STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : Botany

Name/s of the Faculty : Mrs. Madhu Priya M

Course Title : Bryophytes, Pteridophytes, Gymnosperms

Course Code : 15BT/MC/BP 24

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	1.1. Classification of Bryophyta (Proskauer, 1957) and characteristic features of following classes: Hepaticopsida, Anthocerotopsida, Bryopsida	Lecture and OHP	A Textbook of Botany Vol II- Bryophytes, Pteridophytes and Gymnosperms by Pandey,S.N., P.S Trivedi and A Misra.	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	1.2. Classification of Pteridophyta (Reimers, 1951) and characteristic features of the following classes: Lycopsida, Sphenopsida and Pteropsida	Lecture and OHP	A Textbook of Botany Vol II- Bryophytes, Pteridophytes and Gymnosperms by Pandey,S.N., P.S Trivedi and A Misra.	
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	1.3. Classification of Gymnospermae (Bierhorst, 1971) and characteristic features of the following	Lecture and OHP	A Textbook of Botany Vol II- Bryophytes, Pteridophytes and Gymnosperms by	Oral Question

	classes: Cycadopsida and Gnetopsida.		Pandey,S.N., P.S Trivedi and A Misra.	
Dec 6 - 14, 2016 (Day Order 1 to 6)	**Bryophytes** 2.1. A detailed study of the thallus structure, anatomy and reproduction of the following (no development): Hepaticopsida – *Porella*.	Lecture Cum Demonstration	Bryophytes by Srivastava, H.N. The structure and Life of Bryophytes by Watson,E.V.	**Third Component QUIZ on 8.12.16**
Dec. 15 - 21, 2016 (Day Order 1 to 6)	2.1 Anthocerotopsida – *Anthoceros*,	Lecture Cum Demonstration	Bryophytes by Srivastava, H.N. The structure and Life of Bryophytes by Watson,E.V.	
Jan. 03- 09, 2017 (Day Order 1 to 6)	2.1 Bryopsida - *Polytrichum*	Lecture Cum Demonstration	Bryophytes by Srivastava, H.N. The structure and Life of Bryophytes by Watson,E.V.	Diagram Test
Jan. 10- 17, 2017 (Day Order 1 to 6)	**Pteridophytes** 3.1. A detailed study of the plant body, anatomy and reproduction of the following: (no development): Lycopsida –	Lecture Cum Demonstration	Morphology of Pteridophytes by Sporne, K.R.	Herbarium

	Lycopodium,			
Jan. 18- 20, 2017 (Day Order 1 to 3)	3.1 Sphenopsida – *Equisetum*,	Lecture Cum Demonstration	Morphology of Pteridophytes by Sporne, K.R.	
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	3.1 Filices - *Marsilea*	Lecture Cum Demonstration	Morphology of Pteridophytes by Sporne, K.R.	
Feb.02 - 09, 2017 (Day Order 1 to 6)	**Gymnosperms** 4.1.A detailed study of the plant body, anatomy and reproduction of the following (no development): Cycadopsida - Cycas	Lecture Cum Demonstration	Morphology of Gymnosperms by Coulter, J.M.and C.J.Chamberlain	
Feb.10 - 17, 2017 (Day Order 1 to 6)	4.1 Gnetopsida - Gnetum	Lecture Cum Demonstration	Morphology of Gymnosperms by Coulter, J.M.and C.J.Chamberlain	
Feb.20 - 27, 2017 (Day Order 1 to 6)	**Fossils** 5.1 Table of the Geological Time Scale	Lecture and PPT	Essentials of Palaeobotany by Sukla & Mishra, S.P.	**Third Component Assignment (22.2.16)**
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	5.2 Process of Fossilization	Lecture and PPT	Essentials of Palaeobotany by Sukla & Mishra, S.P.	
Mar. 06 - 16, 2017	**C.A.IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	5.3 Fossil forms – Pteridophyta : *Lepidodendron, Stigmaria*	Lecture Cum Demonstration	.	

