Course Schedule – November 2019 to April 2020

Department : Botany

Name/s of the Faculty : Dr. Geradette Davey & Ms. Antony Rose Immaculate. C

Course Title : Basics of Applied Biotechnology

Course Code : 19BT/MC/BB23

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit I	Lecture	Biotechnology –	2 (uruuron
(Day Order 1 to 6)	Unit:1.1		An Introduction	
	Introduction &		by S.J.	
	Scope of		Ignacimuthu	
	Biotechnology			
	1.2 Single Cell			
	Protein –	Lecture cum	Biotechnology –	
	Spirulina	Demonstration	U.Sathyanarayana	
			A Textbook of	
			Biotechnology –	
			R.C.Dubey	
Nov 22 –29, 2019	Unit I	Lecture cum	Biotechnology –	
(Day Order 1 to 6)	1.2 Single Cell	Demonstration	U.Sathyanarayana	
(Day Order 1 to 0)	Protein –	Demonstration	A Textbook of	
	Spirulina		Biotechnology –	
	1.3Algal	Lecture with PPT	R.C.Dubey	
	Biofertilizers	Lecture with FF1	K.C.Dubey	
	Dioternizers			
Dec 2 – 7, 2019	Unit I		Biotechnology –	Quiz
(Day Order 1 to 6)	1.3Algal	Lecture with PPT	U. Sathyanarayana	

	Biofertilizers		A Textbook of	
	1.4 Principles of		Biotechnology –	
	Plant Tissue		R .C. Dubey	
	Culture			
Dec 9 – 16, 2019	Unit 2	Lecture	Elements of	
(Day Order 1 to 6)	2.1 Edible		Biotechnology –	
	Mushrooms		P. K. Gupta	
			-	
	Unit 4	Lecture	Basic	
	Food		Fermentation	
	Biotechnology		Technology –	
	4.1 Role of		S.M. Reddy	
	Yeast in Bread			
	making			
Dec 17 – Jan 4, 2020	2.2	Lecture	Biotechnology –	Assignment
(Day Order 1 to 6)	Poisonous		U. Sathyanarayana	
	Mushrooms			
			A Textbook of	
	4.2 Genetically	Lecture with PPT	Biotechnology –	
	Modified Food		R. C. Dubey	
	– Bt Brinjal			
Jan 6 - 11, 2020	2.3	Lecture	Elements of	
(Day Order 1 to 6)	Nutritive Value		Biotechnology –	
			P. K. Gupta	
	4.2 Genetically	Lecture with PPT	Biotechnology –	
	Modified Food		U. Sathyanarayana	
	– Bt Brinjal		A Textbook of	
			Biotechnology –	
			R. C .Dubey	
Jan 13 -23, 2020	2.4			

(Day Order 1 to 6)	Cultivation of	Practical	Basic
	Oyster	Demonstration	Fermentation
	Mushroom		Technology –
	4.3 Estimation		S.M. Reddy
	of Rate of		Industrial
	Fermentation		Microbiology –
	using Yeast		A. H. Patel
Jan 24 -27, 2020	Revision		
(Day Order 1 to 2)			
Jan 28 – Feb 1, 2020		C.A	A. Test
Feb 03- 06, 2020	Unit 3	Lecture	Industrial
(Day Order 3 to 6)	3.1		Microbiology –
	Manufacture of		A. H. Patel
	Cheese		
	Unit 5		Industrial
	Fermentation	Lecture	Microbiology –
	Technology		A. H. Patel
	5.1 Types of		12.22.24.24
	Fermentors		
Feb 07 -14, 2020	3.2	Lecture	Industrial
(Day Order 1 to 6)	Types of		Microbiology –
	Cheese		A. H. Patel
		Lecture	
	Unit 5		
	Fermentation		Industrial
	Technology		Microbiology –
	5.1 Types of		A. H. Patel
	Fermentors		
Feb 17 – Feb 24, 2020	Unit 5	Lecture	Industrial
(Day Order 1 to 6)	Fermentation		Microbiology –
	Technology		A. H. Patel

	5.1 Types of		
	Fermentors		
Feb 25 – March 03, 2020	3.3	Practical	
(Day Order 1 to 6)	Manufacture of		
	Yoghurt		Industrial
		Lecture	Microbiology –
	5.2 Penicillin		A.H.Patel
	Production		
March 04 – 11, 2020	5.2 Penicillin	Lecture	Industrial
(Day Order 1 to 6)	Production		Microbiology –
			A.H.Patel
March 12 –18, 2020	5.3 Citric Acid	Lecture	Industrial
(Day Order 1 to 6)	Production		Microbiology –
			A.H.Patel
March 19 -27, 2020	5.3 Citric Acid	Lecture	Industrial
(Day Order 1 to 6)	Production		Microbiology –
			A.H.Patel
March 28-30 2020		1	1
(Day Order 1 & 2)		REV	VISION

Course Schedule – November to April 2020

Department : BOTANY

Name of the Faculty : DR. S. DIANA VINODHINI

Course Title : BRYOPHYTES, PTERIDOPHYTES AND GYMNOSPERMS

Course Code : 19BT/MC/BP24

Week & No. of hours	Units & Topics	Teaching Methodolog	Text & References	Method of Evaluation
		y		
Nov 15 – 21, 2019	Unit 1	Lecture	A Textbook of	
(Day Order 1 to 6)	Bryophytes	through	Botany Vol. II-	
	1.1 Classification of	chalk and	Bryophytes,	
	Bryophyta (Proskauer,	board		
	1957)	method		
	1.2 Characteristic features of		Bryophytes by	
	classes		Srivastava, H.N.	
Nov 22 –29, 2019	1.3 A Detailed study of the	Lecture	Bryophytes by	
(Day Order 1 to 6)	thallus structure, anatomy	through	Srivastava, H.N.	
	and reproduction of the	chalk and	The structure and	
	following (no development):	board	Life of	
	Hepaticopsida – Marchantia	method	Bryophytes by	
	Bryopsida - Polytrichum		Watson, E.V.	
Dec 2 – 7, 2019	Unit 2	Lecture and	Pteridophyta by	
(Day Order 1 to 6)	Pteridophytes	OHP	P.C. Vashista	
	2.1 Classification of			
	Pteridophyta (Reimers, 1954)			
	2.2 Characteristic features of			
	classes			
Dec 9 – 16, 2019	2.3 A Detailed study of the	Lecture &	Botany for degree	Assignment
(Day Order 1 to 6)	plant body, anatomy and	PPT	students	
	reproduction of the following		Pteridophyta by	
	(no development):		P.C. Vashista	

	Lycopsida – Lycopodium			A textbook of	
	Pteropsida - Marsilea			Botany by S. N.	
				Pandey, P.S.	
				Trivedi and A.	
				Misra	
Dec 17 – Jan 4, 2020	Unit 3		Lecture &	Gymnosperms by	
(Day Order 1 to 6)	Gymnosperms		PPT	Srivastava, H.N.	
	3.1 Classification of				
	Gymnosperms				
Jan 6 - 11, 2020	3.2 Characteristic feature	s of	Lecture	A Textbook of	
(Day Order 1 to 6)	classes		through	Botany Vol. II-	
	3.3 A Detailed study of the	ne	chalk and	Bryophytes,	
	plant body, anatomy and		board	Pteridophytes and	
	reproduction of the follow	wing	method	Gymnosperms by	
	(no development):			Pandey, S.N., P.S	
	Cycadopsida - Cycas			Trivedi and A	
				Misra.	
Jan 13 -23, 2020	Coniferopsida – Pinus		Lecture	Gymnosperms by	
(Day Order 1 to 6)	Gnetopsida - Gnetum		through	Srivastava, H.N.	
			chalk and		
			board		
			method		
Jan 24 -27, 2020	REVISION				
(Day Order 1 to 2)					
Jan 28 – Feb 1, 2020			C.A. 7	Γest	
Feb 03- 06, 2020	Unit 4	Lect	ure & PPT	An Introduction of	
(Day Order 3 to 6)	Fossils			Palaeobotany by	
	4.1 Geological Time			Arnold C.A	
	Scale				
Feb 07 -14, 2020	4.2 Types of	Lect	ure & PPT	Essentials of	
(Day Order 1 to 6)	Fossilization:			Palaeobotany by Sukla & Mishra,	
	Compression,			S.P	

	Impression,			
	Incrustation,			
	Petrification and			
	Compaction			
Feb 17 – Feb 24, 2020	Fossil forms –	Lecture through	Essentials of	Quiz
(Day Order 1 to 6)	Pteridophyta:	chalk and board	Palaeobotany by	Quiz
(Day Order 1 to 0)		method	Sukla & Mishra,	
	Lepidodendron,	method	ĺ	
	Stigmaria,		S.P	
	Lepidostrobus and			
	Lepidocarpon			
Feb 25 – March 03,	4.3 Gymnosperms –	Lecture through	Botany for degree	
2020	Williamsonia	chalk and board	students	
(Day Order 1 to 6)	Unit 5	method and ppt	Pteridophyta by	
	5.1 Life cycle patterns		P.C. Vashista	
	in Bryophytes,		A textbook of	
	Pteridophytes and		Botany by S. N.	
	Gymnosperms		Pandey, P.S.	
			Trivedi and A.	
			Misra	
March 04 – 11, 2020	5.2 Stelar Evolution	Lecture & PPT	Botany for degree	
(Day Order 1 to 6)			students by P.C.	
			Vashista	
March 12 –18, 2020	5.3 Heterospory and	Lecture & PPT	Pteridophyta by	
(Day Order 1 to 6)	seed habit		P.C. Vashista	
March 19 -27, 2020	5.4 Ecological and	Lecture & PPT	A Textbook of	
(Day Order 1 to 6)	economic importance		Botany Vol. II-	
	-		Bryophytes,	
			Pteridophytes and	
			Gymnosperms by	
			Pandey, S.N., P.S	
			Trivedi and A	
			Misra.	

