

ACADEMIC PLAN FOR THE DEPARTMENT OF MICROBIOLOGY					SESSION:2022-23 (EVEN SEMESTER)					
SEMESTER	PAPER	UNIT	TEACHER		No. of class hours allotted per week (as per class routine)		Total no. of class hours required in the session (Approx.)		Duration (in month)	Remark (if any)
			Theory	Practical/Tutorial	Theory	Practical/Tutorial	Theory	Practical/Tutorial		
II nd Semester (UG) (CBCS)	CC-3: BIOCHEMISTRY	Unit 1: Bioenergetics	Dr. Sampa Debnath	Dr. Sampa Debnath	3	4	50	60	4	
		Unit 2: Carbohydrates								
		Unit 5: Enzymes								
		Unit 6: Vitamins								
		Unit 3: Lipids	Dr. Arun Roy		1					
		Unit 4: Proteins								
	CC-4: CELL BIOLOGY	Unit 1: Structure and organization of Cell	Dr. Prasenjit Das	Miss Sahana Ghosh	3	4	50	60		
		Unit 2: Nucleus								
		Unit 3: Protein Sorting and Transport								
		Unit 4: Cell Signalling	Dr. Sudip Samadder		1					
Unit 5: Cell Cycle, Cell Death and Cell Renewal										

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IVth Semester (UG) (CBCS)	CC-8: MICROBIAL GENETICS	Unit 1: Genome Organization and Mutations	Dr. Sudip Samadder	Dr. Surajit Bag Mr. Pinaki Hazra	1	4	50	60	4	SEC-B2 paper does not contain any Practical/Tutorial according to the CBCS syllabus
		Unit 4: Phage Genetics			2					
		Unit 2: Plasmids	Dr. Gargi Saha Kesh		1					
		Unit 3: Mechanisms of Genetic Exchange								
	Unit 5: Transposable elements	Dr. Arun Roy	1							
	CC-9: ENVIRONMENTAL MICROBIOLOGY	Unit 1: Microorganisms and their Habitats	Dr. Saswati Gayen	Dr. Surajit Bag	2	4	50	60	4	
		Unit 3: Biogeochemical Cycling								
		Unit 4: Waste Management								
		Unit 2: Microbial Interactions	Dr. Prasenjit Das		1					
		Unit 5: Microbial Bioremediation	Mr. Pinaki Hazra		1					
	Unit 6: Water Potability									
	CC-10: RECOMBINANT DNA TECHNOLOGY	Unit 1: Introduction to Genetic Engineering	Dr. Gargi Saha Kesh	Dr. Gargi Saha Kesh	2	4	50	60	4	
		Unit 3: Methods in Molecular Cloning								
		Unit 4: DNA Amplification and DNA sequencing								
		Unit 6: Applications of Recombinant DNA Technology								
		Unit 2: Molecular Cloning- Tools and Strategies	Dr. Sudip Samadder		2					
		Unit 5: Construction and Screening of Genomic and cDNA libraries								
	SEC-B2: MICROBIOLOGICAL ANALYSIS OF AIR AND WATER	Unit 1: Aeromicrobiology	Dr. Surajit Bag	-----	2	30	-----	-----	4	
		Unit 2: Air Sample Collection and Analysis								
		Unit 3: Control Measures								
Unit 4: Water Microbiology		Mr. Pinaki Hazra	2							
Unit 5: Microbiological Analysis of Water										
Unit 6: Control Measures										

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VI th Semester (UG) (CBCS)	CC-13: IMMUNOLOGY	Unit 1: Introduction	Dr. Prasenjit Das	Ms. Sahana Ghosh	3	4	50	60	4			
		Unit 2: Immune Cells and Organs										
		Unit 3: Antigens										
		Unit 4: Antibodies										
		Unit 5: Major Histocompatibility Complex										
		Unit 6: Complement System										
		Unit 7: Generation of Immune Response										
		Unit 8: Immunological Disorders and Tumor Immunity									Dr. Sudip Samadder	1
		Unit 9: Immunological Techniques										
	CC-14: MEDICAL MICROBIOLOGY	Unit 1: Normal microflora of the human body and host pathogen interaction	Dr. Saswati Gayen	1								
		Unit 3: Bacterial diseases	Dr. Shilajit Barua	4								
		Unit 2: Sample collection, transport and diagnosis										
Unit 4: Viral diseases												
Unit 7: Antimicrobial agents: General characteristics and mode of action		Mr. Pinaki Hazra	1									
Unit 5: Protozoan diseases												
Unit 6: Fungal diseases												

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VI th Semester (UG) (CBCS)	DSE-A3: PLANT PATHOLOGY	Unit 1: Introduction and History of plant pathology	Miss Sahana Ghosh	Dr. Saswati Gayen Dr. Surajit Bag	1	4	50	60	4	
		Unit 2: Stages in development of a disease	Dr. Saswati Gayen		2					
		Unit 3: Plant disease epidemiology								
		Unit 4: Host Pathogen Interaction								
		Unit 5: Control of Plant Diseases	Dr. Surajit Bag		1					
		Unit 6: Specific Plant diseases								
	DSE-B3: INSTRUMENTATION AND BIOTECHNIQUES	Unit 1: Microscopy	Mr. Pinaki Hazra	Dr. Sampa Debnath	2					
		Unit 3: Electrophoresis								
		Unit 5: Centrifugation								
		Unit 2: Chromatography	Dr. Sampa Debnath		2					
		Unit 4: Spectrophotometry								
	DSE-B4 (PROJECT) (Offered to the few students according to their cumulative performances in the previous semesters. They do not have to study DSEB3)	Few students are selected to conduct summer project instead of DSEB3 paper in the college where they are enrolled under the supervision of departmental teachers. Finally they are evaluated by external and internal examiners appointed by the university							4	