

									MANAGEMENT (5.4.2 CG)			
Aug	CC-1:FINANCIAL ACCOUNTING-I (1.2 CG)	Unit1	BK	10	CC-5: CORPORATE LAWS (3.1 CG)	Unit1	KD	10	CC-9: FINANCIAL ACCOUNTING-III (5.1 CG) Unit 1	Unit1	BH	10
		Unit-2	KD	10		Unit-2	BH	10		Unit-2	KD	10
		Unit-3	BH	10		Unit-3	BK	10		Unit-3	SPD	10
	CC-2:BUSINESS MANAGEMENT (1.3 CG)	Unit1	SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CG)	Unit1	BH	8	CC-10:AUDITING (5.2 CG)	Unit-2	SPD	10
						Unit-2	KD	10		Unit-3	BH	10
		Unit1	SPD	10	SEC-1:E-COMMERCE (3.4 CG)	Unit2	SPD	10	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CG)	Unit-4	KD	10
						Unit-3	BH	10	OR	Unit-2	BH	15
						Unit-2	BK	15	DSE-1: FUNDAMENTALS OF MARKETING MANAGEMENT (5.3.2 CG)	Unit-2	BK	15
									DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CG)	Unit-2	SPD	10
	Unit-2	SPD	10	OR	DSE-2: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT							

									(5.4.2 CG)				
Sept	CC-1:FINANCIAL ACCOUNTING-I (1.2 CG)	Unit1	BK	10	CC-5: CORPORATE LAWS (3.1 CG)	Unit-4	KD	10	CC-9: FINANCIAL ACCOUNTING-III (5.1 CG) Unit 1	Unit-4	BH	10	
		Unit-2	KD	10		Unit-2	BH	10		Unit-5	KD	10	
		Unit-3	BH	10		Unit-3	BK	10		Unit-3	SPD	10	
	CC-2:BUSINESS MANAGEMENT (1.3 CG)	Unit-2	SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CG)	Unit3	BH	10	CC-10:AUDITING (5.2 CG)	Unit-3	SPD	10	
						Unit-4	KD	10		Unit-5	BH	10	
		SEC-1:E-COMMERCE (3.4 CG)					Unit-4	SPD	10	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CG)	Unit-4	KD	10
							Unit-5	BH	10	OR	Unit-3	BH	15
										DSE-1: FUNDAMENTALS OF MARKETING MANAGEMENT (5.3.2 CG)	Unit-3	BK	15
										DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CG)	Unit-3	SPD	10
										OR			
								DSE-2: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (5.4.2 CG)					
Oct	CC-1:FINANCIAL	Unit1	BK	10	CC-5:	Unit-4	KD	8	CC-9:	Unit-4	BH	7	

	ACCOUNTING-I (1.2 CG)	Unit-2	KD	10	CORPORATE LAWS (3.1 CG)	Unit-5	BH	10	FINANCIAL ACCOUNTING-III (5.1 CG) Unit 1	Unit-5	KD	7
		Unit-3	BH	10		Unit-3	BK	7		Unit-3	SPD	7
	CC-2:BUSINESS MANAGEMENT (1.3 CG)	Unit-3	SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CG)	Unit-5	BH	7		Unit-4	SPD	10
						Unit-4	KD	10	CC-10:AUDITING (5.2 CG)	Unit-5	BH	8
					SEC-1:E-COMMERCE (3.4 CG)	Unit-4	SPD	10	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CG)	Unit-4	KD	7
						Unit-5	BH	10	OR	Unit-4	BH	10
									DSE-1: FUNDAMENTALS OF MARKETING MANAGEMENT (5.3.2 CG)	Unit-4	BK	7
									DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CG)	Unit-4	SPD	10
									OR			
									DSE-2: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (5.4.2 CG)			
Nov	CC-1:FINANCIAL ACCOUNTING-I (1.2 CG)	Unit-4	BK	10	CC-5: CORPORATE LAWS (3.1 CG)	Unit-4	KD	7	CC-9: FINANCIAL ACCOUNTING-III (5.1 CG) Unit 1	Unit-4	BH	7
		Unit-5	KD	16		Unit-5	BH	10		Unit-5	KD	7
		Unit-3	BH	10		Unit-3	BK	6		Unit-3	SPD	7