March 28-30 2020	
(Day Order 1 & 2)	REVISION

Course Schedule – November 2019 to April 2020

Department : Botany

Name/s of the Faculty : Ms.Antony Rose Immaculate & Dr.S.Sathya Bama

Course Title : General Botany - II

Course Code : 19BT/AC/GB24

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1.1.Salient features		Text Book of	
(Day Order 1 to 6)	of Bryophyta	Lecture through	Botany –	
		chalk and board	Vidyathri.	
		method	College Botany –	
	Unit 3.1 Photosynthesis		B.P.Pandey.	
	- Light Reaction	Lecture through		
		chalk and board	Plant Physiology	
		method	and Biochemistry –	
			S.K.Verma.	
			Modern plant	
			Physiology by	
			Sinha. R.K.	
Nov 22 –29, 2019	Unit 1.2 A detailed	Lecture with	Text Book of	
(Day Order 1 to 6)	study of the life cycle of	practical exposure	Botany –	
	Funaria		Vidyathri.	
			College Botany –	
			B.P.Pandey.	
	Unit 3.1 Photosynthesis			
	- Dark Reaction	Lecture through	Plant Physiology	
		chalk and board	and Biochemistry –	
		method	S.K.Verma.	
			Modern plant	
			Physiology by	
			Sinha. R.K.	
1				

Dec 2 – 7, 2019	Unit 1.1: Salient features	Lecture with PPT	Outlines of	
(Day Order 1 to 6)	of Pteridophyta		Botany by Rao, K.	
			N and	
	3.2 Mineral Nutrition in		Narayanaswamy,	Assignment on
	Plants	Lecture with PPT	R.V.	Macro and Micro
			Text Book of	nutrients
			Plant Physiology	
			by Verma, V.	
Dec 9 – 16, 2019	Unit 1.3: A detailed	Lecture with	Text Book of	
(Day Order 1 to 6)	study of the life cycle of	Practical	Botany –	
	Lycopodium		Vidyathri.	
			College Botany –	
			B.P.Pandey.	
	Unit 4.1 Plant Growth	Lecture with PPT		
	Regulators – Auxins and		Modern Plant	
	Cytokinins,.		Physiology –	
			R.K.Sinha	
Dec 17 – Jan 4, 2020	Unit 1.3: A detailed	Lecture with	Text Book of	Quiz from unit
(Day Order 1 to 6)	study of the life cycle of	Practical	Botany –	1.1, 1.2 & 1.3
	Lycopodium		Vidyathri.	
			College Botany –	
			B.P.Pandey.	
	Unit 4.1 Plant Growth	Lecture with PPT		
	Regulators –		Modern Plant	
	Gibberellins, ABA and		Physiology –	
	Ethylene		R.K.Sinha	
Jan 6 - 11, 2020	Unit 1.1: Salient features	Lecture through	Text Book of	
(Day Order 1 to 6)	of Gymnosperms	chalk and board	Botany –	
		method	Vidyathri.	
	Unit 4.2 Photoperiodism	Lecture through	College Botany –	
		chalk and board	B.P.Pandey.	

		method	
			Modern Plant
			Physiology –
			R.K.Sinha
Jan 13 -23, 2020	Unit 1.4: A detailed	Lecture with	Text Book of
(Day Order 1 to 6)	study of the life cycle of	Practical	Botany –
	Cycas		Vidyathri.
			College Botany –
			B.P.Pandey.
	Unit 4.3 Vernalisation	Lecture through	Modern Plant
		chalk and board	Physiology –
		method	R.K.Sinha
Jan 24 -27, 2020	Unit 1.4: A detailed	Lecture with	Text Book of
(Day Order 1 to 2)	study of the life cycle of	Practical	Botany –
	Cycas		Vidyathri.
			College Botany –
			B.P.Pandey.
Jan 28 – Feb 1, 2020		C.A. To	est
Feb 03- 06, 2020	Unit 1.4: A detailed	Lecture with	Text Book of
(Day Order 3 to 6)	study of the life cycle of	Practical	
			Botany –
	Cycas		Botany – Vidyathri.
	Cycas		
	Cycas		Vidyathri.
	Cycas Unit 5.1 Bonsai	Lecture with PPT	Vidyathri. College Botany –
			Vidyathri. College Botany – B.P.Pandey.
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture –
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture – V.L.Sheela
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture – V.L.Sheela Horticultural
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture – V.L.Sheela Horticultural Science – J.Janick
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture –
	Unit 5.1 Bonsai		Vidyathri. College Botany – B.P.Pandey. Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture –

Feb 07 -14, 2020	Unit 2.1 Primary	Lecture with	Anatomy of Seed	
(Day Order 1 to 6)	structure of Dicot Stem	Practical	Plants – V.Singh,	
	and Root		P.C.Pandey and	
			D.K.Jain	
	Unit 5.1 Bonsai		Horticulture –	
	Technique	Lecture with PPT	V.L.Sheela	
			Horticultural	
			Science – J.Janick	
			Introduction to	
			Horticulture –	
			N.Kumar	
Feb 17 – Feb 24, 2020	Unit 2.2 Primary	Lecture with	Anatomy of Seed	
(Day Order 1 to 6)	structure of Dicot Stem	Practical	Plants – V.Singh,	
	and Root		P.C.Pandey and	
			D.K.Jain	
	Unit 5.2 Cut Flowers,	Lecture with PPT	Horticulture –	
	Importance and methods		V.L.Sheela	
	to prolong vase life		Horticultural	
			Science – J.Janick	
			Introduction to	
			Horticulture –	
			N.Kumar	
Feb 25 – March 03,	Unit 2.2 Primary	Lecture with	Anatomy of Seed	Individual
2020	structure of Monocot	Practical	Plants – V.Singh,	Sectioning
(Day Order 1 to 6)	Stem and Root		P.C.Pandey and	
			D.K.Jain	
	Unit 5.3 Flower	Lecture with PPT	Horticulture –	
	Arrangement – Fresh		V.L.Sheela	
	and Dry		Horticultural	
			Science – J.Janick	
			Introduction to	
			Horticulture –	

March 04 – 11, 2020 (Day Order 1 to 6) March 04 – 11, 2020 (Day Order 1 to 6) Isobilateral and Dorsiventral Unit 5.3 Flower Arrangement – Fresh and Dry March 12 – 18, 2020 (Day Order 1 to 6) March 12 – 18, 2020 (Day Order 1 to 6) March 12 – 18, 2020 (Day Order 1 to 6) March 12 – 18, 2020 (Day Order 1 to 6) March 13 – 27, 2020 March 19 – 27, 2020 Unit 2.4 Stomatal Types Lecture with Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – N.Kumar Anatomy of Seed Plants – V.Singh, P.C.Pandey and D.K.Jain Arrangement – Group work Anatomy of Seed Plants – V.Singh, P.C.Pandey and D.K.Jain Arrangement – Blower Arrangement – Flower Arra				N.Kumar	
(Day Order 1 to 6) Isobilateral and Dorsiventral Unit 5.3 Flower Arrangement – Fresh and Dry March 12 –18, 2020 (Day Order 1 to 6) Isobilateral and Dry Unit 2.3 Leaf: Lecture with Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – N.Kumar Plants – V.Singh, Propagation Methods: Cutting, Layering and Grafting Practical Plants – V.Singh, Propagation Methods: Demonstration V.L.Sheela Horticulture – V.L.Sheela Horticulture – N.Kumar					
Dorsiventral Unit 5.3 Flower Arrangement – Fresh and Dry March 12 –18, 2020 (Day Order 1 to 6) Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Domonstration P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar Hantomy of Seed Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela	March 04 – 11, 2020	Unit 2.3 Leaf:	Lecture with	Anatomy of Seed	
Unit 5.3 Flower Arrangement – Fresh and Dry March 12 –18, 2020 (Day Order 1 to 6) Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar Horticulture – N.Kumar Anatomy of Seed Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticulture – N.Kumar	(Day Order 1 to 6)	Isobilateral and	Practical	Plants – V.Singh,	
Unit 5.3 Flower Arrangement – Fresh and Dry March 12 –18, 2020 (Day Order 1 to 6) Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Lecture cum Demonstration Horticulture – V.L.Sheela Horticulture – V.L.Sheela Horticulture – V.L.Sheela Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar		Dorsiventral		P.C.Pandey and	
Arrangement – Fresh and Dry Demonstration V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar March 12 –18, 2020 (Day Order 1 to 6) Unit 2.3 Leaf: Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Demonstration V.L.Sheela Horticultural Science – J.Janick Horticulture – V.L.Sheela Horticulture – V.L.Sheela Horticulture – N.Kumar				D.K.Jain	
and Dry Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar March 12 –18, 2020 (Day Order 1 to 6) Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Order 1 to Horticulture – N.Kumar Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar		Unit 5.3 Flower	Lecture cum	Horticulture –	Flower
March 12 –18, 2020 (Day Order 1 to 6) March 12 –18, 2020 Unit 2.3 Leaf: Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Lecture with Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar		Arrangement – Fresh	Demonstration	V.L.Sheela	Arrangement –
March 12 –18, 2020 (Day Order 1 to 6) March 12 –18, 2020 (Day Order 1 to 6) Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Introduction to Horticulture – N.Kumar Lecture with Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar		and Dry		Horticultural	Group work
March 12 –18, 2020 (Day Order 1 to 6) Unit 2.3 Leaf: (Day Order 1 to 6) Lecture with Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar				Science – J.Janick	
March 12 –18, 2020 (Day Order 1 to 6) Unit 2.3 Leaf: Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting N.Kumar Lecture with Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar				Introduction to	
March 12 –18, 2020 Unit 2.3 Leaf: (Day Order 1 to 6) Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Demonstration Lecture with Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar				Horticulture –	
(Day Order 1 to 6) Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar				N.Kumar	
(Day Order 1 to 6) Isobilateral and Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Practical Plants – V.Singh, P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar					
Dorsiventral Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Demonstration P.C.Pandey and D.K.Jain Horticulture – V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar	March 12 –18, 2020	Unit 2.3 Leaf:	Lecture with	Anatomy of Seed	
Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Demonstration Demonstration V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar	(Day Order 1 to 6)	Isobilateral and	Practical	Plants – V.Singh,	
Unit 5.4 Vegetative Propagation Methods: Cutting, Layering and Grafting Lecture cum Demonstration V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar		Dorsiventral		P.C.Pandey and	
Propagation Methods: Cutting, Layering and Grafting Demonstration V.L.Sheela Horticultural Science – J.Janick Introduction to Horticulture – N.Kumar				D.K.Jain	
Cutting, Layering and Grafting Science – J.Janick Introduction to Horticulture – N.Kumar		Unit 5.4 Vegetative	Lecture cum	Horticulture –	
Grafting Science – J.Janick Introduction to Horticulture – N.Kumar		Propagation Methods:	Demonstration	V.L.Sheela	
Introduction to Horticulture – N.Kumar		Cutting, Layering and		Horticultural	
Horticulture – N.Kumar		Grafting		Science – J.Janick	
N.Kumar				Introduction to	
				Horticulture –	
March 19 -27, 2020 Unit 2.4 Stomatal Types Lecture with Anatomy of Seed				N.Kumar	
March 19 -27, 2020 Unit 2.4 Stomatal Types Lecture with Anatomy of Seed					
	March 19 -27, 2020	Unit 2.4 Stomatal Types	Lecture with	Anatomy of Seed	
(Day Order 1 to 6) Practical Plants – V.Singh,	(Day Order 1 to 6)		Practical	Plants – V.Singh,	
P.C.Pandey and				P.C.Pandey and	
D.K.Jain				D.K.Jain	
Unit 5.4 Vegetative Lecture cum Horticulture –		Unit 5.4 Vegetative	Lecture cum		
Propagation Methods: Demonstration V.L.Sheela		Propagation Methods:	Demonstration	V.L.Sheela	
Cutting, Layering and Horticultural		Cutting, Layering and		Horticultural	
Grafting Science – J.Janick		Grafting		Science – J.Janick	

			Introduction to	
			Horticulture –	
			N.Kumar	
March 28-30 2020				
(Day Order 1 & 2)	REVISION			

Course Schedule – November to April 2020

Department : BOTANY

Name/s of the Faculty : Dr. S. Sathya Bama

Course Title : Anatomy and Embryology of Angiosperms

Course Code : 15BT/MC/AE44

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	1.1Meristems: Classification,	Lecture using	Plant Anatomy	
(Day Order 1 to 6)	Organisation of shoot apex and root apex.	PPT	Anatomy of	
	1.2. Lateral meristems: Vascular cambium- structure		Seed Plants by Singh, V., P.C.	
	and formation.		Pande and D.K.	
			Jain	
Nov 22 –29, 2019	1.3. Cork Cambium: Periderm	Lecture	-do-	
(Day Order 1 to 6)	-Phellem, Phellogen and	through Chalk	Plant Anatomy	
	Phelloderm, Development, location, Morphology of Bark,	and board	by Fahn	
	commercial bark, Protective	method (To		
	tissues of monocot and	teach students		
	Lenticels.	the technique		
		and scientific		
		method of		
		drawing		
		different types		
		of cells		
Dec 2 – 7, 2019	2.1. Secondary xylem:			Assignment on
(Day Order 1 to 6)	vessels, Tracheids, Wood	-do-	-do-	Wood parenchyma
	parenchyma and rays, Sap wood, heartwood, Annual		Applied Plant	and rays, Sap wood
	rings, Dendrochronology.		Anatomy by	, Heart wood ,
			Cutter, D.F	Annual rings and

				Dendrochronology Dec. 15, 2017 – Submission of Assignment
Dec 9 – 16, 2019 (Day Order 1 to 6)	Unit2.2. Secondary phloem: Sieve tubes, Companion cells, phloem parenchyma and fibres	-do-	-do-	
Dec 17 – Jan 4, 2020 (Day Order 1 to 6)	Unit3.1.Secondary growth of normal dicot root and dicot stem. Unit3.2.Anomalous growth: Primary structures in Dicots Secondary structures.	Lecture Cum practical exposure	-do-	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit3.2.Anomalous growth: Secondary structures in Dicots Unit3.3. Primary thickening meristem in monocots	Lecture cum practical exposure	-do-	
Jan 13 -23, 2020 (Day Order 1 to 6)	Unit3.4.Anomalous secondary thickening in monocot stem - Dracaena. Unit4.1.Leaf – Internal Structure of Dorsiventral, Isobilateral and Centric leaf.	Lecture through Black board Practical study of the internal structures	Plant Anatomy by B.P.Pandey Anatomy of Seed Plants by Singh,V., P.C. Pande and D.K. Jain Plant Anatomy by Cutter,E.G.	

