

Arts, Science and Commerce College, Indapur, Dist. Pune
TEACHING AND EVALUATION PLAN

Year: 2021-2022

Name of the teacher: Dr. Mahadik B. B.

Semester: I

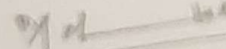
Class: S.Y.B.Sc.

Subject: Taxonomy of Angiosperms and Plant Ecology

Paper: I

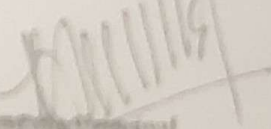
Part I : Teaching Plan						Part II : Evaluation of Plan			
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov 2020	3 & 4	9	7	Introduction to Angiosperms Taxonomy Definition, scope, objectives and importance of taxonomy Identification, Nomenclature and classification Systems of classification Comparative account of various systems of classification Artificial system: Carl Linnaeus Natural system: Bentham and Hooker Phylogenetic system: Engler and Prantl APG system: A brief review	07	Introduction to Angiosperms Taxonomy Definition, scope, objectives and importance of taxonomy Identification, Nomenclature and classification Systems of classification Comparative account of various systems of classification Artificial system: Carl Linnaeus Natural system: Bentham and Hooker Phylogenetic system: Engler and Prantl APG system: A brief review	Nil	
2	Dec 2020	1 & 2	12	8	Study of Plant Families Study of following families with reference to systematic position (As per Bentham and Hooker's system of classification), salient features, floral formula, floral diagram and any five	08	Study of Plant Families Study of following families with reference to systematic position (As per Bentham and Hooker's system of classification), salient features, floral formula, floral diagram and any five	Nil	

					any five examples with their economic importance – Annonaceae, Brassicaceae, Myrtaceae, Rubiaceae, Solanaceae, Apocynaceae, Nymphaeaceae and Amaryllidaceae			examples with their economic importance – Annonaceae, Brassicaceae, Myrtaceae, Rubiaceae, Solanaceae, Apocynaceae, Nymphaeaceae and Amaryllidaceae		
3	Dec 2020	3 & 4	11	5	Botanical Nomenclature Concept of nomenclature, brief history, Binomial nomenclature International Code for Nomenclature	05		Botanical Nomenclature Concept of nomenclature, brief history, Binomial nomenclature International Code for Nomenclature	1	Extra lecture was conducted on sundry
4	January 2021	1 & 2	11	8	Introduction to ecology Definition, concept, scope, Species Diversity: Alpha, Beta and Gamma diversity Methods of vegetation sampling: quadrat method, transect method, plot less method Genetic Diversity: Species Diversity: Ecosystem Diversity Hotspots in India –	2		Introduction to ecology Definition, concept, scope, Species diversity: Alpha, Beta and Gamma diversity Methods of vegetation sampling: quadrat method, transect method, plot less method Genetic Diversity: Species Diversity: Ecosystem Diversity Hotspots in India –	Nil	
5	January 2021	3 & 4	12	4	Ecological grouping of the plants a) Hydrophytes, b) Mesophytes c) Xerophytes d) Halophytes with examples.	04		Ecological grouping of the plants a) Hydrophytes, b) Mesophytes c) Xerophytes d) Halophytes with examples.	Nil	


Signature of Teacher


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Department of Botany
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Science Faculty
Arts, Science & Commerce
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Part I : Teaching Plan						Part II : Evaluation of Plan			
1 Sr. No.	2 Month	3 Week	4 No. of working days	5 No. of periods available	6 Topics to be taught	7 No. of periods engaged	8 Topics taught	9 Deviation in periods	10 Remarks
1	July 2021	2 & 4	11	8	Introduction Definition, Scope of plant anatomy Epidermal tissue system Structure, types and functions of epidermis, Stomata Epidermal outgrowths- Mechanical tissue system a) Inflexibility, b) Incompressibility, c) Inextensibility and d) Shearing stress 3.2 Vascular tissue system: Structure and function of xylem, phloem and cambium	8	Introduction Definition, Scope of plant anatomy Epidermal tissue system Structure, types and functions of epidermis, Stomata Epidermal outgrowths- Mechanical tissue system a) Inflexibility, b) Incompressibility, c) Inextensibility and d) Shearing stress 3.2 Vascular tissue system: Structure and function of xylem, phloem and cambium	Nil	-
2	August 2021	1 & 2	11	7	Normal secondary growth Introduction Normal secondary growth in dicotyledonous stem Development of annual rings, pith, bark, tyloses and lenticel Abnormal secondary growth Introduction Causes of anomalous secondary growth Anomalous secondary growth in:	7	Normal secondary growth Introduction Normal secondary growth in dicotyledonous stem Development of annual rings, pith, bark, tyloses and lenticel Abnormal secondary growth Introduction Causes of anomalous secondary growth Anomalous secondary growth in:	1	Extra lecture was conducted