	CC-2:BUSINESS MANAGEMENT (1.3 CG) Unit 4: Staffing and Leading	Unit-4	SPD	12	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CG) SEC-1:E-COMMERCE (3.4 CG)	Unit-5 Unit-4 Unit-4 Unit-5	BH KD SPD BH	8 10 10 10	CC-10:AUDITING (5.2 CG) DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CG) OR DSE-1: FUNDAMENTALS OF MARKETING MANAGEMENT (5.3.2 CG) DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CG) OR DSE-2: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (5.4.2 CG)	Unit-5 Unit-5 Unit-4 Unit-5 Unit-5 Unit-5	SPD MLT KD BH BK SPD	10 8 7 10 7 10
Dec	CC-1:FINANCIAL ACCOUNTING-I (1.2 CG) CC-2:BUSINESS MANAGEMENT (1.3 CG)	Unit-4 Unit-5 Revision Unit-5	BK KD BH SPD	10 10 5 15	CC-5: CORPORATE LAWS (3.1 CG) CC-6:	Revision Revision Revision Unit-5 Revision	KD BH BK BH KD	8 5 7 10 7	CC-9: FINANCIAL ACCOUNTING-III (5.1 CG) Unit 1 CC-10:AUDITING	Revision Revision Revision Unit-5	BH KD SPD SPD	6 7 7 10

	CG) Unit 5: Control				INCOME TAX LAW AND PRACTICE (3.2 CG)				(5.2 CG)	Revision	BH	8
						Revision	SPD	7	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CG)	Revision	KD	7
					SEC-1:E-COMMERCE (3.4 CG)	Revision	BH	7	OR	Revision	BH	8
									DSE-1: FUNDAMENTALS OF MARKETING MANAGEMENT (5.3.2 CG)	Revision	BK	7
									DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CG)	Revision	SPD	8
									OR			
									DSE-2: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (5.4.2 CG)			
Jan	Sem-II (H)				Sem-IV (H)				Sem-VI (H)			
	GE-1: PRINCIPLES OF ECONOMICS (2.2 CG)	Unit-1	BK	12	CC-7:FINANCIAL ACCOUNTING-II(4.1 CG)	Unit-1 Unit-2	KD BH	10 15	SEC-4: PERSONAL SELLING AND SALESMANSHIP (6.1 CG)	Unit-1	BH	10
	CC-3: BUSINESS LAW (2.3 CG)	Unit-1	SPD	10	CC-8: COST ACCOUNTING-II (4.2 CG)	Unit-1	SPD	13	GE-2: BUSINESS MATHEMATICS AND STATISTICS (6.2 CG)	Unit-1 Unit-2	BK BH	12 10
	CC-4: COST ACCOUNTING-I (2.4 CG)	Unit-1 Unit-2	KD BH	10 10	SEC-2: COMPUTER APPLICATIONS IN BUSINESS (PRACTICAL) (4.3 CG)	Unit-1	BH	4	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CG)	Unit-1 Unit-2	KD BK	10 10
						Unit-1	BK	7				

					SEC-3: ENTREPRENEURSHIP (4.4 CG)				OR DSE-3: INDIRECT TAX LAW (6.3.2 CG)	Unit-1 Unit-2	BH KD	10 10
									DSE-4: INTERNATIONAL BUSINESS(6.4.1 CG)	Unit-1 Unit-2	SPD MLT	15 10
									OR DSE-4: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.4.2 CG)	Unit-1 Unit-2	BH KD	10 13
												10
Feb	GE-1: PRINCIPLES OF ECONOMICS (2.2 CG)	Unit-2	BK	10	CC-7:FINANCIAL ACCOUNTING-II(4.1 CG)	Unit-1 Unit-2	KD BH	10 10	SEC-4: PERSONAL SELLING AND SALESMANSHIP (6.1 CG)	Unit-2	BH	10
	CC-3: BUSINESS LAW (2.3 CG)	Unit-2	SPD	10	CC-8: COST ACCOUNTING-II (4.2 CG)	Unit-2	SPD	13	GE-2: BUSINESS MATHEMATICS AND STATISTICS (6.2 CG)	Unit-3 Unit-2	BK BH	12 10
	CC-4: COST ACCOUNTING-I (2.4 CG)	Unit-1 Unit-2	KD BH	10 13	SEC-2: COMPUTER APPLICATIONS IN BUSINESS (PRACTICAL) (4.3 CG)	Unit-2	BH	10	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CG)	Unit-3 Unit-2	KD BK	10 10
					SEC-3: ENTREPRENEURSHIP (4.4 CG)	Unit-2	BK	10	OR DSE-3: INDIRECT TAX LAW (6.3.2 CG)	Unit-3 Unit-2	BH KD	10 10
										Unit-3	SPD	15