Jan 24 -27, 2020	REVISION			
(Day Order 1 to 2)				
Jan 28 – Feb 1,		C.A. Test	<u> </u>	
2020				
Feb 03- 06, 2020	Unit 4.1 Leaf Abscission	Lecture through	Anatomy of	
(Day Order 3 to 6)		chalk and board	Seed Plants by	
		method	Singh, V., P.C. Pande and D.K.	
			Jain	
Feb 07 -14, 2020	Unit 4.2 Epidermis –	Lecture through	- Do-	
(Day Order 1 to 6)	Stomata – Structure and	chalk and board	- 10-	
(Day Older 1 to 0)		and practical		
	Types	and practical		
	Unit 4.3 Epidermal Hairs			
E1 17 E1 24	and Appendages	T (1 1	E 1 1 C	
Feb 17 – Feb 24,	Unit 5.1. Microsporangium: Microsporogenesis –Male	Lecture through PPT and chalk	Embryology of angiosperms by	
2020	gametophyte.	and board method	Bhojwani and	
(Day Order 1 to 6)	Unit5.2.Megasporangium:		Bhatnagar;	
	Megasporogenesis –		Angiosperm	
	Female gametophyte		Embryology by Muneeswaran	
	Monosporic (Polygonium)			
Feb 25 – March	Unit 5.2 Female			
03, 2020	Gametophyte - Bisporic (Allium) and tetrasporic	-do-	-do-	Quiz from
(Day Order 1 to 6)	(Peperomia)			subunits, 5.1 & 5.2
March $04 - 11$,	Unit5.3. Double Fertilization			
2020	retifization	-do-	-do-	
(Day Order 1 to 6)	Apomixis			
March 12 –18,	Unit 5.4 Endosperm -	Lecture through		
2020	Types and functions; Ruminate endosperm	Board and Chalk	-do-	
(Day Order 1 to 6)	_	method		
	Unit 5.5 Development of Dicot Embryo- Capsella			
	brusa pastoris			
March 19 -27,	Unit 5.5 Polyembryony	-do-	-do-	

2020			
(Day Order 1 to 6)			
March 28-30 2020			
(Day Order 1 & 2)	REVISION		

Course Schedule – November to April 2020

Department : Botany

Name/s of the Faculty : Dr. Geradette Davey

Course Title : Genetics, Plant Breeding and Evolution

Course Code : 15BT/MC/GP64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	1.1 Mendelian	Lecture	Cytology,	Quiz
(Day Order 1 to 6)	Genetics		Genetics and	
			Evolution by	
			Gupta, P.K.	
Nov 22 –29, 2019	1.2 Gene	Problem- Solving	Fundamentals of	
(Day Order 1 to 6)	interactions		Genetics	
			by Singh, B.D.	
Dec 2 – 7, 2019	1.2 Gene	Problem- Solving	The Science of	
(Day Order 1 to 6)	interactions and		Genetics by	
	1.3 Multiple		Burns, G.W.	
	Gene			
	Inheritance			
Dec 9 – 16, 2019	1.4 Extra -	Lecture	Essentials of	
(Day Order 1 to 6)	Chromosomal		Genetics by	
	Inheritance		Klug, H.N. Klug, W.S. and-	
	2.1 Linkage in		Cummings, M. R.	
	Maize			
Dec 17 – Jan 4, 2020	2.2 Theories of	Lecture	Genetics by/	
(Day Order 1 to 6)	Crossing Over		Strickberger,	
	2.3 Mapping of		M.W.	
	Genes			
	2.4 Sex			
	Determination			
	in Melandrium			
Jan 6 - 11, 2020	2.5 Sex-	Lecture	Fundamentals of	Assignment
(Day Order 1 to 6)	linkage in Man		Genetics by	

	3.1 Down's		Singh, B.D
	Syndrome		Textbook of
	3.2 Klinefelter's		human genetics
	Syndrome		Levitan, M
	3.3 Sickle Cell		
	Anaemia		
Jan 13 -23, 2020	3.4 Genetic	Case Study	Practical
(Day Order 1 to 6)	Counselling		Genetic
			Counselling by
			Harper, P.S.
Jan 24 -27, 2020	Revision		
(Day Order 1 to 2)			
Jan 28 – Feb 1, 2020			C.A. Test
Feb 03- 06, 2020	4.1 Objectives	Lecture	Elementary
(Day Order 3 to 6)	of Plant		Principles of Plant
	Breeding		Breeding by
			Chaudhari, H.K.
Feb 07 -14, 2020	4.2 Selection	Lecture	Plant Breeding by
(Day Order 1 to 6)	Methods		Kumaresan, V.
Feb 17 – Feb 24, 2020	4.3 Basic	Lecture	Plant Breeding:
(Day Order 1 to 6)	Hybridization		Principles and
	Techniques		Methods by
			Singh, B. D.
Feb 25 – March 03, 2020	4.4 Induced	Lecture	Principles of Plant
(Day Order 1 to 6)	Polyploidy in		Breeding by
	Plant Breeding		Allard, R.W.
March 04 – 11, 2020	5.1 Origin of	Lecture	Cell Biology,
(Day Order 1 to 6)	Life		Genetics,
			Molecular
			Biology,
			Evolution and
			Ecology by
			Verma, P.S. and

			Agarwal, V.K.	
March 12 –18, 2020 (Day Order 1 to 6)	5.2 Theories of Evolution	Lecture	The Evolution of Plants by Willis, K. J. and McElwain, J. C.	
March 19 -27, 2020	5.3 Isolating	Lecture	Cytology,	
(Day Order 1 to 6)	Mechanisms		Genetics and Evolution by Gupta, P.K.	
March 28-30 2020 (Day Order 1 & 2)	REVISION			

Course Schedule – November to April 2020

Department : BOTANY

Name/s of the Faculty : Dr. H. Shakila

Course Title : Plant Biotechnology & Genetic Engineering

Course Code : 15BT/MC/PG64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1	Lecture cum	Elements of	
(Day Order 1 to 6)	1.1.Totipotency,Culture	demonstration	biotechnology	
	techniques:Equipment,Media,		by Gupta P.K	
Nov 22 –29, 2019	1.1. Explant, Callus	Lecture and PPT	Biotechnology	
(Day Order 1 to 6)	formation, Organogenesis.	Lecture and 111	by	
(Day Order 1 to 0)				
	1.2. Root culture, Shoot culture		Satyanarayana	
Dec 2 – 7, 2019	1.2. Anther and pollen culture	Lecture and PPT	Biotechnology	
(Day Order 1 to 6)	1.3. Cell Culture, Protoplast		by	
	culture- Isolation, culture and		Satyanarayana	
	Regeneration			
Dec 9 – 16, 2019	1.4 Somaclonal Variation	Lecture	Elements of	
(Day Order 1 to 6)	1.5. Somatic hybridization		biotechnology	
	and Cybrid: Spontaneous and		by Gupta P.K	
	induced fusion			
	1.6. Applications:			
	Horticulture, Pharmaceutical			
	industry			
Dec 17 – Jan 4, 2020	Unit 2.1.Transgenic plants	Lecture	A Text book of	QUIZ
(Day Order 1 to 6)	for crop improvement:		Biotechnology	
	Herbicide resistance, Insect		by Dubey R.C	
	resistance, Resistance against			

	viral, bacterial and fungal			
	pathogens			
Jan 6 - 11, 2020	2.2. Transgenic plants-Edible	Lecture	A Text book of	
(Day Order 1 to 6)	vaccines: Transgenic plants		Biotechnology	
	as recombinant protein		by Dubey R.C	
	production systems, choice of			
	plant species for recombinant			
	vaccine production			
Jan 13 -23, 2020	2.2 GM Plants: Bt Brinjal,	Lecture	A Text book of	
(Day Order 1 to 6)	Cotton, Golden Rice		Biotechnology	
			by Dubey R.C	
Jan 24 -27, 2020	REVISION			
(Day Order 1 to 2)				
Jan 28 – Feb 1, 2020		C.A. Test	1	
Feb 03- 06, 2020	2.3 Bioethics and Biosafety	Lecture and	Industrial	
(Day Order 3 to 6)	Unit 3.1 Bioethanol	OHP	Microbiology by	
			Patel. A.H	
Feb 07 -14, 2020	3.2 Biohydrogen and Gobar	Lecture and	Industrial	ASSIGNMENT
(Day Order 1 to 6)	gas	ОНР	Microbiology by	SUBMISSION
	3.3 Bio diesel : Petroplants		Patel. A.H	
Feb 17 – Feb 24, 2020	Unit 4.1 Introduction to	Lecture and PPT	Biotechnology	
(Day Order 1 to 6)	Genetic Engineering		by	
	4.2 Techniques: Restriction		Satyanarayana	
	Endonucleases, Ligation			
Feb 25 – March 03,	4.3 Cloning Vectors: pUC 18,	Lecture	Biotechnology	
2020	YAC and BAC		by	
(Day Order 1 to 6)	4.4 Genomic Libraries		Satyanarayana	
March 04 – 11, 2020	4.5 Hybridization – Southern	Lecture	Elements of	
(Day Order 1 to 6)	and Northern Blotting		biotechnology	
			by Gupta P.K	
March 12 –18, 2020	Unit 5.1 Target cells for	Lecture	Biotechnology	
(Day Order 1 to 6)	Transformation		by	
	<u> </u>	l		<u>I</u>

	5.2 Gene Transfer Technique		Satyanarayana
	using Agrobacterium		
March 19 -27, 2020	5.3 Physical Delivery	Lecture	Biotechnology
(Day Order 1 to 6)	Methods: PEG stimulated,		by
	Microprojectile,		Satyanarayana
	Electroporation		
March 28-30 2020		1	,
(Day Order 1 & 2)	REVISION		