Mar. 16, 2017 (Day Order 1)	5.3. Fossil forms - *Lepidostrobus* and *Lepidocarpon* Gymnosperma: *Williamsonia*	Lecture and PPT	Essentials of Palaeobotany by Sukla & Mishra, S.P	
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : Botany

Name/s of the Faculty : Mrs. Madhu Priya M

Course Title : Fruit Preservation

Course Code : 15BT/GE/FP22

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	1.1 Principles of fruit preservation	Lecture and OHP	Food Microbiology by Frazier.	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	1.2 Types of spoilage 1.3 Factors promoting spoilage	Lecture and OHP	Food Scince by Srilakshmi	
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	2.1 Methods : Refrigeration, Freezing.	Lecture and OHP	Food Microbiology by Frazier.	Scrap Book
Dec 6 - 14, 2016 (Day Order 1 to 6)	2.1 Methods : Canning, Dehydration	Lecture and OHP	Food Microbiology by Frazier.	
Dec. 15 - 21, 2016 (Day Order 1 to 6)	2.1 Methods : Chemical Preservatives	Lecture and OHP	Food Microbiology by Frazier.	**Third Component QUIZ on 17.12.16**
Jan. 03- 09, 2017 (Day Order 1 to 6)	2.2 Techniques: Proportion of ingredients, Selection of fruits.	Lecture and PPT	Food Scince by Srilakshmi	
Jan. 10- 17, 2017 (Day Order 1 to 6)	2.2 Techniques: Estimation Tests	Lecture cum demonstration	Food Scince by Srilakshmi	
Jan. 18- 20, 2017 (Day Order 1 to 3)	2.2 Techniques: Filling and Bottling of	Lecture and PPT	Food Scince by Srilakshmi	

	products and Precautions.			
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	3.1 Sugar : Lime Syrup	Lecture cum Hands on Training	Food Science by Srilakshmi	Quiz on preparation of products
Feb.02 - 09, 2017 (Day Order 1 to 6)	3.1 Sugar : Grape Crush	Lecture cum Hands on Training	Food Science by Srilakshmi	
Feb.10 - 17, 2017 (Day Order 1 to 6)	3.1 Sugar :Orange Squash	Lecture cum Hands on Training	Food Science by Srilakshmi	**Third Component Assignment (10.2.16)**
Feb.20 - 27, 2017 (Day Order 1 to 6)	3.1 Sugar : Mixed fruit jam	Lecture cum Hands on Training	Food Science by Srilakshmi	
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	3.1 sugar : Guava Jelly	Lecture cum Hands on Training	Handbook of Food Sciences by Swaminathan, M.	
Mar. 06 - 16, 2017	**C.A.IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	3.2 Salt : Tomato chutney	Lecture cum Hands on Training	Handbook of Food Sciences by Swaminathan, M.	
Mar. 16, 2017 (Day Order 1)	3.2 Salt : Mixed vegetable Pickle	Lecture cum Hands on Training	Handbook of Food Sciences by Swaminathan, M.	
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : Botany

Name/s of the Faculty : Dr. H. Shakila and Madhu Priya M

Course Title : General Botany - II

Course Code : 15 BT/AC/GB 24

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	1.1 Salient features of Bryophyta, Pteridophyta and Gymnospermae. 2.1 Photosynthesis - Light Reaction: Red drop.	Lecture and OHP	Outlines of Botany by Rao, K. N., and Narayaswamy, R.V. Plant Physiology by V.K Jain	Questioning Practical test
Nov. 21 - 28, 2016 (Day Order 1 to 6)	1.2 A detailed study of the life cycle (no development) of *Funaria*. 2.1 Emerson enhancement effect, pigment system I and II	Lecture and PPT	Outlines of Botany by Rao, K. N., and Narayaswamy, R.V. Plant Physiology by V.K Jain	
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	1.3 A detailed study of the life-cycle (no development) of *Adiantum* 2.1 Phosphorescence, Fluorescence,	Lecture and PPT	Outlines of Botany by Rao, K. N., and Narayaswamy, R.V. Plant Physiology by V.K Jain	Quiz

	cyclic and non cyclic photo phosphorylation.			
Dec 6 - 14, 2016 (Day Order 1 to 6)	1.4 A detailed study of the life-cycle (no development) of *Cycas* 2.1 Dark Reaction: C3 and C4	Lecture and OHP	Outlines of Botany by Rao, K. N., and Narayaswamy, R.V. Plant Physiology by Salisburry and Ross	**Third Component QUIZ on 16.12.16**
Dec. 15 - 21, 2016 (Day Order 1 to 6)	4.1. Bonsai technique 2.2 Respiration – Aerobic: Glycolysis, Krebs cycle	Lecture and PPT	Introduction to Horticulture by Kumar, N. Plant Physiology by Salisburry and Ross	
Jan. 03- 09, 2017 (Day Order 1 to 6)	4.2 Cut flowers, Importance and Methods to prolong Vase life. 2.2 Organization of the respiratory chain, electron transport pathway and oxidative phosphorylation	Lecture, OHP and PPT	Introduction to Horticulture by Kumar, N. Plant Physiology by Salisburry and Ross	Test on diagrammatic representation of ETP
Jan. 10- 17, 2017 (Day Order 1 to 6)	4.3 Flower arrangement: Fresh 2.2 Anaerobic fermentation.	Lecture, OHP and PPT	Introduction to Horticulture by Kumar, N. Plant Physiology by Salisburry and Ross	