May	GE-1: PRINCIPLES OF ECONOMICS (2.2 CG)	Unit-5	BK	10	CC-7:FINANCIAL ACCOUNTING-II(4.1 CG)	Unit-5 Unit-4	KD BH	10 10	SEC-4: PERSONAL SELLING AND SALESMANSHIP (6.1 CG)	Unit-5	BH	10
	CC-3: BUSINESS LAW (2.3 CG)	Unit-5	SPD	15	CC-8: COST ACCOUNTING-II (4.2 CG)	Unit-5	SPD	12	GE-2: BUSINESS MATHEMATICS AND STATISTICS (6.2 CG)	Unit-5 Unit-4	BK BH	12 10
	CC-4: COST ACCOUNTING-I (2.4 CG)	Unit-5 Unit-4	KD BH	10 10	SEC-2: COMPUTER APPLICATIONS IN BUSINESS (PRACTICAL) (4.3 CG)	Unit-5	BH	10	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CG)	Unit-5 Unit-4	KD BK	10 10
					SEC-3: ENTREPRENEURSHIP (4.4 CG)	Unit-5	BK	10	OR DSE-3: INDIRECT TAX LAW (6.3.2 CG)	Unit-5 Unit-4	BH KD	10 10
									DSE-4: INTERNATIONAL BUSINESS(6.4.1 CG)	Unit-4 Unit-5	SPD BH	10 10
								OR DSE-4: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.4.2 CG)	Unit-5 Unit-4	BH KD	10 13	
June	GE-1: PRINCIPLES OF ECONOMICS (2.2 CG)	Revision	BK	5	CC-7:FINANCIAL ACCOUNTING-II(4.1 CG)	Revision Revision	KD BH	7 7	SEC-4: PERSONAL SELLING AND	Revision	BH	7

	CC-3: BUSINESS LAW (2.3 CG) Unit 5: The Negotiable Instruments Act 1881	Revision	SPD	7	CC-8: COST ACCOUNTING-II (4.2 CG)	Revision	SPD	10	SALESMANSHIP (6.1 CG)			
	CC-4: COST ACCOUNTING-I (2.4 CG)	Revision Revision	KD BH	5 5	SEC-2: COMPUTER APPLICATIONS IN BUSINESS (PRACTICAL) (4.3 CG)	Revision	BH	8	GE-2: BUSINESS MATHEMATICS AND STATISTICS (6.2 CG)	Revision Revision	BK BH	8 7
					SEC-3: ENTREPRENEURSHIP (4.4 CG)	Revision	BK	7	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CG)	Revision Revision	KD BK	7 6
									OR DSE-3: INDIRECT TAX LAW (6.3.2 CG)	Revision Revision	BH KD	7 8
									DSE-4: INTERNATIONAL BUSINESS(6.4.1 CG)	Revision Revision	SPD BH	7 6
									OR DSE-4: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.4.2 CG)	Revision Revision	BH KD	8 7

Head of the Department,
Department of Commerce
Suri Vidyasagar College

DEPARTMENT OF COMMERCE

TEACHING PLAN OF B.com (Honours) (July 2018 – June 2019 Odd and Even Semester)

