

Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Structured Work Plan for Teaching (Jun – 2019 to Oct. 2019)

Details of Classes to be taught

Sr. No.	Class	Name of Assit. Prof.	Subject	Paper
1	B.Sc.II	Prof. S. N. Shinde/ G. A. Suryawanshi	Botany	Morphology and Taxonomy of Angiosperms
2	M.Sc.II			Plant Pathology-I

Summary of Lesson Plan:

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures
1	Unit-I: Morphology of Angiosperms-I (10 L):	1. Root: Definition, characters, types (taproot and adventitious) and functions. 2. Stem: Definition, characters, modifications (stem tendril, runner, and rhizome) and functions. 3. Leaf: Definition, structure of typical leaf (Hibiscus), Types of leaf apex and margin, Functions, Types, Phyllotaxy and Venation.	04/07/19 To 27/07/19	05 05
2	Unit-II Morphology of Angiosperms-II (10 L):	1. Inflorescence: Definition, structure of typical inflorescence Types- Racemose and Cymose. 2. Flower: Definition, structure of typical flower (Hibiscus), symmetry and types (hypogynous, epigynous, perigynous). 3. Fruit: Definition and its Types.	01/08/19 To 31/08/19	12
3	Unit-III: Taxonomy of Angiosperms (12 L):	1. Introduction, 2. Scope and objectives of angiosperm taxonomy. 3. Botanical Survey of India (BSI). 4. Binomial nomenclature, 5. Chemotaxonomy and Cytotaxonomy. 6. Taxonomic ranks. 7. Types of classification	05/09/19	05 05

		(artificial, natural and phylogenetic) 8. Bentham & Hooker's system of classification with merits and demerits.	To 26/09/19	
4	Unit-IV: Study of families (13 L):	Distribution, vegetative morphology (habitat, habit, root, stem, leaf), Reproductive morphology (inflorescence, flower, pollination, fruit) Floral Formula, Floral Diagram, Systematic position (as per Bentham & Hooker system) Distinguishing characters and Economic importance of plants (at least two) of the following families: 1. Brassicaceae. 2. Fabaceae. 3. Solanaceae. 4. Lamiaceae. 5. Euphorbiaceae. 6. Poaceae.	27/09/19 To 24/10/19	06 07

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M. Sc.II

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures
1	Credit- I: Introduction to Plant Pathology:	<p>1. Scope and Importance of Plant Pathology; Contributions of E.F .Smith E. C.S Takman, S. D. Garrett, E. J. Butler, K. C. Mehta, M. J .Thirumalachar, in the field of plant pathology.</p> <p>2. Development of Plant Pathology as a Profession, Careers in Plant Pathology, The Practice and Practitioners of Plant Pathology. Certification of Professional Plant Pathologists .Plant Pathology as a Part of Plant Medicine; the Doctor of Plant Medicine Program.</p> <p>3. Aerobiology: Scope and applications of aerobiology. Airborne pathogens, Methods for detection of Aerospora.</p> <p>4. Methods in plant pathology.</p> <p>5. Biopesticides</p>	04/07/19 To 27/07/19	05 05
2	Credit - II: Diseases of crop plants – I:	<p>History, symptomology, causal organism, etiology and management of:</p> <p>1. Rice: - Blast disease.</p> <p>2. Jowar :- Leaf Spot</p> <p>3. Rice:- Bacterial blight</p> <p>4. Pigeon pea :- Leaf Spot</p> <p>5. Tomato: - Early Blight.</p> <p>6. Bhenidi :- Powdery Mildew</p> <p>7. Brinjal: - Leaf Spot.</p> <p>8. Chilly: - Anthracnose.</p> <p>9. Bean Mosaic</p> <p>10. Soybean: - Rust.</p> <p>11. Brinjal: - Little leaf.</p> <p>Cotton: Stenosis</p>	01/08/19 To 31/08/19	12

3	Credit- III: Disease of crop plants – II:	(History, symptomology, causal organism, etiology and management of) 1. Banana: - Panama disease. 2. Grapes: - Powdery Mildew. 3. Green gram: - Leaf spot 4. Citrus: - Greening disease. 5. Sugarcane: - Grassy Shoot. 6. Cotton: - Root rot. 7. Sunflower: - Rust. 8. Groundnut :- Rust 9. Sesamum :- Blight, Leaf Spot 10.Green gram: - Powdery mildew. 11.Sesamum: phyllody	05/09/19 To 26/09/19	05 05
4	Credit- IV: Host resistance, Disease management and control of diseases:	1. Plant defenses: Non-host and host resistance. 2. Pre-existing and induced structural and chemical defenses. 3. Defense signaling network: R genes, role MAPK cascade, Transcription factors and PRPs. 4. Pathogenicity genes, avirulence genes, effector molecules. 5. Diagnostic methods for detecting pathogens. 6. Control of disease using fungicides and other chemicals. 7. Biocontrol agents for controlling disease. 8. Disease control using biological and chemical activators of resistance.	27/09/19 To 24/10/19	06 07