Jan. 18- 20, 2017 (Day Order 1 to 3)	REVISION			
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	4.3 Flower arrangement: Dry 3.1 Plant Growth Regulators - Auxins,	Lecture Cum PPT	Plant Biotechnology by Ignacimuthu. Introduction to Horticulture by Kumar, N.	
Feb.02 - 09, 2017 (Day Order 1 to 6)	5.1. Principles of Plant tissue culture 3.1 Plant Growth Regulators - Gibberellins	Lecture Cum demonstration	Plant Biotechnology by Ignacimuthu	
Feb.10 - 17, 2017 (Day Order 1 to 6)	5.1. Principles of Plant tissue culture Contd… 3.1 Cytokinins, ABA	Lecture Cum demonstration	Plant Biotechnology by Ignacimuthu	
Feb.20 - 27, 2017 (Day Order 1 to 6)	5.1. Principles of Plant tissue culture Contd… 3.2 Photoperiodism- Long and Short day plants- Phytochrome, Florigen.	Lecture Cum demonstration	Plant Biotechnology by Ignacimuthu. Plant Physiology by Salisburry and Ross	**Third Component Assignment (28.2.16)**
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	5.2. Oyster Mushroom: Cultivation and Marketing.	Guest Lecture and workshop	Plant Biotechnology by Ignacimuthu Biotechnology by	

	3.1 Ethylene- Practical applications		Sathyanarayana U	
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	5.2 Button Mushroom: Cultivation and Marketing	Guest Lecture and workshop	Biotechnology by Sathyanarayana U	Submission of the report of the workshop
Mar. 16, 2017 (Day Order 1)	3.2 Vernalisation	Lecture Cum demonstration	Plant Physiology by Salisburry and Ross	
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

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. 14 - 19, 2016 (Day Order 1 to 6)	1.1Meristems: 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. 21 - 28, 2016 (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	Submission of drawing of components of Cambium
Nov. 29 – Dec 5, 2016 (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 6 - 14, 2016 (Day Order 1 to 6)	Unit2.2. Secondary phloem: Sieve tubes, Companion cells, phloem parenchyma and fibres	-do-	-do-	
Dec. 15 - 21, 2016 (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-	**Dec. 15, 2016 – Submission of Assignment (Third Component)**
Jan. 03- 09, 2017 (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. 10- 17, 2017 (Day Order 1 to 6)	Unit3.4.Anomalous secondary thickening in monocot stem - *Dracaena.* Unit4.1.Leaf – Internal structure of Isobilateral dicot	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. 18- 20, 2017 (Day Order 1 to 3)	Unit 4.1 Leaf Abscission **REVISION**	Lecture through chalk and board method	Anatomy of Seed Plants by Singh,V., P.C. Pande and D.K. Jain	

Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 4.2 Epidermis – Stomata – Structure andTypes	Lecture through chalk and board and practical	- Do-	
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 4.3 Epidermal Hairs and Appendages	Lecture through chalk and board and practical Also by PPT	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.	Drawing Test on Stomata and Epidermal Hairs
Feb.10 - 17, 2017 (Day Order 1 to 6)	Unit 5.1. Microsporangium: Microsporogenesis –Male gametophyte. Unit5.2.Megasporangium: Megasporogenesis – Female gametophyte -- Monosporic (Polygonium)	Lecture through PPT and chalk and board method	Embryology of angiosperms by Bhojwani and Bhatnagar; Angiosperm Embryology by Muneeswaran	
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 5.2 Female Gametophyte - Bisporic (Allium) and tetrasporic (Peperomia)	-do-	-do-	**Third Component Quiz on 20/02/17**
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit5.3. Double Fertilization Apomixis	-do-	-do-	
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Unit 5.4 Endosperm - types and functions; Ruminate endosperm Unit 5.5 Development of Dicot Embryo- Capsella brusa pastoris, Polyembryony	Lecture through Board and Chalk method	-do-	

