

# FATIMA MATA NATIONAL COLLEGE

AUTONOMOUS

(Reaccredited with 'A' Grade by NAAC)  
Affiliated to University of Kerala



Course Plan 19UBO221

**IQAC** INTERNAL QUALITY  
ASSURANCE CELL

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

**Course Plan  
2019-2020**

Subject: Botany Core Theory Semester:II  
**Paper: 19UBO221 Title: Methodology and Perspectives of Science**

Name of Teacher	Initials	Module No	Title of the Module	IH
Dr. Shaiju P.N.	SP	2	Data Handling in Science	12
Dr. Shaiju P.N.	SP	3	Microtechnique	06
Ms Reshma Benson	RB	1	Scientific Studies	08
Ms Reshma Benson	RB	4	Biophysics	10
<b>Total Instructional Hours (IH)</b>				<b>36</b>

Day	Date	Topic	IH	Teacher
D1	02.12.2019	Nature and types of data-typical examples	1	SP
D2	03.12.2019	--		
D3	04.12.2019	Types of knowledge: practical, theoretical and scientific knowledge	1	RB
D4	05.12.2019	--		
D5	06.12.2019	--		
D6	09.12.2019	Data collection, Data presentation- Classification and tabulation	1	SP
D7	10.12.2019	--		
D8	11.12.2019	What is science; what is not science; laws of science; basis of scientific laws and factual truths	1	RB
D9	12.12.2019	--		
D10	13.12.2019	--		
D11	16.12.2019	Diagrammatic (bar, pie diagrams) and graphical representation of data	1	SP
D12	17.12.2019	--		
D13	18.12.2019	Science as a human activity; scientific temper and empiricism, Science disciplines	1	RB
D14	19.12.2019	--		
D15	20.12.2019	--		
D16	30.12.2019	Samples and sampling techniques	1	SP
D17	31.12.2019	--		
D18	01.01.2020	Revolution in Science and Technology Ethics in Science: Scientific information; depositories of scientific	2	RB

		information, Primary, secondary and digital sources		
D19	03.01.2020	--		
D20	06.01.2020	Statistical terms and symbols	1	SP
D21	07.01.2020	--		
D22	08.01.2020	Sharing of knowledge; transparency and Honesty; danger of pre conceived ideas	1	RB
D23	09.01.2020	--		
D24	10.01.2020	--		
D25	11.01.2020	Methods and tools in science: Steps in scientific method. Null hypothesis and alternative hypothesis. Inductive and deductive reasoning	2	RB
D26	13.01.2020	Measures of central tendencies (mean, median, mode)	1	SP
D27	14.01.2020	--		
D28	15.01.2020	Microscopy - simple and compound – phase contrast	1	RB
D29	16.01.2020	--		
D30	17.01.2020	--		
D31	18.01.2020	Range and mean deviation Variance and standard deviation Coefficient of variation	3	SP
D32	20.01.2020	Significance tests (chi-square test)	1	SP
D33	21.01.2020	--		
D34	22.01.2020	CAT I		
D35	23.01.2020	CAT I		
D36	24.01.2020	CAT I		
D37	25.01.2020	Data analysis – Normal frequency distribution and binomial distribution	2	SP
D38	27.01.2020	CAT I		
D39	28.01.2020	--		
D40	29.01.2020	Dark field illumination and electron microscopes (SEM and TEM)	1	RB
D41	30.01.2020	--		
D42	31.01.2020	--		
D43	03.02.2020	Sectioning - hand and microtome–rotary and sledge	1	SP
D44	04.02.2020	--		
D45	05.02.2020	Cryobiology – cryopreservation and its applications	1	RB
D46	06.02.2020	--		
D47	07.02.2020	--		
D48	08.02.2020	Principles and applications of Colorimeter, Spectrophotometer and Centrifuge	2	RB

D49	10.02.2020	Killing and fixation agents – Carnoy’s formula, Farmers formula, F .A. A	1	SP
D50	11.02.2020	--		
D51	12.02.2020	Chromatography	1	RB
D52	13.02.2020	--		
D53	14.02.2020	--		
D54	17.02.2020	Dehydration - reagents	1	SP
D55	18.02.2020	--		
D56	19.02.2020	Electrophoresis	1	RB
D57	20.02.2020	--		
D58	24.02.2020	Stains and staining techniques - double staining. General account; Stains: safranin, haematoxylin, acetocarmine and acetoorcein	1	SP
D59	25.02.2020	--		
D60	26.02.2020	Buffers -their functions in biological systems -Uses of buffers in biological research	1	RB
D61	27.02.2020	--		
D62	28.02.2020	--		
D63	02.03.2020	Mounting media - D. P. X and Canada balsam	1	SP
D64	03.03.2020	--		
D65	04.03.2020	pH meter	1	RB
D66	05.03.2020	CAT II		
D67	06.03.2020	CAT II		
D68	09.03.2020	CAT II		
D69	10.03.2020	CAT II		
D70	11.03.2020	CAT II		
D71	12.03.2020	CAT II		
D72	13.03.2020	--		
D73	16.03.2020	Whole mounts - cytological methods: maceration, smear and squash preparation	1	SP
D74	17.03.2020	--		
D75	18.03.2020	Micrometry, Camera lucida	1	RB
D76	19.03.2020	--		
D77	20.03.2020	--		
D78	23.03.2020	Revision		SP
D79	24.03.2020	ESE		
D80	25.03.2020	ESE		
D83	26.03.2020	ESE		
D84	27.03.2020	ESE		
D85	30.03.2020	ESE		
D86	31.03.2020	ESE		
D87	01.04.2020	ESE		

D88	02.04.2020	ESE		
D89	03.04.2020	ESE		
D90	06.04.2020	ESE		
<b>Total Instructional Hours</b>			<b>36</b>	

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