

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

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

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

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019 (Day Order 1 to 6)	1.1 Meristems: Classification, Organisation of shoot apex and root apex. 1.2. Lateral meristems: Vascular cambium- structure and formation.	Lecture using PPT	Plant Anatomy by B.P.Pandey Anatomy of Seed Plants by Singh, V., P.C. Pande and D.K. Jain	
Nov 22 – 29, 2019 (Day Order 1 to 6)	1.3. Cork Cambium: Periderm -Phellem, Phellogen and Phelloderm, Development, location, Morphology of Bark, commercial bark, Protective tissues of monocot and Lenticels.	Lecture through Chalk and board method (To teach students the technique and scientific method of drawing different types of cells	-do- Plant Anatomy by Fahn	
Dec 2 – 7, 2019 (Day Order 1 to 6)	2.1. Secondary xylem: vessels, Tracheids, Wood parenchyma and rays, Sap wood, heartwood, Annual rings, Dendrochronology.	-do-	-do- Applied Plant Anatomy by Cutter, D.F	Assignment on Wood parenchyma and rays, Sap wood , Heart wood , 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 - <i>Dracaena</i> . 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 (Day Order 1 to 2)	REVISION			
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	Unit 4.1 Leaf Abscission	Lecture through chalk and board method	Anatomy of Seed Plants by Singh,V., P.C. Pande and D.K. Jain	
Feb 07 -14, 2020 (Day Order 1 to 6)	Unit 4.2 Epidermis – Stomata – Structure and Types Unit 4.3 Epidermal Hairs and Appendages	Lecture through chalk and board and practical	- Do-	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	Unit 5.1. Microsporangium: Microsporogenesis –Male gametophyte. Unit5.2.Megasporangium: Megasporeogenesis – Female gametophyte -- Monosporic (Polygonium)	Lecture through PPT and chalk and board method	Embryology of angiosperms by Bhojwani and Bhatnagar; Angiosperm Embryology by Muneeswaran	
Feb 25 – March 03, 2020 (Day Order 1 to 6)	Unit 5.2 Female Gametophyte - Bisporic (Allium) and tetrasporic (Peperomia)	-do-	-do-	Quiz from subunits, 5.1 & 5.2
March 04 – 11, 2020 (Day Order 1 to 6)	Unit5.3. Double Fertilization Apomixis	-do-	-do-	
March 12 –18, 2020 (Day Order 1 to 6)	Unit 5.4 Endosperm - Types and functions; Ruminant endosperm Unit 5.5 Development of Dicot Embryo- Capsella brusa pastoris	Lecture through Board and Chalk method	-do-	
March 19 -27,	Unit 5.5 Polyembryony	-do-	-do-	