Course Schedule – November 2019 to April 2020

Department : Botany

Name/s of the Faculty : Ms.Antony Rose Immaculate

Course Title : Plant Physiology
Course Code : 15BT/MC/PP64

Week & No. of hours	Units & Topics	Teaching Methodology	Text &	Method of
Nov 15 – 21, 2019 (Day Order 1 to 6)	Unit 1: Water relations in plants 1.1 Water potential 1.2 Transpiration: Mechanism of stomatal transpiration, ATP driven exchange pump, Role of ABA in stomatal opening & Closure	Methodology Lecture with Demo on water potential in plants - Chardokaff method	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K Plant Physiology by Taiz and Zeiger	Evaluation
Nov 22 –29, 2019 (Day Order 1 to 6)	1.3 Water movement across the root and xylem Unit 2: Mineral nutrients: 2.1 Micro and Macro nutrients	Lecture	Text Book of Plant Physiology by Verma. V	Assignment on Micro & Macro nutrients
Dec 2 – 7, 2019 (Day Order 1 to 6)	2.2 Mechanism of mineral salt absorption: Theories 2.3 Transport of organic solutes 2.3 Phloem loading and unloading	Lecture & PPT	Text Book of Plant Physiology by Verma. V Plant physiology by Salisbury & Ross	
Dec 9 – 16, 2019 (Day Order 1 to 6)	2.4 Source of Nitrogen, Biochemistry of Nitrogen fixation	Lecture	Text Book of Plant Physiology by Verma. V	

Dec 17 – Jan 4, 2020	Unit 3:	Lecture	Plant Physiology	
(Day Order 1 to 6)	Photosynthesis		by Devlin	
(Day Order 1 to 0)	3.1 Principles of		Modern plant	
	light absorption by		Physiology by	
	plants		Sinha. R.K	
Jan 6 - 11, 2020	Unit 3:	Lecture	Plant Physiology	
(Day Order 1 to 6)	Photosynthesis		by Devlin	
(Day Order 1 to 0)	3.1 Principles of		Modern plant	
	light absorption by		Physiology by	
	plants		Sinha.R.K	
Jan 13 -23, 2020	3.2	Lecture & PPT	Plant Physiology	
(Day Order 1 to 6)	CO ₂ assimilation		by Devlin	
(Day Order 1 to 0)	pathway: C3, C4		Modern plant	
	cycles and CAM,		Physiology by	
	Photorespiration		Sinha. R.K	
Jan 24 -27, 2020	Factors influencing	Lecture cum	Plant Physiology	
(Day Order 1 to 2)	photosynthesis&	demo	by Noggle & Fritz	
,	Revision			
Jan 28 – Feb 1, 2020		C.A.	Test	
Feb 03- 06, 2020	Unit 4:	Lecture cum	Plant Physiology	
(Day Order 3 to 6)	Respiration	demonstration on	by Devlin	
(Day Order 5 to 0)	4.1 Respiratory	fermentation &	Modern plant	
	quotient,	Estimation of	Physiology by Sinha. R.K	
	Fermentation and	Respiratory	Silina. K.K	
	Anaerobic	Quotient		
Feb 07 -14, 2020	processes 4.2 Glycolysis,	Lecture	Plant Physiology	
,	Substrate level	Lecture	by Devlin	
(Day Order 1 to 6)	phosphorylation		Modern plant	
	Entner-Doudroff		Physiology by	
	pathway,		Sinha. R.K	
	Glyoxylate cycle.			
Feb 17 – Feb 24, 2020	4.3 Krebs cycle,	Lecture & PPT	Plant Physiology	
,	Electron flow	Lecture & III	by Devlin	
(Day Order 1 to 6)	components		Modern plant	
	Electron Transport		Physiology by	
	pathway, Oxidative		Sinha. R.K	
	phosphorylation			
	and Cyanide			
	resistant pathway			
Feb 25 – March 03, 2020	Unit 5: Growth		Text Book of	
(Day Order 1 to 6)	and Growth	-do-	Plant Physiology	Quiz
	Regulators		by Verma. V	
	5.1 Growth:		Plant Physiology by Noggle & Fritz	
	Kinetics and growth curve		by Noggle & FIIIZ	
	growni curve			

	5.2 Chemical Nature, Bioassay, Physiological effect and practical applications of Auxin, ABA.			
March 04 – 11, 2020 (Day Order 1 to 6)	5.2 Cytokinin, Gibberellic acid and Ethylene	Lecture & demonstration on the responses of plants to hormones	Text Book of Plant Physiology by Verma. V Plant Physiology by Noggle & Fritz	
March 12 –18, 2020 (Day Order 1 to 6)	5.3Photoperiodism, Florigen concept	Lecture	Text Book of Plant Physiology by Verma. V& Plant Physiology V.K. Jain	
March 19 -27, 2020 (Day Order 1 to 6)	5.3 Vernalization Revision	Lecture	Text Book of Plant Physiology by Verma. V Plant Physiology by Bidwell	
March 28-30 2020 (Day Order 1 & 2)		REVI	SION	

Course Schedule – November to April 2020

Department : BOTANY

Name/s of the Faculty : Dr. S.SATHYA BAMA

Course Title : HORTICULTURE

Course Code : 15BT/ME/HC55

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit1.1. Classification of	Lecture through		
(Day Order 1 to 6)	Horticultural plants	chalk and board		
			Introduction to	
	Unit 1.2 Garden	Lecture showing	Horticulture by	
	Implements	garden	Kumar N	
		implements	Horticulture by	
	Unit 1.3.Garden and its	Lecture through	Sheela V L	
	components: Fencing	power point		
	hedge, borders	presentation		
Nov 22 –29, 2019	Unit 1.3. Garden and its	Lecture through	Introduction to	
(Day Order 1 to 6)	components: Flower beds,	power point	Horticulture by	
	Edging and Lawn, Drives	presentation	Kumar N	
	and Paths, Water garden	Visit to various	Horticulture by	
	and Garden adornments	gardens of Stella	Sheela V	
		Maris College		
Dec 2 – 7, 2019	Unit 1.4.Vegetative	Lecture through	-do-	
(Day Order 1 to 6)	Propagation: Layering and	Chalk and Board	Horticulture	
	Grafting	method	Principles and	
			Practices by	
			George Acquaah	

Dec 9 – 16, 2019	Unit 1.4.Vegetative	Lecture through	-do-	Quiz from Unit 1
(Day Order 1 to 6)	Propagation: Budding	Chalk and Board	Horticultural	
		method	Science by Janick	
	Unit 1.5. Vegetative	Practical exposure		
	propagating methods	to propagating		
		methods		
Dec 17 – Jan 4,	Unit 2.1.1. Propagation,	Lecture through	South Indian fruits	
2020	planting and harvesting of	power point	and their culture	
(Day Order 1 to 6)	fruits: Mango, Banana and	presentation	by K.C. Naik	
	Guava			
Jan 6 - 11, 2020	Unit 2.1.2. Propagation,	Lecture through	Vegetative	
(Day Order 1 to 6)	planting and harvesting of	power point	production in	
	vegetative crops: Onion,	presentation	India by D.V.S.	
	Potato, Brinjal and Lady's		Chauhan	
	finger			
Jan 13 -23, 2020	Unit3.1 & 3.2: Growing	Lecture through	Introduction to	
(Day Order 1 to 6)	plants in Pots, Potting and	practical exposure	Horticulture by	
	Repotting		Kumar N	
	Unit 3.3: Hanging Basket		Horticulture by	
			Sheela V L	
Jan 24 -27, 2020	Unit 3.4: Kitchen Garden –	Lecture through	Horticulture by V.	
(Day Order 1 to 2)	Layout	practical exposure	L. Sheela	
			Introduction to	
			Horticulture by	
			Kumar N	
			Horticulture	
			Principles and	
			Practices by	
			George Acquaah	
Jan 28 – Feb 1,		C.A. Tes	t	

Feb 03- 06, 2020				
1 00 03- 00, 2020	Unit 3.5: Market Garden	Lecture through	Introduction to	
(Day Order 3 to 6)	and Truck Garden	chalk and board	Horticulture by	
			Kumar N	
			Vegetable	
			Production in	
			India by Chauhan	
			Vegetable crops of	
			India by Yawalker	
Feb 07 -14, 2020	Unit 3.6: Rock Garden and	Lecture through	Ornamental	
(Day Order 1 to 6)	Terrace Garden	practical exposure	Horticulture in	
	Unit 3.7: Vegetable	Lecture through	India, Today and	
	Forcing	chalk and board	Tomorrow by	
			Randhawa G S	
Feb 17 – Feb 24,	Unit 4.1: Lawn making	Lecture through		
2020	and its Maintenance	PPT and by	Introduction to	
(Day Order 1 to 6)		exposing the	Horticulture by	
		Lawn at the main	Kumar N	
		garden of Stella	Ornamental	
		Maris College	Horticulture in	
			India, Today and	
			Tomorrow by	
			Randhawa, G S	
Feb 25 – March	Unit 4.2 Landscape	Lecture through	Horticulture in	
03, 2020	Gardening	power point	India, Today and	
(Day Order 1 to 6)		presentation	Tomorrow by	
			Randhawa, G S	
			Horticultural	
			Science by Janick	
March 04 – 11,	Unit.5.1: Cut Flower	Lecture through	Introduction to	Flower
2020	Arrangement: Fresh and	power point	Horticulture by N.	Arrangement
(Day Order 1 to 6)	Dry	presentation	Kumar	

)				
(Day Order 1 & 2		REVISIO)N	
March 28-30 2020		•	•	
(Day Order 1 to 6)		demonstration	Kumar N	
2020		practical	Horticulture by	
March 19 -27,	Unit 5.4: Terrarium	Lecture through	Introduction to	
			Iyengar, K. S	
		exposure	by Gopalswamy	
		PPT and practical	gardening in India	
	Unit 5.3: Bonsai	Lecture through	Complete	
(Day Order 1 to 6)		method	Kumar N	
2020	Flowers: Rose and Jasmine	chalk and board	Horticulture by	
March 12 –18,	Unit 5.2: Economic	Lecture through	Introduction to	
			George Acquaah	
			Practices by	
			Principles and	
			Horticulture	
			Kumar N	
		demonstration	Horticulture by	
		Practical	Introduction to	

Course Schedule – November to April 2020

Department : BOTANY

Name of the Faculty : DR. S. DIANA VINODHINI

Course Title : ANALYTICAL TECHNIQUES IN PLANT SCIENCES

Course Code : 15BT/ME/AT55

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1	Lecture	Biological	
(Day Order 1 to 6)	Microscopy-principle,	ОНР	Instrumentation	
	construction and		and Methodology	
	application of light		by P.K Bajpai	
	microscopes			
	1.1 Compound, Stereo,			
	Polarized light, Phase			
	contrast, Fluorescence,			
	Differential interference			
	contrast, Laser Scanning			
	and confocal micoscopes			
Nov 22 –29, 2019	1.2 Preparation of	Lecture	Plant	
(Day Order 1 to 6)	specimen for light	ОНР	Microtechnique &	
	microscopy:		Microscopy by	
	Paraffin techniques-		Steven E. Ruzin	
	Fixatives: FAA,			
	Carnoy's, Dehydration			
	and Infiltration,			
	Embedding and			
	sectioning (Paraffin			
	blocks)			
Dec 2 – 7, 2019	1.2 Staining- single and	Lecture	Plant	Assignment
(Day Order 1 to 6)	double stain and	ОНР	Microtechnique &	
	mounting		Microscopy by	
	1.3 Micrometry		Steven E. Ruzin	

