

ACADEMIC PLAN FOR THE DEPARTMENT OF MICROBIOLOGY					SESSION:2020-21 (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										

continued....

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			
IV th Semester (UG) (CBCS)	CC-8: MICROBIAL GENETICS	Unit 1: Genome Organization and Mutations	Dr. Sudip Samadder	Dr. Gargi Saha Kesh	1	4	50	60	4	SEC-A1 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									
	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			Dr. Prasenjit Das						1
		Unit 4: Waste Management									1
		Unit 2: Microbial Interactions									
		Unit 5: Microbial Bioremediation									
	Unit 6: Water Potability	Mr. Pinaki Hazra									
	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											

continued....

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		
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	2						
		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										

continued....

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			
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			Dr. Surajit Bag						1
		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	4	50	60	4		
		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		