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

	3.1 Down's Syndrome 3.2 Klinefelter's Syndrome 3.3 Sickle Cell Anaemia		Singh, B.D Textbook of human genetics Levitan, M..	
Jan 13 -23, 2020 (Day Order 1 to 6)	3.4 Genetic Counselling	Case Study	Practical Genetic Counselling by Harper, P.S.	
Jan 24 -27, 2020 (Day Order 1 to 2)	Revision			
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	4.1 Objectives of Plant Breeding	Lecture	Elementary Principles of Plant Breeding by Chaudhari, H.K.	
Feb 07 -14, 2020 (Day Order 1 to 6)	4.2 Selection Methods	Lecture	Plant Breeding by Kumaresan, V.	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	4.3 Basic Hybridization Techniques	Lecture	Plant Breeding: Principles and Methods by Singh, B. D.	
Feb 25 – March 03, 2020 (Day Order 1 to 6)	4.4 Induced Polyploidy in Plant Breeding	Lecture	Principles of Plant Breeding by Allard, R.W.	
March 04 – 11, 2020 (Day Order 1 to 6)	5.1 Origin of Life	Lecture	Cell Biology, 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 (Day Order 1 to 6)	5.3 Isolating Mechanisms	Lecture	Cytology, Genetics and Evolution by Gupta, P.K.	
March 28-30 2020 (Day Order 1 & 2)	REVISION			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
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	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	
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 (Day Order 1 to 6)	Unit 3: Photosynthesis 3.1 Principles of light absorption by plants	Lecture	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit 3: Photosynthesis 3.1 Principles of light absorption by plants	Lecture	Plant Physiology by Devlin Modern plant Physiology by Sinha.R.K	
Jan 13 -23, 2020 (Day Order 1 to 6)	3.2 CO ₂ assimilation pathway: C3, C4 cycles and CAM, Photorespiration	Lecture & PPT	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Jan 24 -27, 2020 (Day Order 1 to 2)	Factors influencing photosynthesis& Revision	Lecture cum demo	Plant Physiology by Noggle & Fritz	
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	Unit 4: Respiration 4.1 Respiratory quotient, Fermentation and Anaerobic processes	Lecture cum demonstration on fermentation & Estimation of Respiratory Quotient	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Feb 07 -14, 2020 (Day Order 1 to 6)	4.2 Glycolysis, Substrate level phosphorylation Entner-Doudroff pathway, Glyoxylate cycle.	Lecture	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	4.3 Krebs cycle, Electron flow components Electron Transport pathway, Oxidative phosphorylation and Cyanide resistant pathway	Lecture & PPT	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Feb 25 – March 03, 2020 (Day Order 1 to 6)	Unit 5: Growth and Growth Regulators 5.1 Growth: Kinetics and growth curve	-do-	Text Book of Plant Physiology by Verma. V Plant Physiology by Noggle & Fritz	Quiz

	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)	5.3 Photoperiodism, 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)	REVISION			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019 (Day Order 1 to 6)	Unit 1.1. Classification of Horticultural plants Unit 1.2 Garden Implements Unit 1.3. Garden and its components: Fencing hedge, borders	Lecture through chalk and board Lecture showing garden implements Lecture through power point presentation	Introduction to Horticulture by Kumar N Horticulture by Sheela V L	
Nov 22 – 29, 2019 (Day Order 1 to 6)	Unit 1.3. Garden and its components: Flower beds, Edging and Lawn, Drives and Paths, Water garden and Garden adornments	Lecture through power point presentation Visit to various gardens of Stella Maris College	Introduction to Horticulture by Kumar N Horticulture by Sheela V	
Dec 2 – 7, 2019 (Day Order 1 to 6)	Unit 1.4. Vegetative Propagation: Layering and Grafting	Lecture through Chalk and Board method	-do- Horticulture Principles and Practices by George Acquaah	

Dec 9 – 16, 2019 (Day Order 1 to 6)	Unit 1.4. Vegetative Propagation: Budding Unit 1.5. Vegetative propagating methods	Lecture through Chalk and Board method Practical exposure to propagating methods	-do- Horticultural Science by Janick	Quiz from Unit 1
Dec 17 – Jan 4, 2020 (Day Order 1 to 6)	Unit 2.1.1. Propagation, planting and harvesting of fruits: Mango, Banana and Guava	Lecture through power point presentation	South Indian fruits and their culture by K.C. Naik	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit 2.1.2. Propagation, planting and harvesting of vegetative crops: Onion, Potato, Brinjal and Lady's finger	Lecture through power point presentation	Vegetative production in India by D.V.S. Chauhan	
Jan 13 -23, 2020 (Day Order 1 to 6)	Unit 3.1 & 3.2: Growing plants in Pots, Potting and Repotting Unit 3.3: Hanging Basket	Lecture through practical exposure	Introduction to Horticulture by Kumar N Horticulture by Sheela V L	
Jan 24 -27, 2020 (Day Order 1 to 2)	Unit 3.4: Kitchen Garden – Layout	Lecture through practical exposure	Horticulture by V. L. Sheela Introduction to Horticulture by Kumar N Horticulture Principles and Practices by George Acquaah	
Jan 28 – Feb 1,	C.A. Test			