	1.4 Microtomes: Rotary,		Botanical
	wood microtome,		histochemistry by
	Cryotomy, Ultra		Jensen
	microtomy		
	1.5 Maceration, Leaf		
	clearing		
Dec 9 – 16, 2019	Unit 2	Lecture and ppt	Biological
(Day Order 1 to 6)	Electron microscopy –		Instrumentation
	principle, construction		and Methodology
	and working		by P.K Bajpai
	2.2 preparation of		
	specimen for		
	Transmission Electon		
	Microscopy (TEM)		
	2.2.1 Fixatives –		
	Glutaraldehyde and		
	osmium tetraoxide		
	2.2.2 Embedding –		
	Spurr, Epon		
	2.2.3 Knives		
Dec 17 – Jan 4, 2020	2.2.4 Specimen support	Lecture and	Plant
(Day Order 1 to 6)	– Grid	ppt	microtechnique
	2.2.5 Staining – Positive		and microscopy
	and Negative staining		by steven Ruzin
	2.3 Preparation of		
	specimen for Scanning		
	Electron Microscope		
	(SEM)		
	2.3.1 Fixing, Critical		
	point Drying		
	2.3.2 Freeze Drying,		
	Freeze Fracture, Freeze		
	Etching		
	2.3.3 Specimen Coating		
	- Sputter coating,		

Jan 6 - 11, 2020 Unit 3 Lecture cum demo Biological Instrumentation and Methodology S.1 pH Meter - Construction and application application 3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation Jan 13 -23, 2020 3.3 Single and double Lecture cum demo Biological Instrumentation Bi	
techniques 3.1 pH Meter – construction and application 3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation components Lecture cum demo of the various components of spectrophotometers spectrophotometers and Methodology by P.K Bajpai by P.K Bajpai	
3.1 pH Meter — Lecture cum demo of the various application components of spectrophotometers 3.2 Colorimetry: Beer-Lamberts law, single beam 3.3 Spectrophotometry-UV Visible spectroscopy basic principle and instrumentation by P.K Bajpai by P.K Bajpai by P.K Bajpai by P.K Bajpai	
construction and application components of 3.2 Colorimetry: Beer-Lamberts law, single beam 3.3 Spectrophotometry-UV Visible spectroscopy basic principle and instrumentation of the various components of spectrophotometers	
application 3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation components of spectrophotometers	
3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation spectrophotometers	
Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation	
beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation	
3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation	
UV Visible spectroscopy basic principle and instrumentation	
basic principle and instrumentation	
instrumentation	
Jan 13 -23, 2020 3.3 Single and double Lecture cum demo Biotechniques	
(Day Order 1 to 6) beam of the various theory and	
spectrophotometers components of practice by S.V.S	
(block diagrams only) spectrophotometers Rana	
3.4 Estimation of protein (Double beam &	
using spectrophotometer UV)	
(practical)	
Practical	
Jan 24 -27, 2020 REVISION	
(Day Order 1 to 2)	
Jan 28 – Feb 1, 2020 C.A. Test	_
Feb 03- 06, 2020 Unit 4 Lecture cum demo of Biotechniques	
(Day Order 3 to 6) Separation the various tehniques theory and	
techniques of chromatography practice by S.V.S	
4.1 chromatography Rana	
– principles,	
techniques and	
application of thin	
layer	

	chromatography			
Feb 07 -14, 2020	4.1 Column	Lecture with ppt	Analytical	
(Day Order 1 to 6)	chromatography and		chemistry by	
	High performance		keith Wilson and	
	liquid		walker	
	chromatography			
Feb 17 – Feb 24, 2020	4.2 Electrophoresis:	Lecture cum Practical	Analytical	Quiz
(Day Order 1 to 6)	principles,		chemistry by	
	techniques and		keith Wilson and	
	applications of		walker	
	agarose, PAGE			
	4.3 Separation of			
	proteins and DNA			
	by electrophoresis			
	(Practical)			
Feb 25 – March 03,	Unit 5	Lecture cum demo	Biotechniques	
2020	Centrifugation		theory and	
(Day Order 1 to 6)	5.1 Centrifuge:		practice by S.V.S	
	principle, unit of		Rana	
	measurement and			
	instrumentation			
March 04 – 11, 2020	5.2 Types: Bench,	Lecture cum demo	Biotechniques	
(Day Order 1 to 6)	ultra centrifuge,		theory and	
	Analytical and		practice by S.V.S	
	microfuge		Rana	
March 12 –18, 2020	5.3 Density gradient	Lecture cum demo	Analytical	
(Day Order 1 to 6)	and differential		biochemistry by	
	centrifugation		Asokan	
March 19 -27, 2020	5.4 centrifuge –	practical	Analytical	
(Day Order 1 to 6)	isolation of		chemistry by	
	chloroplast and		keith Wilson and	
	mitochondria		walker	

	(practical)			
March 28-30 2020				
(Day Order 1 & 2)		REVISIO	N	

Course Schedule – November to April 2020

Department : Botany

Name/s of the Faculty : Dr. H. Shakila

Course Title : Bioinstrumentation

Course Code : 15BT/AE/BI45

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1: Centrifugation –	Lecture	Plant	
(Day Order 1 to 6)	1.1Bench, Ultracentrifuge,	ОНР	Microtechnique	
	Refrigerated, continuous		& Microscopy by	
	flow and & Microfuge		Steven	
Nov 22 –29, 2019	1.2Density gradient and	Lecture	Plant	
(Day Order 1 to 6)	Differential	ОНР	Microtechnique	
	Centrifugation		& Microscopy by	
			Steven	
	1.3Isolation of	Practical		
	Chloroplast	Truction		
Dec 2 – 7, 2019	Unit 2.1: Colorimeter –	Lecture cum	Biological	
(Day Order 1 to 6)	Beer-Lambert's Law,	demo of the various	Instrumentation	
	2.2Single Beam	components	and Methodology	
	Colorimeter		by P.K Bajpai	
Dec 9 – 16, 2019	2.3Colorimeter	Practical		
(Day Order 1 to 6)	determination of			
	Vit B-12			
Dec 17 – Jan 4, 2020	Unit 3.1:	Lecture	Biotechniques	
(Day Order 1 to 6)	Spectrophotometer –		theory and	
	single beam		practice by S.V.S	
			Rana	
Jan 6 - 11, 2020	3.2Spectrophotometer –	Lecture	Biotechniques	QUIZ

(Day Order 1 to 6)	Double beam		theory and	
			practice by S.V.S	
			Rana	
Jan 13 -23, 2020	3.3UV –Visible	Lecture cum	Biotechniques	
(Day Order 1 to 6)	Spectrophotometer	demo of the	theory and	
		various components of	practice by S.V.S	
		spectrophometers	Rana	
		(Double beam & UV)	Tuna	
Jan 24 -27, 2020	REVISION			
(Day Order 1 to 2)				
Jan 28 – Feb 1, 2020		C.A. Test	;	
Feb 03- 06, 2020	3.4Estimation of Protein	Practical	Biotechniques	
(Day Order 3 to 6)	using Spectrophotometer		theory and	
			practice by S.V.S	
			Rana	
Feb 07 -14, 2020	Unit 4.1: Chromatography	Lecture	Biological	
(Day Order 1 to 6)	– Paper and Thin layer,		Instrumentation	
			and Methodology	
			by P.K Bajpai	
Feb 17 – Feb 24, 2020	4.2Chromatography –	Lecture	Biological	
(Day Order 1 to 6)	Column, Ion Exchange,		Instrumentation	
	Affinity		and Methodology	
			by P.K Bajpai	
Feb 25 – March 03,	4.3GLC, HPLC &	Lecture	Biotechniques	Assignment
2020	RPHPLC	OHP	theory and	Submission
(Day Order 1 to 6)	4.4Separation of		practice by S.V.S	
	Chlorophyll by TLC and	Practical	Rana	
	Paper Chromatography			
March 04 – 11, 2020	Unit 5.1: Electrophoresis	Lecture and Guest	Handbook of	
(Day Order 1 to 6)	– Capillary, Gel –	Lecture	Capillary	
	Agarose	OHP	Electrophoresis	
	G		by James	
March 12 –18, 2020	5.2Electrophoresis –	Lecture	Handbook of	
	F		2.0 2.0 2.0 2.2 2.2	

(Day Order 1 to 6)	OFAGE, FIGE	OHP	Capillary	
			Electrophoresis	
			by James	
March 19 -27, 2020	5.3Immunoelectrophoresis	Lecture	Immunology -	
(Day Order 1 to 6)		ОНР	Dubey	
	5.4Separation of Proteins	Practical		
March 28-30 2020				
(Day Order 1 & 2)	REVISION			

Course Schedule – November to April 2020

Department : Botany

Name/s of the Faculty : Dr. H. Shakila

Course Title : Fundamentals of Horticulture

Course Code : 15BT/GE/FH23

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1.1.	Lecture	Introduction to	
(Day Order 1 to 6)	Introduction:		Horticulture by N.	Assignment on 5
	Divisions of		Kumar;	famous gardens of
	Horticulture		Horicultural	India
	1.2 History of		science by Janick	
	Gardening, Some famous		Complete	
	Gardens of		Gardening in India	
	India		by Gopalswamy	
			Iyengar	
Nov 22 –29, 2019	1.3 Types of	Lecture	Introduction to	
(Day Order 1 to 6)	Gardens:		Horticulture by N.	
	Indoor, Public		Kumar;	
	and Kitchen		Horicultural	
	garden		science by Janick	
Dec 2 – 7, 2019	Unit 2.1 Pot	Lecture through		
(Day Order 1 to 6)	cultures:	demonstration and	Horticulture	
	Selection of	PPT	Principles and	
	pots, potting		Practices by	
	Repotting and		George Acquaah	
	potting mixtures			
Dec 9 – 16, 2019	2.2 Vegetative	Lecture	Introduction to	
(Day Order 1 to 6)	propagation:		Horticulture by N.	
	Layering		Kumar	
	Cutting			

Dec 17 – Jan 4, 2020	2.2 Vegetative	Lecture through	Introduction to	
(Day Order 1 to 6)	propagation:	demonstration	Horticulture by N.	
	Grafting		Kumar	
Jan 6 - 11, 2020	Unit 3.1	Lecture	Introduction to	
(Day Order 1 to 6)	Gardening		Horticulture by N.	
	operation:		Kumar;	
	Planting,		Fundamentals of	
	Transplanting,		Horticulture by	
	Pinching,		Edmund,Sen et.al.	
	Disbudding,			
	Defoliation,			
	Staking,			
	Pruning,			
	Staking,			
Jan 13 -23, 2020	3.1 Gardening	Lecture		
(Day Order 1 to 6)	operation:	Cum	-do-	
	watering,	PPT		
	Mulching and			
	Topiary.			
	3.2 Ornamental			
	garden and its			
	parts			
Jan 24 -27, 2020	REVISION			
(Day Order 1 to 2)				
Jan 28 – Feb 1, 2020		C.A	. Test	
Feb 03- 06, 2020	Unit 4.1. Lawn	Lecture through	Horicultural	
(Day Order 3 to 6)	and Lawn	PPT; Exposing	science by Janick	
	making	the College garden	Fundamentals of	
			Horticulture by	
			Edmund,Sen et.al.	
			Introduction to	
			Horticulture by N.	
			Kumar	
	I	1	1	