Month	Sem-I (H)	Units	Teachers Name	No. of Lecture	Sem-III (H)	Units	Teachers Name	No. of Lecture	Sem-V (H)	Units	Teachers Name	No. of Lecture		
Jul	CC1:FINANCIAL ACCOUNTING-I (1.2 CH)	Unit1	BK	6	CC-5:CORPORATE LAWS (3.1 CH)	Unit1	BH	10	CC-11: FINANCIAL ACCOUNTING-III (5.1 CH)	Unit1	KD	10		
		Unit-2	BH	6		Unit2	BH	10		Unit2	BH	10		
		Unit-3	KD	6		Unit-1	BH	5		Unit-1	SPD	10		
	CC-2:BUSINESS MANAGEMENT(1.3 CH)	Unit-1		SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CH)	Unit2	KD	10	CC-12: AUDITING (5.2 CH)	Unit-1		SPD	10
		Unit-1		SPD	10		Unit-1	KD	10		Unit-1	BH	10	Unit-2
	GE-1:MICRO ECONOMICS (1.4 CH)	Unit-1		SPD	10	CC-7: FINANCIAL ACCOUNTING- II (3.3 CH)	Unit-2	BH	10	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CH)	Unit-3		BK	10
		Unit-2		BK	10		Unit-1	SPD	6		OR	Unit-1		BK
	SEC-1 E-COMMERCE (3.4 CH)	Unit-1		SPD	6	GE-3:INDIAN ECONOMY (3.5 CH)	Unit-2	BH	6	DSE-1: FUNDAMENTALS OF BANKING AND INSURANCE (5.3.2 CH)	Unit-1		BK	12
		Unit-2		BH	6		Unit-1	SPD	6		Unit-2	BH	8	8
		Unit-1		SPD	12		Unit-1	SPD	12		DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CH)	Unit-2		BK
	Unit-1		BH	6					OR		Unit1		BH	10
	Unit-2		BH	6					DSE-2: ADVERTISING (5.4.2 CH)		Unit1		BH	10

Aug	CC1:FINANCIAL ACCOUNTING-I	Unit-2	BH	6	CC-5:CORPORATE LAWS (3.1 CH)	Unit-2	BH	5	CC-11: FINANCIAL ACCOUNTING-III (5.1 CH)	Unit-1	KD	6					
		Unit-1	BK	6		Unit-2	BH			5							
		Unit-3	KD	7		Unit-2	BH			5							
	CC-2:BUSINESS MANAGEMENT(1.3 CH)	Unit-2	SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CH)	Unit-1	KD	5	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CH)	Unit-2	KD	10	10				
														Unit-1	BH	10	10
	GE-1MICRO ECONOMICS (1.4 CH)	Unit-2	BK	10	CC-7: FINANCIAL ACCOUNTING- II (3.3 CH)	Unit-1	SPD	10	DSE-1: FUNDAMENTALS OF BANKING AND INSURANCE (5.3.2 CH)	Unit-2	BH	8					
													Unit-1	BH	10	10	
																	Unit-2
	SEC-1 E-COMMERCE (3.4 CH)	Unit-2	SPD	10	GE-3:INDIAN ECONOMY (3.5 CH)	Unit-2	SPD	10	DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CH)	Unit-3	BK	10					
Unit-2													BH	8			
															Unit-3	SPD	10
OR	Unit-2	BH	13	DSE-2: ADVERTISING (5.4.2 CH)	Unit-3	BH	10										
								Unit-3	SPD	10							
											Unit-3	BH	10				
Sept	CC1:FINANCIAL ACCOUNTING-I	Unit3	KD	5	CC-5:CORPORATE LAWS (3.1 CH)	Unit3	BH	10	CC-11: FINANCIAL ACCOUNTING-III (5.1 CH)	Unit3				KD	10		
		Unit-4	BK	5		Unit-3	KD	10		Unit-4	BH	10					
		Unit-5	BH	10		Unit-4	BH	10		Unit-3	SPD	10					
	CC-2:BUSINESS MANAGEMENT(1.3 CH)	Unit-3	SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CH)	Unit-3	KD	10	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CH)	Unit-5	KD	12	10				
														Unit-4	BH	8	
																	Unit-3
	GE-1:MICRO ECONOMICS (1.4 CH)	Unit-3	BK	10	CC-7: FINANCIAL ACCOUNTING- II (3.3 CH)	Unit-3	SPD	10	OR	Unit-3	BK	10					
													Unit-3	BK	10		
																Unit-3	BK
DSE-1: FUNDAMENTALS OF BANKING AND	Unit-3	BK	10	DSE-2: ADVERTISING (5.4.2 CH)	Unit-3	BH	10										
								Unit-3	BK	10							
											Unit-3	BK	10				