1 & 2	12	5	Plant Embryology introduction Microsporangium and male gametophyte tetrasporangiate anther Types of tapetum Sporogenous tissue Microsporogenesis Types of microspore tetrad Male gametophyte: structure and development of male gametophyte	3	Plant Embryology introduction Microsporangium and male gametophyte tetrasporangiate anther Types of tapetum Sporogenous tissue Microsporogenesis Types of microspore tetrad Male gametophyte: structure and development of male gametophyte	Nil	
1 & 4	12	4	Megasporangium and female gametophyte Structure Types of ovules Types of megaspore tetrads Female gametophyte: structure of typical embryo sac Types of embryo sacs - monosporic, bisporic and tetrasporic	4	Megasporangium and female gametophyte Structure Types of ovules Types of megaspore tetrads Female gametophyte: structure of typical embryo sac Types of embryo sacs - monosporic, bisporic and tetrasporic		
1 & 6	12	6	Pollination and Fertilization: Introduction and definition Types of pollination Germination of pollen grain Entry of pollen tube: porogamy, mesogamy and chalazogamy Double fertilization and its significance. Endosperm and embryo	9	Pollination and Fertilization: Introduction and definition Types of pollination Germination of pollen grain Entry of pollen tube: porogamy, mesogamy and chalazogamy Double fertilization and its significance. Endosperm and embryo		Extra lecture was conducted

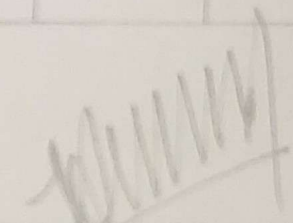
Endosperm: Types - nuclear,
helobial and cellular. Structure of
Dicotyledonous and
Monocotyledonous embryos

Endosperm: Types - nuclear, helobial
and cellular. Structure of
Dicotyledonous and
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Name of the teacher: Dr. Subramanian P.S.

Year: 2021-2022

Semester: I

Subject: Plant Physiology

Paper: II

Class: S.V.B. Sc

Part I : Teaching Plan					Part II : Evaluation of Plan				
1	2	3	4	5	6	7	8	9	10
Sr. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
1	Nov 2020	3 & 4	9	8	Introduction to Plant Physiology 1. Introduction and Scope 2. Applications of plant physiology Absorption of water 1. Role of water in plants 2. Mechanisms of water absorption with respect to crop plants 3. Factors affecting rate of water absorption Ascent of sap 1. Introduction and definition. 2. Transpiration pull or cohesion-tension theory, evidences and objections 3. Factors affecting ascent of sap	8	Introduction to Plant Physiology 1. Introduction and Scope 2. Applications of plant physiology Absorption of water 1. Role of water in plants 2. Mechanisms of water absorption with respect to crop plants 3. Factors affecting rate of water absorption Ascent of sap 1. Introduction and definition. 2. Transpiration pull or cohesion-tension theory, evidences and objections 3. Factors affecting ascent of sap	Nil	--
2	Dec 2020	1 & 2	12	6	Seed dormancy and germination 1. Definition, types of seed dormancy and germination 2. Methods to break seed dormancy 3. Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor	7	Seed dormancy and germination 1. Definition, types of seed dormancy and germination 2. Methods to break seed dormancy 3. Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor Index	Nil	--