Feb 07 -14, 2020	4.2 Rockery	Lecture through	Horicultural	
(Day Order 1 to 6)		PPT	science by Janick	
			Fundamentals of	
			Horticulture by	
			Edmund,Sen et.al.	
			Introduction to	
			Horticulture by N.	
			Kumar	
Feb 17 – Feb 24, 2020	4.3. Terrarium	Lecture through	Introduction to	
(Day Order 1 to 6)		PPT and	Horticulture by N.	
		demonstration	Kumar	
Feb 25 – March 03, 2020		Lecture through	Introduction to	
(Day Order 1 to 6)	4.4. Bonsai	PPT and	Horticulture by N.	
		demonstration	Kumar	
March 04 – 11, 2020	Unit 5.1	Lecture	Introduction to	
(Day Order 1 to 6)	Commercial		Horticulture by N.	
	floriculture:		Kumar	
	Economic			
	flowers-Rose			
	and Jasmine			
March 12 –18, 2020	5.2.Cut Flowers			
(Day Order 1 to 6)	.Importance and	Lecture & PPT	-do-	Practical-
	methods to			Developing an art
	prolong vase			of preparing
	life			flower vase –III
	5.3.Flower			component
	arrangement-			
	Fresh and dry			
March 19 -27, 2020				
(Day Order 1 to 6)	5.4.Flower	Demonstration	-do-	
	arrangement-			
	Fresh and dry			
	(Practicals)			

March 28-30 2020	
(Day Order 1 & 2)	REVISION

Course Schedule – November to April 2020

Department : Botany

Name/s of the Faculty : Ms.Antony Rose Immaculate. C

Course Title : Waste Management

Course Code : 15BT/GE/WM23

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit1	Lecture through	A Textbook of	Model wealth out
(Day Order 1 to 6)	Introduction 1.1.Solid waste &Liquid waste 1.2. Waste	PPT	environmental Sciences by Purohit Environmental	waste
	generation and sources- Municipal, Kitchen, Garden, Agriculture & industrial		Biotechnology, Battacharya	
Nov 22 –29, 2019	Unit 2 Recycling	Lecture	Vermicomposting	
(Day Order 1 to 6)	of waste 2.1. Composting- Principles, process		for sustainable Agriculture by Gupta, P. K.	
	and factors affecting composting 2.2. Biodung method	Practical	Vermicology by Ismail, S.A.	
Dec 2 - 7, 2019	2.3. Vermiculture	Lecture cum PPT	-do-	
(Day Order 1 to 6)	Biotechnology: Types of earth worms, Culturing of earthworms, Vermibed maintenance		Vermiculture and organic farming by Sathe	
Dec 9 – 16, 2019	2.4.	Lecture cum		
(Day Order 1 to 6)	Vermicomposting: Principle and process 2.5. Types of vermicomposting- Heap and Pit Method	demo	-do-	

Dec 17 – Jan 4, 2020	Unit 3	Lecture through	A Textbook of	
(Day Order 1 to 6)	Sewage Disposal	PPT	environmental	
(Day Order 1 to 6)	3.1. Primary		Sciences by	
	treatment		Purohit	
	3.2. Secondary		Microbiology by	
	Treatment-Septic		Prescott, Harley	
	tanks, Trickling		and Klein	
	filters and			
	oxidation pond			
Jan 6 - 11, 2020	Anaerobic -	Lecture	-do-	
(Day Order 1 to 6)	Sludge digestion			
(24) 3141 1 10 0)	Tertiary			
	Treatment-			
	Chemical, Ozone			
	and Reverse			
X 12 22 2020	Osmosis	T .	36' 1' 1	
Jan 13 -23, 2020	Unit 4 Bio	Lecture	Microbiology by	
(Day Order 1 to 6)	monitoring of		Powar (Vol. 2)	
,	Water Quality		Analysis of waste	
	andWater		water for use in	
	Purification		Agriculture by	
	4.1. Test for water		Rachel	
	purity- coliform			
	test and Membrane Filte			
	Test for water			
	purity- coliform test and			
	Membrane Filter			
	technique r			
	technique			
	teeninque			
Jan 24 -27, 2020		Practical	Analysis of waste	
(Day Ondan 1 to 2)	4.2. Testing for		water for use in	
(Day Order 1 to 2)	purity of water-		Agriculture by	
	Coliform test		Rachel	
Jan 28 – Feb 1, 2020		C.A	. Test	
Feb 03- 06, 2020	4.2. Physical	Practical	Analysis of waste	
, i	Analysis of water-	- 14041041	water for use in	
(Day Order 3 to 6)	pH, Color,		Agriculture by	
	F,,		Rachel	
Feb 07 -14, 2020	4.2. Testing for	Practical	Analysis of waste	
, i	purity Turbidity,		water for use in	
(Day Order 1 to 6)	TDS, chemical		Agriculture by	
	Analysis of water		Rachel	
	– salinity,			
Feb 17 – Feb 24, 2020	4.2. Hardness and	Practical &	-do-	
,	nitrate content	Lecture		
(Day Order 1 to 6)	4.3. Water			
	treatment – steps			
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	Analysis of water – salinity, 4.2. Hardness and nitrate content 4.3. Water		Rachel	

(Day Order 1 & 2)		REV	ISION	
March 28-30 2020				
(Day Order 1 to 6)				
March 19 -27, 2020	5.2. E-waste	-do-	-do-	
(Day Order 1 to 6)			waste Management by NIIR Board	- 2005
March 12 –18, 2020	5.1. Recycling of paper	Practical work	Modern Technology of	Assignment
	of wastes 5.1. Recycling of paper	Described and	waste Management by NIIR Board	
(Day Order 1 to 6)	Transformation	PPT	Technology of	
Feb 25 – March 03, 2020 (Day Order 1 to 6) March 04 – 11, 2020	Purification Plant 4.3. Water treatment – steps involved in water Treatment in a typical water purification plant Unit 5	Practical & Lecture Lecture through	-do- Modern	
	involved in water Treatment in a Typical Water			

Course Schedule – November to April 2020

Department : BOTANY

Name/s of the Faculty : Dr. H. Shakila

Course Title : Plant Biotechnology & Genetic Engineering

Course Code : 15BT/MC/PG64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1	Lecture cum	Elements of	
(Day Order 1 to 6)	1.1.Totipotency,Culture	demonstration	biotechnology	
	techniques:Equipment,Media,		by Gupta P.K	
Nov 22 –29, 2019	1.1. Explant, Callus	Lecture and PPT	Biotechnology	
(Day Order 1 to 6)	formation, Organogenesis.	Lecture and 111	by	
(Day Order 1 to 0)				
	1.2. Root culture, Shoot culture		Satyanarayana	
Dec 2 – 7, 2019	1.2. Anther and pollen culture	Lecture and PPT	Biotechnology	
(Day Order 1 to 6)	1.3. Cell Culture, Protoplast		by	
	culture- Isolation, culture and		Satyanarayana	
	Regeneration			
Dec 9 – 16, 2019	1.4 Somaclonal Variation	Lecture	Elements of	
(Day Order 1 to 6)	1.5. Somatic hybridization		biotechnology	
	and Cybrid: Spontaneous and		by Gupta P.K	
	induced fusion			
	1.6. Applications:			
	Horticulture, Pharmaceutical			
	industry			
Dec 17 – Jan 4, 2020	Unit 2.1.Transgenic plants	Lecture	A Text book of	QUIZ
(Day Order 1 to 6)	for crop improvement:		Biotechnology	
	Herbicide resistance, Insect		by Dubey R.C	
	resistance, Resistance against			

	viral, bacterial and fungal			
	pathogens			
Jan 6 - 11, 2020	2.2. Transgenic plants-Edible	Lecture	A Text book of	
(Day Order 1 to 6)	vaccines: Transgenic plants		Biotechnology	
	as recombinant protein		by Dubey R.C	
	production systems, choice of			
	plant species for recombinant			
	vaccine production			
Jan 13 -23, 2020	2.2 GM Plants: Bt Brinjal,	Lecture	A Text book of	
(Day Order 1 to 6)	Cotton, Golden Rice		Biotechnology	
			by Dubey R.C	
Jan 24 -27, 2020	REVISION			
(Day Order 1 to 2)				
Jan 28 – Feb 1, 2020		C.A. Test	1	
Feb 03- 06, 2020	2.3 Bioethics and Biosafety	Lecture and	Industrial	
(Day Order 3 to 6)	Unit 3.1 Bioethanol	OHP	Microbiology by	
			Patel. A.H	
Feb 07 -14, 2020	3.2 Biohydrogen and Gobar	Lecture and	Industrial	ASSIGNMENT
(Day Order 1 to 6)	gas	ОНР	Microbiology by	SUBMISSION
	3.3 Bio diesel : Petroplants		Patel. A.H	
Feb 17 – Feb 24, 2020	Unit 4.1 Introduction to	Lecture and PPT	Biotechnology	
(Day Order 1 to 6)	Genetic Engineering		by	
	4.2 Techniques: Restriction		Satyanarayana	
	Endonucleases, Ligation			
Feb 25 – March 03,	4.3 Cloning Vectors: pUC 18,	Lecture	Biotechnology	
2020	YAC and BAC		by	
(Day Order 1 to 6)	4.4 Genomic Libraries		Satyanarayana	
March 04 – 11, 2020	4.5 Hybridization – Southern	Lecture	Elements of	
(Day Order 1 to 6)	and Northern Blotting		biotechnology	
			by Gupta P.K	
March 12 –18, 2020	Unit 5.1 Target cells for	Lecture	Biotechnology	
(Day Order 1 to 6)	Transformation		by	
	<u> </u>	l		<u>I</u>

	5.2 Gene Transfer Technique		Satyanarayana
	using Agrobacterium		
March 19 -27, 2020	5.3 Physical Delivery	Lecture	Biotechnology
(Day Order 1 to 6)	Methods: PEG stimulated,		by
	Microprojectile,		Satyanarayana
	Electroporation		
March 28-30 2020		1	,
(Day Order 1 & 2)		REVISION	

Course Schedule – November 2019 to April 2020

Department : Botany

Name/s of the Faculty : Ms.Antony Rose Immaculate

Course Title : Plant Physiology
Course Code : 15BT/MC/PP64

Week & No. of hours	Units & Topics	Teaching Methodology	Text &	Method of
Nov 15 – 21, 2019 (Day Order 1 to 6)	Unit 1: Water relations in plants 1.1 Water potential 1.2 Transpiration: Mechanism of stomatal transpiration, ATP driven exchange pump, Role of ABA in stomatal opening & Closure	Methodology Lecture with Demo on water potential in plants – Chardokaff method	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K Plant Physiology by Taiz and Zeiger	Evaluation
Nov 22 –29, 2019 (Day Order 1 to 6)	1.3 Water movement across the root and xylem Unit 2: Mineral nutrients: 2.1 Micro and Macro nutrients	Lecture	Text Book of Plant Physiology by Verma. V	Assignment on Micro & Macro nutrients
Dec 2 – 7, 2019 (Day Order 1 to 6)	2.2 Mechanism of mineral salt absorption: Theories 2.3 Transport of organic solutes 2.3 Phloem loading and unloading	Lecture & PPT	Text Book of Plant Physiology by Verma. V Plant physiology by Salisbury & Ross	
Dec 9 – 16, 2019 (Day Order 1 to 6)	2.4 Source of Nitrogen, Biochemistry of Nitrogen fixation	Lecture	Text Book of Plant Physiology by Verma. V	