	CH)	Unit-4	BH	10	SEC-1 E-COMMERCE (3.4 CH)	Unit-4	BH	10	INSURANCE (5.3.2 CH)			
					GE-3:INDIAN ECONOMY (3.5 CH)	Unit-3	SPD	10	DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CH)	Unit-3 Unit-4	BK BH	13 10
									OR			
									DSE-2: ADVERTISING (5.4.2 CH)	Unit-4 Unit-3	SPD BH	7 10
Oct	CC1:FINANCIAL ACCOUNTING-I	Unit-5	BH	10	CC-5:CORPORATE LAWS (3.1 CH)	Unit-4	BH	10	CC-11: FINANCIAL ACCOUNTING-III (5.1 CH)	Unit-4 Unit-3	BH KD	10 10
		Unit-4	BK	10					CC-12: AUDITING (5.2 CH)	Unit-4	SPD	13
		Revision	KD	5					DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CH)	Unit-4	BH	10
	CC-2:BUSINESS MANAGEMENT(1. 3 CH)	Unit-3	SPD	10	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CH)	Unit-5	KD	10		Unit-5 Unit-3	KD BK	10 8
		Unit-4	BH	10		Unit-4	BH	7	OR			
	GE-1:MICRO ECONOMICS (1.4 CH)	Unit-4	BH	10	CC-7: FINANCIAL ACCOUNTING- II (3.3 CH)	Unit-4	BH	7	DSE-1: FUNDAMENTALS OF BANKING AND INSURANCE (5.3.2 CH)	Unit-4	BK	10
		Unit-5A	BK	10		Unit-5	KD	10				
					SEC-1 E-COMMERCE (3.4 CH)	Unit-3 Unit-4	SPD BH	7 7	DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CH)	Unit-4 Unit-5	BK BH	13 10
					GE-3:INDIAN ECONOMY (3.5 CH)				OR			
						Unit-4	SPD	10	DSE-2: ADVERTISING (5.4.2 CH)	Unit-4 Unit-5	SPD BH	6 7

Nov	CC1:FINANCIAL ACCOUNTING-I	Revision	KD	3	CC-5:CORPORATE LAWS (3.1 CH)	Unit-5	BH	10	CC-11: FINANCIAL ACCOUNTING-III (5.1 CH)	Unit-4	BH	10								
		Unit-5	BH	5		Unit-5	KD	8		Unit-5	SPD	10								
		Unit-4	BK	4		Unit-4	BH	7		CC-12: AUDITING (5.2 CH)	Unit-4	BH	8							
	Unit-5	SPD	5	Unit-5	KD				12					Unit-5	BK	7				
	CC-2:BUSINESS MANAGEMENT(1.3 CH)	Unit-5A	BH	5	CC-7: FINANCIAL ACCOUNTING- II (3.3 CH)	Unit-4	BH	10	DSE-1: MANAGEMENT ACCOUNTING (5.3.1 CH)	Unit-5	BK	10								
		Unit-5B	BK	5		Unit-5	SPD	10					Unit-5	BK	7					
	GE-1:MICRO ECONOMICS (1.4 CH)	Unit-5B	BK	5	SEC-1 E-COMMERCE (3.4 CH)	Unit-3	BH	8	DSE-1: FUNDAMENTALS OF BANKING AND INSURANCE (5.3.2 CH)	Unit-4	BH	8								
		Unit-5	SPD	5		Unit-5	SPD	10					DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CH)	Unit-4	SPD	10				
		Unit-5	SPD	5		Unit-5	SPD	10									OR	Unit-4	BH	8
		Unit-5	SPD	5		Unit-5	SPD	10												
Unit-5		SPD	5	Unit-5		SPD	10	Unit-5					BH	10						
Dec	CC1:FINANCIAL ACCOUNTING-I	Revision	BH	5	CC-5:CORPORATE LAWS (3.1 CH)	Revision	BH	8	CC-11: FINANCIAL ACCOUNTING-III (5.1 CH)	Revision	BH	7								
		Revision	KD	5		Revision	KD	8		Revision	KD	7								
		Revision	BK	5		Revision	BH	7		Revision	SPD	7								
	CC-2:BUSINESS MANAGEMENT(1.3 CH)	Revision	SPD	5	CC-6: INCOME TAX LAW AND PRACTICE (3.2 CH)	Revision	BH	10	CC-12: AUDITING (5.2 CH)	Revision	KD	7								
		Revision	SPD	5		Revision	BH	10		Revision	BH	7								
		Revision	SPD	5		Revision	BH	10		Revision	BK	6								
		Revision	SPD	5		Revision	KD	10		Revision	BK	6								
				CC-7: FINANCIAL																

