

**FATIMA MATA NATIONAL COLLEGE (AUTONOMOUS), KOLLAM  
DEPARTMENT OF BOTANY**

**Teaching Plan 2018-2019**

**Subject: BOTANY THEORY Semester: IV**

**Paper: 15UBO431**

**Title: PLANT PHYSIOLOGY AND APPLIED BOTANY**

Name of Teacher	Initials	Module No	Title of the Module	IH
Mrs. Jaya James	JA	1,2,3	Plant physiology	27
Mrs. Smirithi S pillai	SM	4,5,6	Applied Botany	27
Total Instructional Hours (IH)				54

	Date	Topic	1H	Teacher
D1	12/11/2018			
D2	15/11/2018	Environmental biology -Definition-scope and relevance	1	SM
D3	16/11/2018			
D4	19/11/2018			
D5	20/11/2018	Plant physiology- introduction,physiological processes,their significance &applications	1	JA
D6	22/11/2018	Ecosystems-concept,structure and function of an ecosystem	1	SM
D7	26/11/2018			
D8	27/11/2018	Water relations of plants:importance of water to plant life	1	<b>JA</b>
D9	28/11/2018			
D10	29/11/2018	Biotic and abiotic components-energy flow in ecosystem.	1	SM
D11	30/11/2018			
D12	03/12/2018			
D13	04/12/2018	Absorption of water-organs of absorption,root&root hairs.physical aspects of absorption-imbibition,diffusion&osmosis	1	JA
D14	05/12/2018			
D15	06/12/2018	Ecological succession - Definition&types(Hydrosere&Xerosere)	1	<b>SM</b>
D16	07/12/2018			
D17	10/12/2018			
D18	11/12/2018	Plant cell as an osmotic system:water potential&osmotic potential	1	JA

D19	12/12/2018			
D20	13/12/2018	Food chains-food web & Ecological pyramids.	1	<b>SM</b>
D21	14/12/2018			
D22	17/12/2018			
D23	18/12/2018	Plasmolysis & its significance. practical application, mechanism of water absorption	1	JA
D24	19/12/2018			
D25	20/12/2018	Introduction-types, characteristic feature, structure & functions of Forest ecosystem, Grassland ecosystem.	1	<b>SM</b>
D26	21/12/2018			
D27	24/12/2018			
D28	26/12/2018			
D29	27/12/2018	Desert ecosystem, Aquatic ecosystem-ponds, estuaries.	1	SM
D30	28/12/2018			
D31	31/12/2018			
D32	02/01/2019			
D33	03/01/2019	Introduction to horticulture, Garden tools & implements, Methods of vegetative propagation: Cutting, Grafting Layering	3	SM
D34	04/01/2019			
D35	07/01/2019			
D36	08/01/2019	Active & Passive absorption, root pressure pathway of water across root cells. Ascent of sap-vital & physical theories. Loss of water from plants.	3	JA
D37	09/01/2019			
D38	10/01/2019	Special methods of propagation, propagation by seeds. Media for propagation of plants-soil, sand, Cocopeat, sphagnum moss, vermiculture, soil mixture, nursery beds	2	SM
D39	11/01/2019			
D40	14/01/2019			
D41	15/01/2019	Transpiration-cuticular, lenticular & stomatal mechanism, theories-starch sugar hypothesis, potassium ion theory. significance of transpiration, guttation, anti-transpirants, factors affecting transpiration	2	JA
D42	16/01/2019	CAT 1		

D43	17/01/2019	CAT 1		
D44	18/01/2019	CAT 1		
D45	22/01/2019	CAT 1		
D46	23/01/2019	CAT 1		
D47	24/01/2019	Manures-organic&inorganic	1	SM
D48	25/01/2019			
D49	28/01/2019			
D50	29/01/2019	Mineral nutrition-macro &micro elements,role of essential elements&their deficiency symptoms, mechanism of mineral absorption. passive absorption-ion exchange &donna equilibrium. Active absorption-carrier concept	3	<b>JA</b>
D51	30/01/2019			
D52	31/01/2019	Introduction-history-major achievements-Biotechnology in India	1	SM
D53	01/02/2019			
D54	04/02/2019			
D55	05/02/2019	Photosynthesis:introduction,significance & general equation. Photosynthetic apparatus,structure& function of chloroplast,quasomes-solar spectrum& its importance.	1	JA
D56	06/02/2019			
D57	07/02/2019	Plant tissue culture-culture media: composition,preparation and sterilization	1	SM
D58	08/02/2019			
D59	11/02/2019			
D60	12/02/2019	Fluorescence & two pigment systems-raw material for photosynthesis, mechanism of photosynthesis-light reaction-cyclic and non-cyclic photophosphorylation, Hill reaction,Dark reaction,Calvin cycle	2	JA
D61	13/02/2019			
D62	14/02/2019	Totipotency:definition and importance. Dedifferentiation and redifferentiation.	2	<b>SM</b>
D63	15/02/2019			
D64	19/02/2019	Comparative study of C3,C4& CAM Plants. Photorespiration. Factors affecting photosynthesis.Law of limiting factor.	2	JA
D65	20/02/2019			
D66	21/02/2019	Callus culture and suspension culture	2	SM
D67	22/02/2019			
D68	25/02/2019			

D69	26/02/2019	Respiration-introduction, definition, significance & general equation. Respiratory substances, types of respiration-aerobic& anaerobic. Aerobic respiration-Glycolysis. Kreb's cycle, terminal oxidation.	3	JA
D70	27/02/2019			
D71	28/02/2019	Meristem culture, Somatic embryogenesis, anther culture and production of haploids	3	<b>SM</b>
D72	01/03/2019			
D73	04/03/2019			
D74	05/03/2019	SEM II		
D75	06/03/2019	SEM II		
D76	07/03/2019	SEM II		
D77	08/03/2019	SEM II		
D78	11/03/2019	SEM II		
D79	12/03/2019	SEM II		
D80	13/03/2019			
D81	14/03/2019	Plant growth regulators-Auxin, Gibberellins, Cytokinins, Ethylene, Abscisic acid. Synthetic plant hormones- practical applications, senescence and abscission. Photoperiodism	3	SM
D82	15/03/2019			
D83	18/03/2019			
D84	19/03/2019	Anaerobic respiration- fermentation: alcoholic& lactic acid fermentation. Energy relation of respiration-RQ & its significance- factors affecting respiration.	3	<b>JA</b>
D85	20/03/2019			
D86	21/03/2019	Translocation of solutes-pathway of movement, phloem transport, mechanism of transport.	2	<b>SM</b>
D87	22/03/2019			
D88	25/03/2019			
D89	26/03/2019	Munch hypothesis, protoplasmic streaming theory- activated diffusion hypothesis, electro osmotic theory. Growth: phases of growth- vegetative and reproductive growth- growth curve.	3	<b>JA</b>
D90	27/03/2019			
<b>Total Instructional Hours</b>			<b>90</b>	

**Anitha A.**  
**Course Co-ordinator**

**Merlin V J**  
**Head of the Department**

IQAC