Dec 17 – Jan 4, 2020	Unit 3:	Lecture	Plant Physiology	
(Day Order 1 to 6)	Photosynthesis		by Devlin	
(Day Order 1 to 0)	3.1 Principles of		Modern plant	
	light absorption by		Physiology by	
	plants		Sinha. R.K	
Jan 6 - 11, 2020	Unit 3:	Lecture	Plant Physiology	
(Day Order 1 to 6)	Photosynthesis		by Devlin	
(Day Order 1 to 0)	3.1 Principles of		Modern plant	
	light absorption by		Physiology by	
	plants		Sinha.R.K	
Jan 13 -23, 2020	3.2	Lecture & PPT	Plant Physiology	
(Day Order 1 to 6)	CO ₂ assimilation		by Devlin	
(Day Order 1 to 0)	pathway: C3, C4		Modern plant	
	cycles and CAM,		Physiology by	
	Photorespiration		Sinha. R.K	
Jan 24 -27, 2020	Factors influencing	Lecture cum	Plant Physiology	
(Day Order 1 to 2)	photosynthesis&	demo	by Noggle & Fritz	
,	Revision			
Jan 28 – Feb 1, 2020		C.A.	Test	
Feb 03- 06, 2020	Unit 4:	Lecture cum	Plant Physiology	
(Day Order 3 to 6)	Respiration	demonstration on	by Devlin	
(Day Order 5 to 0)	4.1 Respiratory	fermentation &	Modern plant	
	quotient,	Estimation of	Physiology by Sinha. R.K	
	Fermentation and	Respiratory	Silina. K.K	
	Anaerobic	Quotient		
Feb 07 -14, 2020	processes 4.2 Glycolysis,	Lecture	Plant Physiology	
,	Substrate level	Lecture	by Devlin	
(Day Order 1 to 6)	phosphorylation		Modern plant	
	Entner-Doudroff		Physiology by	
	pathway,		Sinha. R.K	
	Glyoxylate cycle.			
Feb 17 – Feb 24, 2020	4.3 Krebs cycle,	Lecture & PPT	Plant Physiology	
,	Electron flow	Lecture & III	by Devlin	
(Day Order 1 to 6)	components		Modern plant	
	Electron Transport		Physiology by	
	pathway, Oxidative		Sinha. R.K	
	phosphorylation			
	and Cyanide			
	resistant pathway			
Feb 25 – March 03, 2020	Unit 5: Growth		Text Book of	
(Day Order 1 to 6)	and Growth	-do-	Plant Physiology	Quiz
	Regulators		by Verma. V	
	5.1 Growth:		Plant Physiology by Noggle & Fritz	
	Kinetics and growth curve		by Noggle & FIIIZ	
	growni curve			

	5.2 Chemical Nature, Bioassay, Physiological effect and practical applications of Auxin, ABA.			
March 04 – 11, 2020 (Day Order 1 to 6)	5.2 Cytokinin, Gibberellic acid and Ethylene	Lecture & demonstration on the responses of plants to hormones	Text Book of Plant Physiology by Verma. V Plant Physiology by Noggle & Fritz	
March 12 –18, 2020 (Day Order 1 to 6)	5.3Photoperiodism, Florigen concept	Lecture	Text Book of Plant Physiology by Verma. V& Plant Physiology V.K. Jain	
March 19 -27, 2020 (Day Order 1 to 6)	5.3 Vernalization Revision	Lecture	Text Book of Plant Physiology by Verma. V Plant Physiology by Bidwell	
March 28-30 2020 (Day Order 1 & 2)		REVI	SION	

Course Schedule – November to April 2020

Department : BOTANY

Name/s of the Faculty : Dr. S.SATHYA BAMA

Course Title : HORTICULTURE

Course Code : 15BT/ME/HC55

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit1.1. Classification of	Lecture through		
(Day Order 1 to 6)	Horticultural plants	chalk and board		
			Introduction to	
	Unit 1.2 Garden	Lecture showing	Horticulture by	
	Implements	garden	Kumar N	
		implements	Horticulture by	
	Unit 1.3.Garden and its	Lecture through	Sheela V L	
	components: Fencing	power point		
	hedge, borders	presentation		
Nov 22 –29, 2019	Unit 1.3. Garden and its	Lecture through	Introduction to	
(Day Order 1 to 6)	components: Flower beds,	power point	Horticulture by	
	Edging and Lawn, Drives	presentation	Kumar N	
	and Paths, Water garden	Visit to various	Horticulture by	
	and Garden adornments	gardens of Stella	Sheela V	
		Maris College		
Dec 2 – 7, 2019	Unit 1.4.Vegetative	Lecture through	-do-	
(Day Order 1 to 6)	Propagation: Layering and	Chalk and Board	Horticulture	
	Grafting	method	Principles and	
			Practices by	
			George Acquaah	

Dec 9 – 16, 2019	Unit 1.4.Vegetative	Lecture through	-do-	Quiz from Unit 1
(Day Order 1 to 6)	Propagation: Budding	Chalk and Board	Horticultural	
		method	Science by Janick	
	Unit 1.5. Vegetative	Practical exposure		
	propagating methods	to propagating		
		methods		
Dec 17 – Jan 4,	Unit 2.1.1. Propagation,	Lecture through	South Indian fruits	
2020	planting and harvesting of	power point	and their culture	
(Day Order 1 to 6)	fruits: Mango, Banana and	presentation	by K.C. Naik	
	Guava			
Jan 6 - 11, 2020	Unit 2.1.2. Propagation,	Lecture through	Vegetative	
(Day Order 1 to 6)	planting and harvesting of	power point	production in	
	vegetative crops: Onion,	presentation	India by D.V.S.	
	Potato, Brinjal and Lady's		Chauhan	
	finger			
Jan 13 -23, 2020	Unit3.1 & 3.2: Growing	Lecture through	Introduction to	
(Day Order 1 to 6)	plants in Pots, Potting and	practical exposure	Horticulture by	
	Repotting		Kumar N	
	Unit 3.3: Hanging Basket		Horticulture by	
			Sheela V L	
Jan 24 -27, 2020	Unit 3.4: Kitchen Garden –	Lecture through	Horticulture by V.	
(Day Order 1 to 2)	Layout	practical exposure	L. Sheela	
			Introduction to	
			Horticulture by	
			Kumar N	
			Horticulture	
			Principles and	
			Practices by	
			George Acquaah	
Jan 28 – Feb 1,		C.A. Tes	t	

Feb 03- 06, 2020				
1 00 03- 00, 2020	Unit 3.5: Market Garden	Lecture through	Introduction to	
(Day Order 3 to 6)	and Truck Garden	chalk and board	Horticulture by	
			Kumar N	
			Vegetable	
			Production in	
			India by Chauhan	
			Vegetable crops of	
			India by Yawalker	
Feb 07 -14, 2020	Unit 3.6: Rock Garden and	Lecture through	Ornamental	
(Day Order 1 to 6)	Terrace Garden	practical exposure	Horticulture in	
	Unit 3.7: Vegetable	Lecture through	India, Today and	
	Forcing	chalk and board	Tomorrow by	
			Randhawa G S	
Feb 17 – Feb 24,	Unit 4.1: Lawn making	Lecture through		
2020	and its Maintenance	PPT and by	Introduction to	
(Day Order 1 to 6)		exposing the	Horticulture by	
		Lawn at the main	Kumar N	
		garden of Stella	Ornamental	
		Maris College	Horticulture in	
			India, Today and	
			Tomorrow by	
			Randhawa, G S	
Feb 25 – March	Unit 4.2 Landscape	Lecture through	Horticulture in	
03, 2020	Gardening	power point	India, Today and	
(Day Order 1 to 6)		presentation	Tomorrow by	
			Randhawa, G S	
			Horticultural	
			Science by Janick	
March 04 – 11,	Unit.5.1: Cut Flower	Lecture through	Introduction to	Flower
2020	Arrangement: Fresh and	power point	Horticulture by N.	Arrangement
(Day Order 1 to 6)	Dry	presentation	Kumar	

		Practical	Introduction to
		demonstration	Horticulture by
			Kumar N
			Horticulture
			Principles and
			Practices by
			George Acquaah
March 12 –18,	Unit 5.2: Economic	Lecture through	Introduction to
2020	Flowers: Rose and Jasmine	chalk and board	Horticulture by
(Day Order 1 to 6)		method	Kumar N
	Unit 5.3: Bonsai	Lecture through	Complete
		PPT and practical	gardening in India
		exposure	by Gopalswamy
			Iyengar, K. S
March 19 -27,	Unit 5.4: Terrarium	Lecture through	Introduction to
2020		practical	Horticulture by
(Day Order 1 to 6)		demonstration	Kumar N
March 28-30 2020		ı	1
(Day Order 1 & 2		REVISIO	ON
)			

Course Schedule – November to April 2020

Department : BOTANY

Name of the Faculty : DR. S. DIANA VINODHINI

Course Title : ANALYTICAL TECHNIQUES IN PLANT SCIENCES

Course Code : 15BT/ME/AT55

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit 1	Lecture	Biological	
(Day Order 1 to 6)	Microscopy-principle,	ОНР	Instrumentation	
	construction and		and Methodology	
	application of light		by P.K Bajpai	
	microscopes			
	1.1 Compound, Stereo,			
	Polarized light, Phase			
	contrast, Fluorescence,			
	Differential interference			
	contrast, Laser Scanning			
	and confocal micoscopes			
Nov 22 –29, 2019	1.2 Preparation of	Lecture	Plant	
(Day Order 1 to 6)	specimen for light	ОНР	Microtechnique &	
	microscopy:		Microscopy by	
	Paraffin techniques-		Steven E. Ruzin	
	Fixatives: FAA,			
	Carnoy's, Dehydration			
	and Infiltration,			
	Embedding and			
	sectioning (Paraffin			
	blocks)			
Dec 2 – 7, 2019	1.2 Staining- single and	Lecture	Plant	Assignment
(Day Order 1 to 6)	double stain and	ОНР	Microtechnique &	
	mounting		Microscopy by	
	1.3 Micrometry		Steven E. Ruzin	

	1.4 Microtomes: Rotary,		Botanical
	wood microtome,		histochemistry by
	Cryotomy, Ultra		Jensen
	microtomy		
	1.5 Maceration, Leaf		
	clearing		
Dec 9 – 16, 2019	Unit 2	Lecture and ppt	Biological
(Day Order 1 to 6)	Electron microscopy –		Instrumentation
	principle, construction		and Methodology
	and working		by P.K Bajpai
	2.2 preparation of		
	specimen for		
	Transmission Electon		
	Microscopy (TEM)		
	2.2.1 Fixatives –		
	Glutaraldehyde and		
	osmium tetraoxide		
	2.2.2 Embedding –		
	Spurr, Epon		
	2.2.3 Knives		
Dec 17 – Jan 4, 2020	2.2.4 Specimen support	Lecture and	Plant
(Day Order 1 to 6)	– Grid	ppt	microtechnique
	2.2.5 Staining – Positive		and microscopy
	and Negative staining		by steven Ruzin
	2.3 Preparation of		
	specimen for Scanning		
	Electron Microscope		
	(SEM)		
	2.3.1 Fixing, Critical		
	point Drying		
	2.3.2 Freeze Drying,		
	Freeze Fracture, Freeze		
	Etching		
	2.3.3 Specimen Coating		
	- Sputter coating,		