	GE-1:MICRO ECONOMICS (1.4 CH)	Unit-5A	BH	5	ACCOUNTING- II (3.3 CH)	Revision	SPD	8	OR	Revision	BK	10
		Unit-5B	BK	5	SEC-1 E-COMMERCE (3.4 CH)	Revision	SPD	8	DSE-1: FUNDAMENTALS OF BANKING AND INSURANCE (5.3.2 CH)	Revision	BK	6
					GE-3:INDIAN ECONOMY (3.5 CH)				DSE-2:INDIAN FINANCIAL SYSTEM (5.4.1 CH)	Revision	BH	10
									OR	Revision	SPD	10
									DSE-2: ADVERTISING (5.4.2 CH)			
Jan	Sem-II (H)				Sem-IV (H)				Sem-VI (H)			
	CC-3: COST ACCOUNTING(2.2 CH)	Unit-1	KD	10	GE-4:BUSINESS MATHEMATICS AND STATISTICS (4.1 CH)	Unit-1	BK	10	CC- 13: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.1 CH)	Unit-1	KD	10
		Unit2	BH	10						Unit-2	BH	10
	CC-4: BUSINESS LAW (2.3 CH)	Unit-1	SPD	10	CC-8:FUNDAMENTALS OF MARKETING MANAGEMENT (4.2 CH)	Unit-1	BH	10	CC-14 INDIRECT TAX LAW (6.2 CH)	Unit-1	BH	10
						Unit-2	KD	10	Unit 1			
						Unit-3	BK	7				
	GE-2: MACRO ECONOMICS (2.4 CH)	Unit-1	BH	10	CC-9:COMPUTER APPLICATIONS IN BUSINESS (4.3 CH)	Unit-1	BH	10	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CH)	Unit-1	BK	10
		Unit2	BK	10		Unit-2	SPD	10				
					SEC-2: ENTREPEURSHIP (4.4 CH)	Unit-1	BK	7	OR	Unit-1	KD	10
									DSE-3: TAX PROCEDURES AND MANAGEMENT (6.3.2 CH)	Unit-2	BH	10
					CC-10: FUNDAMENTALS OF HUMAN RESOURCE	Unit2	SPD	13	DSE-4: INTERNATIONAL BUSINESS (6.4.1 CH)	Unit1	SPD	10
										Unit2	BH	10
										Unit3	BK	10

