different systems of classification
VI	BOUT 111,	Demonstrate isolation of various cell organelles and their relevant estimation
	,	Investigate different plant fossils and geological time scale
	BOUT 112 & BOUT 113	Estimate gene and genotypic frequencies
		Organise induced cell senescence
		Semester-II
		Describe and memorise characteristics of pteridophytes
		Recognise orders of pteridophytes
	PSB (BOUT	Classify gymnosperms by Raizada and Sahani (1996)
Ι	121) Plants	Distinguish between Gymnosperm and Angiosperms
	Systematics II	Summarise characteristics features of Pteridophytes, Angiosperms &
		Gymnosperms
		Arrange phases of plant classification
		Define and describe Molecular biology
		Explain techniques and tools in molecular biology
	PSB (BOUT 122) Molecular	Write structure and functions of DNA
II	Biology	Distinguish and differentiate between minor and major techniques in
		molecular biology
		Compare between Genomics and proteomics
		Generalise concept and importance of gene regulation
		Define and describe fundamental aspects of biochemistry
	PSB (BOUT123) Biochemistry	Discuss and classify biomolecules of biochemistry
TTT		Demonstrate phytochemical extraction
III		Classify and describe proteins
		Estimation of different biomolecules
		Invent and compose in phytochemistry
		Define and describe
IV	PSB (BODT	floriculture
	124)	Classify and summarise horticultural practices

	Floriculture	Demonstrate growing media for plant growth
	and Nursery	Distinguish and compare between floriculture and nursery management
	Management	Select and summarise steps of producing plants from seed
		Design different types of nurseries
	PSB (BODP	Define and describe methods pf post harvesting technology
	124) Practical	Discuss and explain different special cultural practices for flower crop
	based on	Demonstrate and experiment on grafting and budding methods
V	BODT 124	Categorise different methods of seed germination
	Floriculture	Revise and summarise propagation and planting-pruning management
	and Nursery	Design and construct bed for nursery
	Management	
	PSB (BOUP	List and memorise plant families as per Bentham & Hooker's system
	125)	Recognise and classify of plant families on the morphological basis
	Practical	Illustrate and write isolation & quantification of plant genomic DNA
VI	based on	Test & contrast, investigate seed storage proteins from legumes
	BOUT	Estimate protein by Lowry and Bradford methods
	121,122	Formulate preparation of solutions & buffers
	&123	

Class : M.Sc. Botany -II			
	Semester-III		
Paper	Course code & course title	At the end of the course, student will be able to	
1	PSB (BOUT 231) Computational Botany	Describe, define and tabulate different statistical methodsClassify and Explain statistical techniquesDemonstrate, Apply and Examine statistical techniquesDistinguish and Categorise different technique of statistics, scientificCommunication and Bioanalytical techniquesCompare and Estimate different statistical and bioanalytical techniquesGeneralised, Create and Formulate computational techniques	
2	PSB (BOUT 232)	Describe and Define concept of developmental Botany Discuss and Classify different developmental stages of embryology	

	Developmental	Demonstrate, Classify and Examine different stages of plant
	Botany	Development
		Distinguish and Differentiate sequence of plant development
		Summarise and Evaluate different Techniques and characteristics of
		morphogenesis
		Generalise different terms and developmental Stages of plant
		development
		Describe, Define able to understand the various physiological life
		processes in plants
	PSB(BOUT	Summarize, describe and distinguish of mechanisms of physiological
	233)	phenomenon in plants
3		Demonstration, examine and classify about various mechanisms of
	Plant Physiology	growth, development and functioning of plants
		Differentiate and Compare physiological processes of plants
		Summarise physiological phenomenon
		Generalise different mechanism of plant physiological processes
		Describe and Define various ecological terms
	PSB (BODT	Clarify and Discuss ecological phenomenon
4	234)	Relate and Classify ecological concepts
·	Plant Ecology	Distinguish and compare different types of ecology
	Thank Deology	Evaluate and Estimate general and applied ecology
		Generalise and Derive Ecological phenomenon
		Semester-IV
		Describe and define various botanical techniques and bioinformatical
		terms
	PSB (BOUT	Compare and explain different botanical techniques
1	241) Botanical	Demonstrate and examine several botanical techniques
	Techniques	Distinguish and compare various botanical techniques
		Discriminate and summarise different botanical techniques
		Formulate and organise different botanical techniques
2	PSB (BOUT	Describe and state various advanced plant ecological terms
	242)	Classify and review on basic and advanced ecological phenomenon
	2:2)	Illustrate and Examine concepts of advanced ecology

	Advanced Plant	Distinguish, Investigate and debate on biodiversity and its
	Ecology	conservation
		Evaluate and revise the ecology via various aspects
		Compose and formulate various advanced ecological phenomenon
		Define and Describe Pharmacognosy, various plant drug types
	PSB (BODT	Discuss and clarify advanced medicinal phenomenon
3	243) Advanced	Relate and examine pharmacogenetic techniques
5	Medicinal	Distinguish and inspect advanced medicinal techniques
	Botany	Compare and summarise advanced medicinal botany
		Derive and generalise advanced pharmacognostic study.
_		Define and state herbal technology and Herbal Nutraceuticals
		Discuss and Estimate Herbal medicines and Nutraceuticals
	PSB (BODT	Examine and relate Herbal technology, Nutraceuticals, Drug Industry
4	244) Herbal	& Herbal Products
-	Technology	Differentiate and compare various ayurvedic terms
	recimology	Estimate and discriminate Cosmeceuticals, Nutraceuticals along with
		various drug types
		Generalise and formulate various legal rights such patenting, IPR
		Define terminology of research methodology
	PSB	Describe technique of micro-biotechnique of plants
	(BODP244)	Give poster presentation
	PG Dissertation	Demonstrate and identified types of research
		Analysis of statistical test
		Demonstrated plagiarism and bibliography
	PSB (BOUP	Explain, classify and handling of botanical techniques
	245)	Estimate and demonstration of the plant contents ,plant diversity
	Botany	Summarise and categorized ecological parameters, types of ecosystem
	Practical paper	Calculate and analysis of water bodies, soil contents, stomatal index
	based on	Compare and summarized ecological parameters
	BOUT241 and BOUT242	Formulate and generalise component of ecosystem
	BUU1242	