Jan 6 - 11, 2020 Unit 3 Lecture cum demo Biological Instrumentation and Methodology S.1 pH Meter - Construction and application application 3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation Instrumentation Biological Instrumentation Instrumentation Biological Instrumentation Instrumentation Biological Instrumentation Biological Instrumentation Instrumentation Biological Instrumentation Biological Instrumentation Instrumentation Instrumentation Biological Instrumentation Instrumentation	
techniques 3.1 pH Meter – construction and application 3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation components Lecture cum demo of the various components of spectrophotometers spectrophotometers and Methodology by P.K Bajpai by P.K Bajpai	
3.1 pH Meter — Lecture cum demo of the various application components of spectrophotometers 3.2 Colorimetry: Beer-Lamberts law, single beam 3.3 Spectrophotometry-UV Visible spectroscopy basic principle and instrumentation by P.K Bajpai by P.K Bajpai by P.K Bajpai by P.K Bajpai	
construction and application components of 3.2 Colorimetry: Beer-Lamberts law, single beam 3.3 Spectrophotometry-UV Visible spectroscopy basic principle and instrumentation of the various components of spectrophotometers	
application 3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation components of spectrophotometers	
3.2 Colorimetry: Beer- Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation spectrophotometers	
Lamberts law, single beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation	
beam 3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation	
3.3 Spectrophotometry- UV Visible spectroscopy basic principle and instrumentation	
UV Visible spectroscopy basic principle and instrumentation	
basic principle and instrumentation	
instrumentation	
Jan 13 -23, 2020 3.3 Single and double Lecture cum demo Biotechniques	
(Day Order 1 to 6) beam of the various theory and	
spectrophotometers components of practice by S.V.S	
(block diagrams only) spectrophotometers Rana	
3.4 Estimation of protein (Double beam &	
using spectrophotometer UV)	
(practical)	
Practical	
Jan 24 -27, 2020 REVISION	
(Day Order 1 to 2)	
Jan 28 – Feb 1, 2020 C.A. Test	_
Feb 03- 06, 2020 Unit 4 Lecture cum demo of Biotechniques	
(Day Order 3 to 6) Separation the various tehniques theory and	
techniques of chromatography practice by S.V.S	
4.1 chromatography Rana	
– principles,	
techniques and	
application of thin	
layer	

	chromatography			
Feb 07 -14, 2020	4.1 Column	Lecture with ppt	Analytical	
(Day Order 1 to 6)	chromatography and		chemistry by	
	High performance		keith Wilson and	
	liquid		walker	
	chromatography			
Feb 17 – Feb 24, 2020	4.2 Electrophoresis:	Lecture cum Practical	Analytical	Quiz
(Day Order 1 to 6)	principles,		chemistry by	
	techniques and		keith Wilson and	
	applications of		walker	
	agarose, PAGE			
	4.3 Separation of			
	proteins and DNA			
	by electrophoresis			
	(Practical)			
Feb 25 – March 03,	Unit 5	Lecture cum demo	Biotechniques	
2020	Centrifugation		theory and	
(Day Order 1 to 6)	5.1 Centrifuge:		practice by S.V.S	
	principle, unit of		Rana	
	measurement and			
	instrumentation			
March 04 – 11, 2020	5.2 Types: Bench,	Lecture cum demo	Biotechniques	
(Day Order 1 to 6)	ultra centrifuge,		theory and	
	Analytical and		practice by S.V.S	
	microfuge		Rana	
March 12 –18, 2020	5.3 Density gradient	Lecture cum demo	Analytical	
(Day Order 1 to 6)	and differential		biochemistry by	
	centrifugation		Asokan	
March 19 -27, 2020	5.4 centrifuge –	practical	Analytical	
(Day Order 1 to 6)	isolation of		chemistry by	
	chloroplast and		keith Wilson and	
	mitochondria		walker	

	(practical)			
March 28-30 2020				
(Day Order 1 & 2)		REVISIO	N	

Course Schedule – November to April 2020

Department : Botany

Name/s of the Faculty : Ms.Antony Rose Immaculate. C

Course Title : Waste Management

Course Code : 15BT/GE/WM23

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	Unit1	Lecture through	A Textbook of	Model wealth out
(Day Order 1 to 6)	Introduction 1.1.Solid waste &Liquid waste 1.2. Waste	PPT	environmental Sciences by Purohit Environmental	waste
	generation and sources- Municipal, Kitchen, Garden, Agriculture & industrial		Biotechnology, Battacharya	
Nov 22 –29, 2019	Unit 2 Recycling	Lecture	Vermicomposting	
(Day Order 1 to 6)	of waste 2.1. Composting- Principles, process		for sustainable Agriculture by Gupta, P. K.	
	and factors affecting composting 2.2. Biodung method	Practical	Vermicology by Ismail, S.A.	
Dec 2 - 7, 2019	2.3. Vermiculture	Lecture cum PPT	-do-	
(Day Order 1 to 6)	Biotechnology: Types of earth worms, Culturing of earthworms, Vermibed maintenance		Vermiculture and organic farming by Sathe	
Dec 9 – 16, 2019	2.4.	Lecture cum		
(Day Order 1 to 6)	Vermicomposting: Principle and process 2.5. Types of vermicomposting- Heap and Pit Method	demo	-do-	

Dec 17 – Jan 4, 2020 (Day Order 1 to 6) Unit 3 Sewage Disposal 3.1. Primary treatment 3.2. Secondary Treatment-Septic tanks, Trickling filters and Lecture through PPT A Textbook of environmental Sciences by Purohit Microbiology by Prescott, Harley and Klein	
treatment 3.2. Secondary Treatment-Septic tanks, Trickling filters and	
3.2. Secondary Treatment-Septic tanks, Trickling filters and Microbiology by Prescott, Harley and Klein	
Treatment-Septic tanks, Trickling filters and Prescott, Harley and Klein	
tanks, Trickling filters and and Klein	
filters and	
oxidation pond	
Jan 6 - 11, 2020 Anaerobic - Lecture -do-	
(Day Order 1 to 6) Sludge digestion	
Tertiary	
Treatment-	
Chemical, Ozone	
and Reverse	
Osmosis	
Jan 13 -23, 2020 Unit 4 Bio Lecture Microbiology by	
(Day Order 1 to 6) monitoring of Powar (Vol. 2)	
Water Quality Analysis of waste	
andWater water for use in	
Purification Agriculture by	
4.1. Test for water Rachel	
purity- coliform	
test and Membrane Filte	
Test for water	
purity- coliform test and	
Membrane Filter	
technique r	
technique	
teeninque	
Jan 24 -27, 2020 Practical Analysis of waste	
(Day Order 1 to 2) 4.2. Testing for water for use in	
(Day Order 1 to 2) Converted to 2 Converted to 2 Converted to 3 Converted to 4 C	
Coliform test Rachel	
Jan 28 – Feb 1, 2020 C.A. Test	
Feb 03- 06, 2020 4.2. Physical Practical Analysis of waste	
Analysis of water-	
(Day Order 3 to 6) PH, Color, Water by Agriculture by	
Rachel	
Feb 07 -14, 2020 4.2. Testing for Practical Analysis of waste	
purity Turbidity water for use in	
(Day Order 1 to 6) Day Order 1 to 6 Purity Turbidity, Water 10 use in Agriculture by	
Analysis of water Rachel	
– salinity,	
Feb 17 – Feb 24, 2020 4.2. Hardness and Practical & -do-	
nitrate content I ecture	
(Day Order 1 to 6) 4.3. Water	
treatment – steps	

(Day Order 1 & 2)	REVISION			
March 28-30 2020				
(Day Order 1 to 6)				
March 19 -27, 2020	5.2. E-waste	-do-	-do-	
(Day Order 1 to 6)			waste Management by NIIR Board	
March 12 –18, 2020	5.1. Recycling of paper	Practical work	Modern Technology of	Assignment
	of wastes 5.1. Recycling of paper	D (1 1 1	waste Management by NIIR Board	
(Day Order 1 to 6)	Transformation	PPT	Technology of	
Feb 25 – March 03, 2020 (Day Order 1 to 6) March 04 – 11, 2020	Typical Water Purification Plant 4.3. Water treatment – steps involved in water Treatment in a typical water purification plant Unit 5	Practical & Lecture Lecture through	-do-	
	involved in water Treatment in a			

Course Schedule – November to April 2020

Department : Botany

Name/s of the Faculty : Dr. Geradette Davey

Course Title : Genetics, Plant Breeding and Evolution

Course Code : 15BT/MC/GP64

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019	1.1 Mendelian	Lecture	Cytology,	Quiz
(Day Order 1 to 6)	Genetics		Genetics and	
			Evolution by	
			Gupta, P.K.	
Nov 22 –29, 2019	1.2 Gene	Problem- Solving	Fundamentals of	
(Day Order 1 to 6)	interactions		Genetics	
			by Singh, B.D.	
Dec 2 – 7, 2019	1.2 Gene	Problem- Solving	The Science of	
(Day Order 1 to 6)	interactions and		Genetics by	
	1.3 Multiple		Burns, G.W.	
	Gene			
	Inheritance			
Dec 9 – 16, 2019	1.4 Extra -	Lecture	Essentials of	
(Day Order 1 to 6)	Chromosomal		Genetics by	
	Inheritance		Klug, H.N. Klug, W.S. and-	
	2.1 Linkage in		Cummings, M. R.	
	Maize			
Dec 17 – Jan 4, 2020	2.2 Theories of	Lecture	Genetics by/	
(Day Order 1 to 6)	Crossing Over		Strickberger,	
	2.3 Mapping of		M.W.	
	Genes			
	2.4 Sex			
	Determination			
	in Melandrium			
Jan 6 - 11, 2020	2.5 Sex-	Lecture	Fundamentals of	Assignment
(Day Order 1 to 6)	linkage in Man		Genetics by	

	3.1 Down's		Singh, B.D
	Syndrome		Textbook of
	3.2 Klinefelter's		human genetics
	Syndrome		Levitan, M
	3.3 Sickle Cell		
	Anaemia		
Jan 13 -23, 2020	3.4 Genetic	Case Study	Practical
(Day Order 1 to 6)	Counselling		Genetic
			Counselling by
			Harper, P.S.
Jan 24 -27, 2020	Revision		
(Day Order 1 to 2)			
Jan 28 – Feb 1, 2020			C.A. Test
Feb 03- 06, 2020	4.1 Objectives	Lecture	Elementary
(Day Order 3 to 6)	of Plant		Principles of Plant
	Breeding		Breeding by
			Chaudhari, H.K.
Feb 07 -14, 2020	4.2 Selection	Lecture	Plant Breeding by
(Day Order 1 to 6)	Methods		Kumaresan, V.
Feb 17 – Feb 24, 2020	4.3 Basic	Lecture	Plant Breeding:
(Day Order 1 to 6)	Hybridization		Principles and
	Techniques		Methods by
			Singh, B. D.
Feb 25 – March 03, 2020	4.4 Induced	Lecture	Principles of Plant
(Day Order 1 to 6)	Polyploidy in		Breeding by
	Plant Breeding		Allard, R.W.
March 04 – 11, 2020	5.1 Origin of	Lecture	Cell Biology,
(Day Order 1 to 6)	Life		Genetics,
			Molecular
			Biology,
			Evolution and
			Ecology by
			Verma, P.S. and

			Agarwal, V.K.
March 12 –18, 2020 (Day Order 1 to 6)	5.2 Theories of Evolution	Lecture	The Evolution of Plants by Willis, K. J. and McElwain, J. C.
March 19 -27, 2020	5.3 Isolating	Lecture	Cytology,
(Day Order 1 to 6)	Mechanisms		Genetics and
			Evolution by
			Gupta, P.K.
March 28-30 2020		1	,
(Day Order 1 & 2)	REVISION		