Mar. 16, 2017 (Day Order 1)	Unit 5.4 Polyembryony			
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : **Botany**

Name/s of the Faculty : **Dr. Priscilla Jebakumari**

Course Title : **WASTE MANAGEMENT**

Course Code : **11BT/GE/WM23**

Shift : **I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	UNIT – 1 Wastes: Solid and Liquid wastes	Lecture	Environmental Biotechnology, Battacharya	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Waste generation and sources – Municipal, kitchen, Garden, agricultural, Industrial	Lecture	Environmental Biotechnology, Battacharya	
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	UNIT – 2 2.1 Composting – Principles, process and factors affecting composting 2.2 Biodung method	Lecture with PPT Practical	Environmental Biotechnology, Battacharya	Scrap Book on Solid and Liquid Waste and mitigation
Dec 6 - 14, 2016 (Day Order 1 to 6)	2.3 Vermiculture Biotechnology: Types of earthworm, Culturing of earth worms, Vermibed Maintenance	Lecture with PPT and Guest Lecture	Vermicomposting for sustainable Agriculture, Gupta Vermiculture and Organic farming, Sathe Vermitech, Sultan Ahmed Ismail	
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Vermicomposting: Principle and Process 2.4 Types of vermicomposting – Heap method,	Lecture cum demo in the field visit to the composting unit at SMC	Modern Technology of Waste Management, NIIR Board	**III Component Quiz**

Jan. 03- 09, 2017 (Day Order 1 to 6)	2.4 Pit method	Lecture cum demo in the field	Vermitech, Sultan Ahmed Ismail Vermicomposting for sustainable Agriculture, Gupta	
Jan. 10- 17, 2017 (Day Order 1 to 6)	UNIT – 3 sewage Disposal 3.1 Primary Treatment 3.2 Secondary Treatment – Septic tank	Lecture	Modern Technology of Waste Management, NIIR Board Microbiology by Prescott,Harley and Klein	
Jan. 18- 20, 2017 (Day Order 1 to 3)	3.2 Secondary treatment – Trickling filters, Oxidation pond **Revision**		Environmental Microbiology by K.Vijaya Ramesh	
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	3.2.2. Anaerobic – Sludge digestion 3.2.3 Tertiary treatment – Chemical, Ozone and Reverse Osmosis	Lecture cum PPT	Microbiology by Prescott,Harley and Klein Environmental Microbiology by K.Vijaya Ramesh	
Feb.02 - 09, 2017 (Day Order 1 to 6)	Unit 4: Test for water Purity – Coliform and membrane filter technique	Practical		
Feb.10 - 17, 2017 (Day Order 1 to 6)	Testing the physical parameters of water – pH, Turbidity, Color, TDS chemical – Salainity , Hardness and Nitrate	Practical	Microbiology by Prescott,Harley and Klein	**Submission of report on water analysis(III Comp)**
Feb.20 - 27, 2017 (Day Order 1 to 6)	Steps involved in Water treatment in a typical purification plant	Lecture cum PPT	Microbiology by Prescott,Harley and Klein	

Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 5: Recycling of Paper	Lecture and Guest lecture	Environmental Microbiology by K.Vijaya Ramesh Microbial Ecology by Maier	**Art out of Waste(Models)-Third Component**
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	E-waste	Lecture And Group Discussion	Environmental Microbiology by K.Vijaya Ramesh Microbial Ecology by Maier	
Mar. 16, 2017 (Day Order 1)	E-waste	Group Discussion	Online website	
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : **Botany**

Name/s of the Faculty : **Dr. H. Shakila & Dr. Priscilla Jebakumari**

Course Title : **Bioinstrumentation**

Course Code : **15BT/AE/BI45**

Shift :**I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	Unit 1: Centrifugation – Bench, Ultracentrifuge, Refrigerated, continuous flow and & Microfuge	Lecture OHP	Plant Microtechnique & Microscopy by Steven	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Density gradient and Differential Centrifugation Isolation of Chloroplast	Lecture OHP Practical	Plant Microtechnique & Microscopy by Steven	
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	Unit 2: Colorimeter – Beer-Lambert's Law, Single Beam Colorimeter	Lecture cum demo of the various components	Biological Instrumentation and Methodology by P.K Bajpai	Oral Questioning
Dec 6 - 14, 2016 (Day Order 1 to 6)	Colorimeter determination of Vit B-12 Unit 3: Spectrophotometer – single beam	Practical Lecture	Biological Instrumentation and Methodology by P.K Bajpai	