					MANAGEMENT (4.5 CH)							
Feb	CC-3: COST ACCOUNTING(2.2 CH)	Unit-1	KD	10	GE-4:BUSINESS MATHEMATICS AND STATISTICS (4.1 CH)	Unit-2	BK	10	CC- 13: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.1 CH)	Unit-2	BH	10
		Unit2	BH	10							Unit-1	KD
	CC-4: BUSINESS LAW (2.3 CH)	Unit-1	SPD	10	CC-8:FUNDAMENTALS OF MARKETING MANAGEMENT (4.2 CH)	Unit-5	KD	10	CC-14 INDIRECT TAX LAW (6.2 CH) Unit 1	Unit-2	BH	10
						Unit-4	BH	12				
	GE-2: MACRO ECONOMICS (2.4 CH)	Unit-1	BH	10		Unit-3	BK	10		Unit-2	BK	15
		Unit2	BK	10		Unit-1	BH	10		Unit-2	BK	15
					CC-9:COMPUTER APPLICATIONS IN BUSINESS (4.3 CH)	Unit2	SPD	10	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CH)			
						Unit-2	BK	10			Unit1	KD
					SEC-2: ENTREPEURSHIP (4.4 CH)	Unit-2	SPD	13	DSE-3: TAX PROCEDURES AND MANAGEMENT (6.3.2 CH)	Unit-2	BH	10
					CC-10: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (4.5 CH)				DSE-4: INTERNATIONAL BUSINESS (6.4.1 CH)	Unit-1	SPD	15
									Unit2	BH	10	
									Unit3	BK	10	
Mar	CC-3: COST ACCOUNTING(2.2 CH)	Unit-3	KD	10	GE-4:BUSINESS MATHEMATICS AND STATISTICS (4.1 CH)	Unit-3	BK	15	CC- 13: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.1 CH)	Unit-3	KD	10
		Unit-4	BH	10							Unit-4	BH
	CC-4: BUSINESS LAW (2.3 CH)	Unit2	SPD	10	CC-8:FUNDAMENTALS OF MARKETING				CC-14 INDIRECT TAX LAW (6.2 CH)	Unit-3	BH	10

	GE-2: MACRO ECONOMICS (2.4 CH)	Unit-3 Unit-4	BK BH	10 10	MANAGEMENT (4.2 CH) CC-9:COMPUTER APPLICATIONS BUSINESS (4.3 CH) SEC-2: ENTREPEURSHIP (4.4 CH) CC-10: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (4.5 CH)	Unit-5 Unit-4 Unit-3 Unit-4 Unit-3 Unit-3	KD BH BK SPD BH BK SPD	10 10 8 10 10 10 10	Unit 1 DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CH) OR DSE-3: TAX PROCEDURES AND MANAGEMENT (6.3.2 CH) DSE-4: INTERNATIONAL BUSINESS (6.4.1 CH)	Unit-3 Unit-3 Unit-4 Unit-4 Unit2 Unit3	BK KD BH SPD BH BK	8 10 10 15 10 10
Apr	CC-3: COST ACCOUNTING(2.2 CH) CC-4: BUSINESS LAW (2.3 CH)	Unit-4 Unit-3 Unit-3	BH KD SPD	8 10 10	GE-4:BUSINESS MATHEMATICS AND STATISTICS (4.1 CH) CC-8:FUNDAMENTALS OF MARKETING MANAGEMENT (4.2 CH)	Unit-4 Unit-4 Unit-5 Unit-3	BK BH KD BK	10 10 10 10	CC- 13: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.1 CH) CC-14 INDIRECT TAX LAW (6.2 CH) Unit 1	Unit-4 Unit-5 Unit-4	BH KD BH	10 10 15

	GE-2: MACRO ECONOMICS (2.4 CH)	Unit-5 Unit-4	BK BH	10 10	CC-9:COMPUTER APPLICATIONS IN BUSINESS (4.3 CH) SEC-2: ENTREPEURSHIP (4.4 CH) CC-10: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (4.5 CH)	Unit-5 Unit-4 Unit-4 Unit-4	SPD BH BK SPD	10 10 10 7	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CH) OR DSE-3: TAX PROCEDURES AND MANAGEMENT (6.3.2 CH) DSE-4: INTERNATIONAL BUSINESS (6.4.1 CH)	Unit-4 Unit-4 Unit-5 Unit-5 Unit2 Unit3	BK BH KD SPD BH BK	10 7 10 10 10 10
May	CC-3: COST ACCOUNTING(2.2 CH) CC-4: BUSINESS LAW (2.3 CH) GE-2: MACRO ECONOMICS (2.4 CH)	Revision Unit-5 Unit-4 Unit-5 Revision	KD BH SPD BK BH	3 8 10 10 3	GE-4:BUSINESS MATHEMATICS AND STATISTICS (4.1 CH) CC-8:FUNDAMENTALS OF MARKETING MANAGEMENT (4.2 CH) CC-9:COMPUTER APPLICATIONS IN BUSINESS (4.3 CH)	Unit-4 Unit-5 Unit-4 Unit-3 Unit-5 Unit-4 Unit-5	BK KD BH BK SPD BH BK	10 10 10 7 10 10 10	CC- 13: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.1 CH) CC-14 INDIRECT TAX LAW (6.2 CH) Unit 1 DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CH) OR DSE-3: TAX PROCEDURES AND	Unit-4 Unit-5 Unit-5 Unit-5 Unit-4 Unit-5	BH KD BH BK BH KD	5 5 8 7 7 7