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

	Shadow casting			
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit 3 Quantitative 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	Lecture cum demo of the various components Lecture cum demo of the various components of spectrophotometers	Biological Instrumentation and Methodology by P.K Bajpai	
Jan 13 -23, 2020 (Day Order 1 to 6)	3.3 Single and double beam spectrophotometers (block diagrams only) 3.4 Estimation of protein using spectrophotometer (practical)	Lecture cum demo of the various components of spectrophotometers (Double beam & UV) Practical	Biotechniques theory and practice by S.V.S Rana	
Jan 24 -27, 2020 (Day Order 1 to 2)	REVISION			
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	Unit 4 Separation techniques 4.1 chromatography – principles, techniques and application of thin layer	Lecture cum demo of the various techniques of chromatography	Biotechniques theory and practice by S.V.S Rana	

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November to April 2020

Department : Botany
Name/s of the Faculty : Dr. H. Shakila
Course Title : Bioinstrumentation
Course Code : 15BT/AE/BI45
Shift : I

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

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

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

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

REVISION

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019 (Day Order 1 to 6)	Unit1 Introduction 1.1.Solid waste &Liquid waste 1.2. Waste generation and sources- Municipal, Kitchen, Garden, Agriculture & industrial	Lecture through PPT	A Textbook of environmental Sciences by Purohit Environmental Biotechnology, Battacharya	Model wealth out waste
Nov 22 –29, 2019 (Day Order 1 to 6)	Unit 2 Recycling of waste 2.1. Composting- Principles, process and factors affecting composting 2.2. Biodung method	Lecture Practical	Vermicomposting for sustainable Agriculture by Gupta, P. K. Vermicology by Ismail, S.A.	
Dec 2 – 7, 2019 (Day Order 1 to 6)	2.3. Vermiculture Biotechnology: Types of earth worms, Culturing of earthworms, Vermibed maintenance	Lecture cum PPT	-do- Vermiculture and organic farming by Sathe	
Dec 9 – 16, 2019 (Day Order 1 to 6)	2.4. Vermicomposting: Principle and process 2.5. Types of vermicomposting-Heap and Pit Method	Lecture cum 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 oxidation pond	Lecture through PPT	A Textbook of environmental Sciences by Purohit Microbiology by Prescott, Harley and Klein	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Anaerobic - Sludge digestion Tertiary Treatment- Chemical, Ozone and Reverse Osmosis	Lecture	-do-	
Jan 13 -23, 2020 (Day Order 1 to 6)	Unit 4 Bio monitoring of Water Quality and Water Purification 4.1. Test for water purity- coliform test and Membrane Filte Test for water purity- coliform test and Membrane Filter technique r technique	Lecture	Microbiology by Powar (Vol. 2) Analysis of waste water for use in Agriculture by Rachel	
Jan 24 -27, 2020 (Day Order 1 to 2)	4.2. Testing for purity of water- Coliform test	Practical	Analysis of waste water for use in Agriculture by Rachel	
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	4.2. Physical Analysis of water- pH, Color,	Practical	Analysis of waste water for use in Agriculture by Rachel	
Feb 07 -14, 2020 (Day Order 1 to 6)	4.2. Testing for purity Turbidity, TDS, chemical Analysis of water – salinity,	Practical	Analysis of waste water for use in Agriculture by Rachel	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	4.2. Hardness and nitrate content 4.3. Water treatment – steps	Practical & Lecture	-do-	

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
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	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	
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 (Day Order 1 to 6)	Unit 3: Photosynthesis 3.1 Principles of light absorption by plants	Lecture	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit 3: Photosynthesis 3.1 Principles of light absorption by plants	Lecture	Plant Physiology by Devlin Modern plant Physiology by Sinha.R.K	
Jan 13 -23, 2020 (Day Order 1 to 6)	3.2 CO ₂ assimilation pathway: C3, C4 cycles and CAM, Photorespiration	Lecture & PPT	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Jan 24 -27, 2020 (Day Order 1 to 2)	Factors influencing photosynthesis& Revision	Lecture cum demo	Plant Physiology by Noggle & Fritz	
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	Unit 4: Respiration 4.1 Respiratory quotient, Fermentation and Anaerobic processes	Lecture cum demonstration on fermentation & Estimation of Respiratory Quotient	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Feb 07 -14, 2020 (Day Order 1 to 6)	4.2 Glycolysis, Substrate level phosphorylation Entner-Doudroff pathway, Glyoxylate cycle.	Lecture	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	4.3 Krebs cycle, Electron flow components Electron Transport pathway, Oxidative phosphorylation and Cyanide resistant pathway	Lecture & PPT	Plant Physiology by Devlin Modern plant Physiology by Sinha. R.K	
Feb 25 – March 03, 2020 (Day Order 1 to 6)	Unit 5: Growth and Growth Regulators 5.1 Growth: Kinetics and growth curve	-do-	Text Book of Plant Physiology by Verma. V Plant Physiology by Noggle & Fritz	Quiz