Dec. 15 - 21, 2016 (Day Order 1 to 6)	Spectrophotometer – Double beam	Lecture	Biotechniques theory and practice by S.V.S Rana	QUIZ **(Third Component)**
Jan. 03- 09, 2017 (Day Order 1 to 6)	UV –Visible Spectrophotometer	Lecture cum demo of the various components of spectrophometers (Double beam & UV)	Biotechniques theory and practice by S.V.S Rana	
Jan. 10- 17, 2017 (Day Order 1 to 6)	Estimation of Protein using Spectrophotometer	Practical	Biotechniques theory and practice by S.V.S Rana	
Jan. 18- 20, 2017 (Day Order 1 to 3)	Revision			
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 4: Chromatography – Paper and Thin layer,	Lecture	Biological Instrumentation and Methodology by P.K Bajpai	
Feb.02 - 09, 2017 (Day Order 1 to 6)	Chromatography – Column, Ion Exchange, Affinity	Lecture	Biological Instrumentation and Methodology by P.K Bajpai	**Assignment on Diagram Test (Third Component)**
Feb.10 - 17, 2017 (Day Order 1 to 6)	GLC, HPLC & RPHPLC Separation of Chlorophyll by TLC and Paper Chromatography	Lecture OHP Practical	Biotechniques theory and practice by S.V.S Rana	

Feb.20 – 27, 2017 (Day Order 1 to 6)	Unit 5: Electrophoresis – Capillary, Gel – Agarose	Lecture and Guest Lecture OHP	Handbook of Capillary Electrophoresis by James	Visit to Crist Lab and submission of report
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Electrophoresis – OFAGE, FIGE	Lecture OHP	Handbook of Capillary Electrophoresis by James	**Assignment on Instruments (Third Component)**
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	Immunoelectrophoresis Separation of Proteins	Lecture OHP Practical	Immunology - Dubey	
Mar. 16, 2017 (Day Order 1)	REVISION			
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : Botany

Name/s of the Faculty : Dr. S. Sathya Bama & Ms. Madhu Priya M

Course Title : Applied Biotechnology

Course Code : 11BT/MC/AB64

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	1.1.Totipotency,Culture techniques:Equipment,Media, 3.1.Transgenic plants for crop improvement:Herbicide resistance against viral, bacterial and fungal pathogens	Lecture cum demonstration	Elements of biotechnology by Gupta P.K	**Assignment on the topic 'Equipments used for Tissue Culture' on 2.12.16 (Third Component)**
Nov. 21 - 28, 2016 (Day Order 1 to 6)	1.1. Explant, Callus formation, Organogenesis. 3.1.Transgenic plants for crop improvement: Insect resistance against viral, bacterial and fungal pathogens	Hands on training on callus formation	Biotechnology by Satyanarayana	
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	1.2. Root culture, Shoot culture 3.2. Transgenic plants-Edible vaccines: Transgenic plants as recombinant protein production systems.	Lecture through PPT Hands on training on root and shoot culture	Biotechnology by Satyanarayana	
Dec 6 - 14, 2016 (Day Order 1 to 6)	1.2. Anther and pollen culture 3.2 choice of plant species for recombinant vaccine production	Lecture through PPT Hands on training on anther culture	Biotechnology by Satyanarayana	

Dec. 15 - 21, 2016 (Day Order 1 to 6)	1.3. Cell Culture, Protoplast culture 3.3.Biofertilizers	Lecture through PPT Guest lecture on 'Biofertilizers'	An Introduction to Plant tissue culture by Kalyan Kumar Agricultural Biotechnology by Purohit S,S.	
Jan. 03- 09, 2017 (Day Order 1 to 6)	1.4. Somaclonal variation 4.1 Biofuels: Bioethanol 4.2 Biohydrogen and Gobargas	Lecture through OHP	An Introduction to Plant tissue culture by Kalyan Kumar Industrial Microbiology by Patel.	
Jan. 10- 17, 2017 (Day Order 1 to 6)	1.6. Applications: Horticulture, Pharmaceutical industry 4.3. Biodiesel:Petroplants	Lecture through OHP	Industrial Microbiology by Patel.	
Jan. 18- 20, 2017 (Day Order 1 to 3)	REVISION			
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	1.5. Somatic hybridization and Cybrid: Spontaneous and induced fusion 5.1.fermentation-Media,Equipment Innoculum	Lecture	An Introduction to Plant tissue culture by Kalyan Kumar Industrial Microbiology by Prescott and Dunn	

