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DEPARTMENT OF CHEMISTRY

TEACHING PLAN -2020-2021

TEACHING PLAN OF SEMESTER – I				
PAPER DSC – 1A (CC-1) Atomic Structure, Bonding, general organic chemistry & aliphatic hydrocarbons				
	MODULE	TEACHER	NO OF LECTURES	TO BE COMPLETED
Unit- I	Atomic Structure	S.S	06	2 MONTHS
Unit- II	Chemical Bonding and Molecular Structure		10	
Unit- III	Fundamentals of Organic Chemistry		06	
Unit- IV	Stereochemistry		05	
Unit- V	Aliphatic Hydrocarbons (Alkanes, Alkenes, Alkynes)		10	
PAPER DSC – 1A (P)				
Unit- I	Estimation of oxalic acid by titrating it with KMnO_4 .	S.S	09	2 MONTHS
Unit- II	Estimation of Fe (II) ions by titrating it with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator.			
Unit- III	Estimation of Cu (II) ions iodometrically using $\text{Na}_2\text{S}_2\text{O}_3$.			
Unit- IV	Detection of extra elements (N, S, Cl, Br, I) in organic compounds (containing upto two extra elements)		05	

TEACHING PLAN OF SEMESTER – V (2020-2021)

PAPER DSE1T: Organometallics, Bioinorganic Chemistry, Polynuclear hydrocarbons and UV, IR Spectroscopy

	MODULE	TEACHER	NO OF LECTURES	TO BE COMPLETED
Unit- I	Chemistry of 3d metals	PARNAB DOLUI	06	2 MONTHS
Unit- II	Organometallic Compounds		08	
Unit- III	Bio-inorganic Chemistry		06	
Unit- IV	Polynuclear and heteronuclear aromatic compounds:		06	
Unit- V	Active methylene compounds		05	
Unit- VI	Application of Spectroscopy to Simple Organic Molecules		06	1 MONTH
PAPER GE-3P: LAB: Practicals				
Unit- I	Separation of mixtures by chromatography: Measure the R _f value in each case. (Combination of two ions to be given) Paper chromatographic separation of Fe ³⁺ , Al ³⁺ and Cr ³⁺ or Paper chromatographic separation of Ni ²⁺ , Co ²⁺ , Mn ²⁺ and Zn ²⁺	PARNAB DOLUI	06	
Unit- II	Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, amines) and preparation of one derivative.		08	

TEACHING PLAN OF SEMESTER – V (2020-2021)

PAPER SEC3T: Pharmaceutical Chemistry

	MODULE	TEACHER	NO OF LECTURES	TO BE COMPLETED
Unit- I	Drugs & Pharmaceuticals: Drug discovery, design and development; Basic Retrosynthetic approach. Synthesis of the representative drugs of the following classes: analgesics agents, antipyretic agents, antiinflammatory agents (Aspirin, paracetamol, Ibuprofen); antibiotics (Chloramphenicol); antibacterial and antifungal agents (Sulphonamides; Sulphanethoxazol, Sulphacetamide, Trimethoprim); antiviral agents (Acyclovir), Central Nervous System agents (Phenobarbital, Diazepam), Cardiovascular (Glyceryl trinitrate), antilaproxy (Dapsone), HIV- AIDS related drugs (AZT- Zidovudine).	PARNAB DOLUI	16	3 MONTHS
Unit- II	Fermentation: Aerobic and anaerobic fermentation. Production of (i) Ethyl alcohol and citric acid, (ii) Antibiotics; Penicillin, Cephalosporin, Chloromycetin and Streptomycin, (iii) Lysine, Glutamic acid, Vitamin B2, Vitamin B12 and Vitamin C.		10	
PAPER SEC3P: Practical				
Unit- I	Preparation of Aspirin and its analysis.	PARNAB DOLUI	04	
Unit- II	Preparation of magnesium bisilicate (Antacid).		04	

TEACHING PLAN OF SEMESTER – II

PAPER DSC – -1B (CC-2): Chemical Energetics, Equilibria & Functional Organic Chemistry .

	MODULE	TEACHER	NO OF LECTURES	TO BE COMPLETED
Unit- I	Atomic Structure	S.S	06	2 MONTHS
Unit- II	Chemical Bonding and Molecular Structure		10	
Unit- III	Fundamentals of Organic Chemistry		06	
Unit- IV	Stereochemistry		05	
Unit- V	Aliphatic Hydrocarbons (Alkanes, Alkenes, Alkynes)		10	
Unit- VI				
PAPER DSC – 1A (P)				
Unit- I	Estimation of oxalic acid by titrating it with KMnO₄.	S.S	09	2 MONTHS
Unit- II	Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using internal indicator.			
Unit- III	Estimation of Cu (II) ions iodometrically using Na₂S₂O₃.			
Unit- IV	Detection of extra elements (N, S, Cl, Br, I) in organic compounds (containing upto two extra elements)		05	

TEACHING PLAN OF SEMESTER VI (2020-2021)**PAPER DSE-2T: INDUSTRIAL CHEMICALS AND ENVIRONMENT**

	MODULE	TEACHER	NO OF LECTURES	TO BE COMPLETED
Unit-I	Industrial Gases and Inorganic Chemicals	PARNAB DOLUI	10	2months
Unit-II	Industrial Metallurgy (General principles of Metallurgy)		6	
Unit-III	Environment and its Segments		8	
Unit-IV	Energy and Environment		4	
Unit-V	Biocatalysis		3	
PAPER DSE-2P: INDUSTRIAL CHEMICALS AND ENVIRONMENT				
Unit-I	Determination of Dissolved Oxygen in Water	PARNAB DOLUI	2	2 months
Unit-II	Determination of Chemical Oxygen Demand (COD)		3	
Unit-III	Determination of Biological Oxygen Demand (BOD)		3	
Unit-IV	Percentage of available chlorine in Bleaching Powder		2	
Unit-V	Measurement of choride,Sulphate and Salinity of water Sample by Simple Titration Method (AgNO ₃ and Potassium Chromate)		4	
Unit-VI	Prepration of Borax /Boric Acid		2	