			3. Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor Index Physiology of flowering 1. Photoperiodism – Concept, definition, short day plants, long day plants and day neutral plants. 2. Phytohormone theory, role of phytohormones in induction and inhibition of flowering 3. Applications of photoperiodism 4. Vernalization-concept and definition, mechanism of vernalization, applications of vernalization and devernalization	3. Metabolic changes during seed germination 4. Role of phytohormones to improve seed germination & Vigor Index Physiology of flowering 1. Photoperiodism – Concept, definition, short day plants, long day plants and day neutral plants. 2. Phytohormone theory, role of phytohormones in induction and inhibition of flowering 3. Applications of photoperiodism 4. Vernalization-concept and definition, mechanism of vernalization, applications of vernalization and devernalization	
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Signature of Teacher


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Science Faculty
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Semester III

Paper III : Plant Biotechnology

Year : 2021-2022

Part I : Teaching Plan					Part II : Evaluation of Plan				
1	2	3	4	5	6	7	8	9	10
S. No.	Month	Week	No. of working days	No. of periods available	Topics to be taught	No. of periods engaged	Topics taught	Deviation in periods	Remarks
	March 2021	3 & 4	11	3	Introduction to Plant Biotechnology 1. History and definition 2. Scope and importance of plant biotechnology 3. Current status of biotechnology in India Structure and function of xylem, phloem and cambium	3	Introduction to Plant Biotechnology 1. History and definition 2. Scope and importance of plant biotechnology 3. Current status of biotechnology in India Structure and function of xylem, phloem and cambium	Nil	
	April 2021	1 & 2	11	8	Plant Tissue Culture 1 Concept of plant tissue culture and cellular totipotency 2 Basic techniques: Types of culture 3 Media preparation, sterilization, inoculation & incubation 4 Hardening and Applications with reference to: Micropropagation 5. Somatic cell variation & Haploid production 6. Protoplast fusion & Somatic hybrids 7. Embryo rescue & Production of secondary metabolites	9	Plant Tissue Culture 1 Concept of plant tissue culture and cellular totipotency 2 Basic techniques: Types of culture 3 Media preparation, sterilization, inoculation & incubation 4 Hardening and Applications with reference to: Micropropagation 5. Somatic cell variation & Haploid production 6. Protoplast fusion & Somatic hybrids 7. Embryo rescue & Production of secondary metabolites 8. Commercial Plant Tissue culture laboratories in Maharashtra and India.	1	Extra lecture was conducted

					8. Commercial Plant Tissue culture laboratories in Maharashtra and India.			
					Single Cell Protein (SCP) 1. Concept and definition 2. Importance of proteins in diet 3. Production of SCP from <i>Spirulina</i> and Yeast 4. Importance & acceptability of SCP Plant Genetic Engineering 1. Introduction, concept 2. Tools of genetic engineering (restriction enzymes, ligases, plasmid vectors) 3. Gene cloning Technique 4. Applications of plant genetic engineering: insect pest resistance, 5. Abiotic stress tolerance & herbicide resistance			
3	April 2021	3 & 4	12	9		4	1	Extra Lecture
					Genomics, Proteomics and Bioinformatics 1. Genomics- concept & types, 2. Methods used for whole genome sequencing 3. Proteomics-concept, types 4. Methods used in proteome analysis 5. Bioinformatics-concept, database and its classification, data retrieval tools.			
4	May 2021	3 & 4	12	5		5		

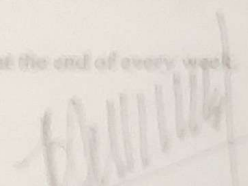
					Bioremediation 1. Introduction and concept, Microbial remediation 2. Phytoremediation Biofuel technology 1. Definition, Concept and types of Renewable and nonrenewable energy sources 2. Definition and concept of Biogas, Bioethanol & Biobutanol. 3. Biodiesel & Biohydrogen				Bioremediation 1. Introduction and concept, Microbial remediation 2. Phytoremediation Biofuel technology 1. Definition, Concept and types of Renewable and nonrenewable energy sources 2. Definition and concept of Biogas, Bioethanol & Biobutanol. 3. Biodiesel & Biohydrogen			Extra lecture was conducted
5	May 2021	2	12	5								

1. The plan should be prepared in duplicate.
2. One copy of the plan should be submitted at the beginning of the term after filling up columns 1 to 6.
3. The second copy must be retained by the teacher and submitted at the end of the term. Part second of the plan i.e. columns 7 to 10 must be filled up progressively at the end of every week.


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