Feb.02 - 09, 2017 (Day Order 1 to 6)	1.5. Identification and selection of hybrid cells. 5.2. Scale up and Down Stream processing	Lecture and OHP	Plant Biotechnology by Gupta, P.K Industrial Microbiology by Prescott and Dunn	
Feb.10 - 17, 2017 (Day Order 1 to 6)	2.1. Selection- Purline and Clonal. 5.3 Dairy- Cheese(Cheddar,Camembert and Roquefort)	Lecture and PPT Practical demonstration on different types of cheese	Plant Biotechnology by Gupta, P.K Industrial Microbiology by Prescott and Dunn	**QUIZ on 16.2.16 (Third Component)**
Feb.20 - 27, 2017 (Day Order 1 to 6)	2.2.Hybridization 5.3 Bakery- Bread	Lecture through PPT Practical demonstration on fermentation	Plant Biotechnology by Gupta, P.K Industrial Microbiology by Prescott and Dunn	Oral Quiz
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	2.3. Mutation Breeding 5.3Beverages- Wine types and Beer	Lecture through PPT Hands on training on the preparation of wine	Plant Biotechnology by Gupta, P.K Industrial Microbiology by Prescott and Dunn	**Assignment on various types of wine (Third Component)**
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	2.4. Marker Assisted Selection, Marker Assisted Breeding 5.3.Enzyme-Amylase	Lecture through PPT Demonstration on enzyme activity of amylase.	Plant Biotechnology by Gupta, P.K Industrial Microbiology by Prescott and Dunn	

Mar. 16, 2017 (Day Order 1)	5.3. Vitamin-B_{12}	Lecture and PPT	Industrial Microbiology by Prescott and Dunn	
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : **Botany**

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

Course Title : **Molecular Biology**

Course Code : **11BT/MC/ML64**

Shift :**I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	UNIT – 1 Introduction to Molecular biology DNA and RNA as genetic material	Lecture Hands on training on DNA isolation	Cytology By P.S. Verma	
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Mutations - Introduction and types	Lecture PPT	Cytology By P.S. Verma Cell and Molecular biology By Ajoy Paul	Problems
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	DNA – Types - Linear,Fragility Denaturation and Renaturation Molecular structure of RNA	Lecture OHP	P.S. Verma Cytology By Molecular Biology By Wolfe	
Dec 6 - 14, 2016 (Day Order 1 to 6)	Types of RNA RNA types - Detail account of the different types of RNA	Lecture OHP	P.S. Verma Cytology By Molecular Biology By Wolfe	**QUIZ (Third Component)**
Dec. 15 - 21, 2016 (Day Order 1 to 6)	Unit 2. Introduction to Transcription & Translation Transcription in Prokaryotes And Eukaryotes	Lecture OHP	A Text book of Biotechnology byU.Sathyanarayana	

Jan. 03- 09, 2017 (Day Order 1 to 6)	Processing of Eukaryotic mRNA	Lecture OHP	A Text book of Biotechnology by S. Sathyanarayana	
Jan. 10- 17, 2017 (Day Order 1 to 6)	Unit 3: Genetic code Mechanism of Protein synthesis	Lecture Hands on training on Protein isolation through SDS page	Molecular biology By Clarke	**Problem Solving (Third Component)**
Jan. 18- 20, 2017 (Day Order 1 to 3)	REVISION			
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	Unit 4: Operon concept Structural genes	Lecture	Cytology By P.S. Verma	
Feb.02 - 09, 2017 (Day Order 1 to 6)	Lac Operon	Lecture	Cytology By P.S. Verma The Cell by Cooper	**Assignment / Model (Third Component)**
Feb.10 - 17, 2017 (Day Order 1 to 6)	Trp operon,	Lecture	The Cell by Cooper	
Feb.20 - 27, 2017 (Day Order 1 to 6)	Operon - ,ara Genetic imprinting	Lecture	Molecular biology By Clarke	
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Unit 5: Signal transduction - Introduction Types of Signal transduction	Lecture & Guest Lecture	Cell and Molecular biology By Cooper	Oral Quiz
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	MAP Kinase pathway	Lecture & Guest Lecture	Cell and Molecular biology By Cooper	