	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)	5.3 Photoperiodism, 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)	REVISION			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019 (Day Order 1 to 6)	Unit 1.1. Classification of Horticultural plants Unit 1.2 Garden Implements Unit 1.3. Garden and its components: Fencing hedge, borders	Lecture through chalk and board Lecture showing garden implements Lecture through power point presentation	Introduction to Horticulture by Kumar N Horticulture by Sheela V L	
Nov 22 – 29, 2019 (Day Order 1 to 6)	Unit 1.3. Garden and its components: Flower beds, Edging and Lawn, Drives and Paths, Water garden and Garden adornments	Lecture through power point presentation Visit to various gardens of Stella Maris College	Introduction to Horticulture by Kumar N Horticulture by Sheela V	
Dec 2 – 7, 2019 (Day Order 1 to 6)	Unit 1.4. Vegetative Propagation: Layering and Grafting	Lecture through Chalk and Board method	-do- Horticulture Principles and Practices by George Acquaah	

Dec 9 – 16, 2019 (Day Order 1 to 6)	Unit 1.4. Vegetative Propagation: Budding Unit 1.5. Vegetative propagating methods	Lecture through Chalk and Board method Practical exposure to propagating methods	-do- Horticultural Science by Janick	Quiz from Unit 1
Dec 17 – Jan 4, 2020 (Day Order 1 to 6)	Unit 2.1.1. Propagation, planting and harvesting of fruits: Mango, Banana and Guava	Lecture through power point presentation	South Indian fruits and their culture by K.C. Naik	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit 2.1.2. Propagation, planting and harvesting of vegetative crops: Onion, Potato, Brinjal and Lady's finger	Lecture through power point presentation	Vegetative production in India by D.V.S. Chauhan	
Jan 13 -23, 2020 (Day Order 1 to 6)	Unit 3.1 & 3.2: Growing plants in Pots, Potting and Repotting Unit 3.3: Hanging Basket	Lecture through practical exposure	Introduction to Horticulture by Kumar N Horticulture by Sheela V L	
Jan 24 -27, 2020 (Day Order 1 to 2)	Unit 3.4: Kitchen Garden – Layout	Lecture through practical exposure	Horticulture by V. L. Sheela Introduction to Horticulture by Kumar N Horticulture Principles and Practices by George Acquaah	
Jan 28 – Feb 1,	C.A. Test			

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

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

	Shadow casting			
Jan 6 - 11, 2020 (Day Order 1 to 6)	Unit 3 Quantitative 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	Lecture cum demo of the various components Lecture cum demo of the various components of spectrophotometers	Biological Instrumentation and Methodology by P.K Bajpai	
Jan 13 -23, 2020 (Day Order 1 to 6)	3.3 Single and double beam spectrophotometers (block diagrams only) 3.4 Estimation of protein using spectrophotometer (practical)	Lecture cum demo of the various components of spectrophotometers (Double beam & UV) Practical	Biotechniques theory and practice by S.V.S Rana	
Jan 24 -27, 2020 (Day Order 1 to 2)	REVISION			
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	Unit 4 Separation techniques 4.1 chromatography – principles, techniques and application of thin layer	Lecture cum demo of the various techniques of chromatography	Biotechniques theory and practice by S.V.S Rana	