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Structured Work Plan for Teaching (Dec – 2019 to March. 2020)

Details of Classes to be taught

Sr. No.	Class	Name of Assit. Prof.	Subject	Paper
1	B.Sc.II	G. A. Suryawanshi	Botany	Paper-VIII Plant Breeding and Biotechnology
2	M.Sc.II			Plant Pathology-III

Summary of Lesson Plan:

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures
1	Unit-I: PLANT BREEDING-I (10L)	1. Definition, Aims and Objectives 2. Centres of origin. 3. Methods of Plant Breeding: i. Plant introduction and acclimatization. ii. Mass Selection. iii. Pure line selection. iv. Clonal selection. v. Pedigree selection.	11/12/19 To 26/12/20	
2	Unit-II: PLANT BREEDING- II. (10L)	1. Hybridization. 2. Heterosis and hybrid vigour. 3. Mutation breeding. 4. Polyploidy. 5. Breeding in cotton	11/12/19 To 09/01/20	
3	UNIT-III: BIOTECHNO LOGY – I (13)	1. Genetic Engineering: i. Definition, scope and importance ii. Tools: a) Restriction Endonucleases b) Vectors: plasmids, cosmids. iii. Technique of r-DNA iv. Genomic and c-DNA libraries 2. Agrobacterium mediated gene transfer: (Biology of <i>Agrobacterium</i>, Ti - plasmid and <i>Agrobacterium</i> mediated transfer	14/01/20 To 03/03/20	

		technique), 1. Transgenic plants.		
4	UNIT -IV: BIOTECHNO LOGY - II (12)	1.Tissue culture: <ul style="list-style-type: none"> i. Introduction, ii. Concept of Totipotency of cell, iii. Basic aspects of tissue culture laboratory, iv. Technique of tissue culture v. Callus culture, differentiation and morphogenesis. 2.Applications of Tissue culture: <ul style="list-style-type: none"> i. Micropropagation, ii. Production of secondary metabolites, iii. Somatic hybridization, iv. Anther culture and production of haploids. 	05/03/20 To 31/01/20	

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures
1.	Credit I: Effect of environment on pathogenesis: (15L)	<p>1. Effect of environment, temperature, moisture, humidity, shade, wind, light, pH, O₂ and CO₂ concentration.</p> <p>2. Role of Toxins in Plant pathogenesis: Pathotoxins, Vivo toxins and Phyto toxins.</p> <p>3. Effect of toxins on plant tissues: Selective and non-selective toxins.</p> <p>4. Seed Pathology: Scope and importance; seed health testing; methods and procedures; detection of seed borne-fungi, Bacteria and viruses. Seed bio deterioration: Biochemical changes, Morphological abnormalities, loss in germinability. Mycotoxins, fusarium toxin and aflatoxin. Control of Post-harvest spoilage of grains.</p>	10/12/19 To 26/12/19	
2	Credit II: Genetic Variability: (15L)	<p>1. Genetic Variability in plant pathogen</p> <ul style="list-style-type: none"> i) Genetic Variability in viruses ii) Genetic Variability in Fungi iii) Level of variability in pathogen iv) Loss of virulence <p>2. Genetics and molecular basis of host parasite interaction:</p> <ul style="list-style-type: none"> i) Evolution of parasitism. ii) Genetics of host parasite interaction. iii) Gene for gene relationship. 	27/12/19 To 23/01/20	

		<p>iv) Criteria for gene for gene relationship.</p> <p>v) Molecular basis of host parasitic interaction.</p> <p>3. Physiologic specialization: General accounts.</p>		
3	Credit- III: Diseases of crop plants-I: (15L)	<p>Symptomology, causal organism and control measures of:</p> <ol style="list-style-type: none"> 1) Long smut of Sorghum. 2) Die back of Chilly. 3) Charcoal rot of Soyabean. 4) Leaf curl of Papaya. 5) Black heart of Potato. 6) Stem canker of Potato. 7) Fusarium wilts of Tomato. 8) Loose Smut of Wheat. 9) Red Rot of Sugarcane. 10) Dodder or Cuscuta on Potato/Flax 	<p>24/01/20 To 24/02/20</p>	
4	Credit IV: Diseases of crop plants II: (15L)	<p>Symptomology, causal organism and control measures of:</p> <ol style="list-style-type: none"> 1) Black spot of Crucifers. 2) Loose smut of Sorghum. 3) Rust of Bean. 4) Brown Rust of Wheat. 5) Powdery mildew of Cucurbits 6) Downy mildew of Grapes. 7) Sandal spike Disease. 8) Ear cockles of Wheat 9) Sugarcane Mosaic 10) Late Blight of Potato. 	<p>27/02/20 To 31/03/20</p>	