Mar. 16, 2017 (Day Order 1)	REVISION			
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : **Botany**

Name/s of the Faculty : **Dr. Priscilla Jebakumari**

Course Title : **PLANT PHYSIOLOGY**

Course Code : **11BT/MC/PP64**

Shift : **I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (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. 21 - 28, 2016 (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	**Quiz on Micro & Macro nutrients (Third Component)**
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	2.2 Mechanism of mineral salt absorption: Theories 2.3 Transport of organic solutes 2.3 Phloem loading and unloading2	Lecture & PPT	Text Book of Plant Physiology by Verma.V Plant physiology by Salisbury & Ross	
Dec 6 - 14, 2016 (Day Order 1 to 6)	.4 Source of Nitrogen, Biochemistry of Nitrogen fixation,	Lecture	Text Book of Plant Physiology by Verma.V	

Dec. 15 - 21, 2016 (Day Order 1 to 6)	Nitrate and Nitrite reduction 2.4 Assimilation of Nitrite and Ammonium ions	Lecture & OHP	Plant Physiology by Devlin Plant Physiology by Noggle & Fritz	
Jan. 03- 09, 2017 (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. 10- 17, 2017 (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. 18- 20, 2017 (Day Order 1 to 3)	Factors affecting photosynthesis **&** **Revision**	Lecture cum demo	Plant Physiology by Noggle & Fritz	
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 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	**Submission of reports for group projects (III component)**
Feb.02 - 09, 2017 (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	Test on schematic representations of the Unit
Feb.10 - 17, 2017 (Day Order 1 to 6)	4.3 Krebs cycle, Electron flow components	Lecture & PPT	Plant Physiology by Devlin Modern plant Physiology by	

	Electron Transport pathway, Oxidative phosphorylation and Cyanide resistant pathway		Sinha.R.K	
Feb.20 - 27, 2017 (Day Order 1 to 6)	Unit 5: Growth and Phytohormones 5.1 Growth: Kinetics and growth curve5.2 Auxin, ABA,	-do-	Text Book of Plant Physiology by Verma.V Plant Physiology by Noggle & Fritz	**Third Component-Quiz**
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	Cytokinin 5.2 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	
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	5.3 Photoperiodism, Florigen concept	Lecture	Text Book of Plant Physiology by Verma.V & Plant Physiology V.K. Jain	
Mar. 16, 2017 (Day Order 1)	5.3 Vernalization Revision	Lecture	Text Book of Plant Physiology by Verma.V Plant Physiology by Bidwell	
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : **Botany**

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

Course Title : **Fundamentals of Horticulture**

Course Code : **11BT/GE/FH44**

Shift : **I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	1.1. Introduction : Divisions of Horticuture. 1.2. History of Gardening, Some famous Gardens of India	Lecture	Introduction to Horticulture by N. Kumar; Horicultural science by Janick Complete Gardening in India by Gopalswamy Iyengar	**Assignment on 5 famous gardens of India to be submitted on Dec. 6, 2016 (Third Component)**
Nov. 21 - 28, 2016 (Day Order 1 to 6)	Types of Gardens: Indoor, Public and Kitchen garden	Lecture	Introduction to Horticulture by N. Kumar; Horicultural science by Janick	Scrap Book
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	2.1. Pot cultures: Selection of pot, potting Repotting and potting mixtures 2.2. Vegetative propagation: Layering	Lecture through demonstration and PPT	-do- Horticulture Principles and Practices by George Acquaah	
Dec 6 - 14, 2016 (Day Order 1 to 6)	2.2. Vegetative propagation: Cutting 2.2. Vegetative propagation: Grafting	Lecture through PPT & Demonstration	Introduction to Horticulture by N. Kumar; Horicultural science by Janick	

Dec. 15 - 21, 2016 (Day Order 1 to 6)	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. 03- 09, 2017 (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. 10- 17, 2017 (Day Order 1 to 6)	4.1. Lawn and Lawn making	Lecture through PPT ; Campus walk.	Horicultural science by Janick Fundamentals of Horticulture by Edmund,Sen et.al. Introduction to Horticulture by N. Kumar	
Jan. 18- 20, 2017 (Day Order 1 to 3)	4.2 Rockery	Lecture through PPT	-do-	
Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	4.2.Rockery	Lecture through PPT	Horicultural science by Janick Fundamentals of Horticulture by Edmund,Sen et.al. Introduction to Horticulture by N. Kumar	**Visit to Semmozhi Ponga Submission of Rockery model on 6.2.16 (Third Component)**
Feb.02 - 09, 2017	4.3. Terrarium	Lecture through	Introduction to	Individual