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

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 15 – 21, 2019 (Day Order 1 to 6)	Unit1 Introduction 1.1. Solid waste & Liquid waste 1.2. Waste generation and sources- Municipal, Kitchen, Garden, Agriculture & industrial	Lecture through PPT	A Textbook of environmental Sciences by Purohit Environmental Biotechnology, Battacharya	Model wealth out waste
Nov 22 –29, 2019 (Day Order 1 to 6)	Unit 2 Recycling of waste 2.1. Composting- Principles, process and factors affecting composting 2.2. Biodung method	Lecture Practical	Vermicomposting for sustainable Agriculture by Gupta, P. K. Vermicology by Ismail, S.A.	
Dec 2 – 7, 2019 (Day Order 1 to 6)	2.3. Vermiculture Biotechnology: Types of earth worms, Culturing of earthworms, Vermibed maintenance	Lecture cum PPT	-do- Vermiculture and organic farming by Sathe	
Dec 9 – 16, 2019 (Day Order 1 to 6)	2.4. Vermicomposting: Principle and process 2.5. Types of vermicomposting- Heap and Pit Method	Lecture cum 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 oxidation pond	Lecture through PPT	A Textbook of environmental Sciences by Purohit Microbiology by Prescott, Harley and Klein	
Jan 6 - 11, 2020 (Day Order 1 to 6)	Anaerobic - Sludge digestion Tertiary Treatment- Chemical, Ozone and Reverse Osmosis	Lecture	-do-	
Jan 13 -23, 2020 (Day Order 1 to 6)	Unit 4 Bio monitoring of Water Quality and Water Purification 4.1. Test for water purity- coliform test and Membrane Filte Test for water purity- coliform test and Membrane Filter technique r technique	Lecture	Microbiology by Powar (Vol. 2) Analysis of waste water for use in Agriculture by Rachel	
Jan 24 -27, 2020 (Day Order 1 to 2)	4.2. Testing for purity of water- Coliform test	Practical	Analysis of waste water for use in Agriculture by Rachel	
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	4.2. Physical Analysis of water- pH, Color,	Practical	Analysis of waste water for use in Agriculture by Rachel	
Feb 07 -14, 2020 (Day Order 1 to 6)	4.2. Testing for purity Turbidity, TDS, chemical Analysis of water – salinity,	Practical	Analysis of waste water for use in Agriculture by Rachel	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	4.2. Hardness and nitrate content 4.3. Water treatment – steps	Practical & Lecture	-do-	

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

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

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
Shift : I

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

	3.1 Down's Syndrome 3.2 Klinefelter's Syndrome 3.3 Sickle Cell Anaemia		Singh, B.D Textbook of human genetics Levitan, M..	
Jan 13 -23, 2020 (Day Order 1 to 6)	3.4 Genetic Counselling	Case Study	Practical Genetic Counselling by Harper, P.S.	
Jan 24 -27, 2020 (Day Order 1 to 2)	Revision			
Jan 28 – Feb 1, 2020	C.A. Test			
Feb 03- 06, 2020 (Day Order 3 to 6)	4.1 Objectives of Plant Breeding	Lecture	Elementary Principles of Plant Breeding by Chaudhari, H.K.	
Feb 07 -14, 2020 (Day Order 1 to 6)	4.2 Selection Methods	Lecture	Plant Breeding by Kumaresan, V.	
Feb 17 – Feb 24, 2020 (Day Order 1 to 6)	4.3 Basic Hybridization Techniques	Lecture	Plant Breeding: Principles and Methods by Singh, B. D.	
Feb 25 – March 03, 2020 (Day Order 1 to 6)	4.4 Induced Polyploidy in Plant Breeding	Lecture	Principles of Plant Breeding by Allard, R.W.	
March 04 – 11, 2020 (Day Order 1 to 6)	5.1 Origin of Life	Lecture	Cell Biology, 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 (Day Order 1 to 6)	5.3 Isolating Mechanisms	Lecture	Cytology, Genetics and Evolution by Gupta, P.K.	
March 28-30 2020 (Day Order 1 & 2)	REVISION			