(Day Order 1 to 6)		PPT and demonstration	Horticulture by N. Kumar	Practical work- Evaluated
Feb.10 - 17, 2017 (Day Order 1 to 6)	4.4.Bonsai	Lecture through PPT and demonstration	Introduction to Horticulture by N. Kumar	
Feb.20 - 27, 2017 (Day Order 1 to 6)	5.3.Flower arrangement- Fresh and dry	Demonstration	-do-	**Practical- Developing an art of preparing flower arrangement –III component**
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	5.2.Cut Flowers .Importance and methods to prolong vase life	Lecture through PPT	Introduction to Horticulture by N. Kumar	
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	5.1.Commercial floriculture: Economic flowers-Rose and Jasmine	Lecture	-do-	
Mar. 16, 2017 (Day Order 1)				
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule – November 2016 – April 2017

Department : **BOTANY**

Name/s of the Faculty : **DR. GERADETTE DAVEY**

Course Title : **GENETICS AND GENETIC ENGINEERING**

Course Code : **11BT/MC/GG 64**

Shift **1**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & Reference	Method of Evaluation
Nov. 14 - 19, 2016 (Day Order 1 to 6)	1.1 Mendelian Genetics	Lecture Method	Genetics - P.K.Gupta	Quiz
Nov. 21 - 28, 2016 (Day Order 1 to 6)	1.2 Gene interactions	Problem-solving Method	Genes IX - L.Benjamin	Genetic Problems
Nov. 29 – Dec 5, 2016 (Day Order 1 to 6)	1.3 Multiple Gene Inheritance	Lecture Method	The Science of Genetics - G.W.Burns and P.J.Botline	**Third Component Quiz**
Dec 6 - 14, 2016 (Day Order 1 to 6)	1.4 Multiple alleles	Lecture Method	Genetics - P.K.Gupta	Quiz
Dec. 15 - 21, 2016 (Day Order 1 to 6)	2.1 Linkage, Crossing over and Mapping	Problem-solving Method	Genetics - Winchester	Genetic Problems
Jan. 03- 09, 2017 (Day Order 1 to 6)	2.2 Extrachromosomal Inheritance	Lecture Method	Genetics - P.K.Gupta	**Third Component Presentation**
Jan. 10- 17, 2017 (Day Order 1 to 6)	2.3 Sex Determination and Sex- linked inheritance	Lecture Method	Genetics - Winchester	Quiz
Jan. 18- 20, 2017 (Day Order 1 to 3)	5.1 Bioethical issues of GM plants	Debate	A Text book of Biotechnology – R.C. Dubey	Quiz

Jan.23 - 28, 2017	**C.A. Tests**			
Jan.30 – Feb 01, 2017 (Day Order 4 to 6)	3.1 Introduction to Genetic Engineering 3.2 Techniques of Genetic Engineering	Lecture Method	Elements of Biotechnology - P.K. Gupta Biotechnology- An Introduction Ignacimuthu S. J.	Quiz
Feb.02 - 09, 2017 (Day Order 1 to 6)	3.3 Cloning Vectors	Lecture Method	A Text book of Biotechnology -	Quiz
Feb.10 - 17, 2017 (Day Order 1 to 6)	3.4 Genomic Libraries	Lecture Method	Elements of Biotechnology - P. K. Gupta	Quiz
Feb.20 - 27, 2017 (Day Order 1 to 6)	3.5 Hybridization	Lecture Method	Biotechnology - S. S. Purohit	Quiz
Feb.28 – Mar 07, 2017 (Day Order 1 to 6)	4.1 Target cells for Transformation	Lecture Method	Biotechnology - Kamal Nayan Joshi	Quiz
Mar. 06 - 16, 2017	**C.A. IMPROVEMENT TESTS**			
Mar. 08 - 15, 2017 (Day Order 1 to 6)	4.2 Gene Transfer Technique using Agrobacterium	Lecture Method	Elements of Biotechnology - P.K. Gupta .	Quiz
Mar. 16, 2017 (Day Order 1)		Lecture Method	An Introduction to Biotechnology – H.S. Srivastava	Quiz
Mar. 17 - 23, 2017 (Day Order 2 to 6)	**REVISION**			
March 24, 2017 (Day Order 1)				