					SEC-2: ENTREPEURSHIP (4.4 CH) CC-10: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (4.5 CH)	Unit-5	SPD	10	MANAGEMENT (6.3.2 CH) DSE-4: INTERNATIONAL BUSINESS (6.4.1 CH)	Unit-5 Unit12 Unit13	SPD BH BK	7 8 7
June	CC-3: COST ACCOUNTING(2.2 CH)	Unit-5	BH	10	GE-4:BUSINESS MATHEMATICS AND STATISTICS (4.1 CH)	Revision	BK	5	CC- 13: FUNDAMENTALS OF FINANCIAL MANAGEMENT (6.1 CH)	Revision Revision	BH KD	10 10
	CC-4: BUSINESS LAW (2.3 CH)	Unit-5	SPD	12	CC-8:FUNDAMENTALS OF MARKETING MANAGEMENT (4.2 CH)	Revision Revision Revision	KD BH BK	5 5 5	CC-14 INDIRECT TAX LAW (6.2 CH) Unit 1	Revision	BH	5
	GE-2: MACRO ECONOMICS (2.4 CH)	Revision	BH	5		Revision	SPD	5	DSE-3: FUNDAMENTALS OF INVESTMENT (6.3.1 CH)	Revision	BK	10
		Revision	BK	5	CC-9:COMPUTER APPLICATIONS IN BUSINESS (4.3 CH)	Revision	BH	5	OR	Revision Revision	KD BH	10 10
									DSE-3: TAX PROCEDURES AND			

					SEC-2: ENTREPEURSHIP (4.4 CH)	Revision	BK	5	MANAGEMENT (6.3.2 CH)	Revision	SPD	10
					CC-10: FUNDAMENTALS OF HUMAN RESOURCE MANAGEMENT (4.5 CH)	Revision	SPD	8	DSE-4: INTERNATIONAL BUSINESS (6.4.1 CH)	Revision Revision	BH BK	7 7

Head of the Department,
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DEPARTMENT OF MATHEMATICS

TEACHING PLAN OF PROF. SHUBHENDU GHOSH
Mathematics (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	CC01: Calculus Unit-2:Reduction Formula	5+1	CC06: Group Theory-1 Unit-1:Groups and its elementary property.	12+2	Paper -VII: Probability and Statistics Concept of mathematical probability, classical statistical and axiomatic definition of probability, addition and multiplication rule of probability. Conditional probability, Baye's theorem. Independent events. Bernoulli's trial, Binomial and Multinomial Law.	14+2
	CC02: Algebra Unit 2: Equivalence Relation and Partition	3+1				
Aug	CC01: Calculus Unit-2:Parametric Equation and Parametrization	4+1	CC06: Group Theory-1 Unit-2: Sub-groups and examples, Product of two sub-group	5+1	Paper -VII: Probability and Statistics Random Variables. Distribution function. Discrete and continuous distributions. Binomial, Poisson, Uniform, Normal, Cauchy, Gamma, distribution and Beta distribution of the first and second kind. Transformation of random variables. Discrete and continuous distributions in two dimensions.	12+2
	CC02: Algebra Unit 2: Functions, Cardinality of a set	4+1	Unit-3: Cyclic groups and properties, Permutations and Permutation groups	7+1		
Sept	CC01: Calculus Unit-2:Arc length of curve	4+1	CC06: Group Theory-1 Unit-3: Symmetric and Alternating groups, Cosets, Lagrange's theorem and consequences including Fermat's Little	12+2	Paper -VII: Probability and Statistics Mathematical expectation. Theorems on the expectation of sum	
	CC02: Algebra Unit 2: Well ordering property	4+1				

	of positive integers, division algorithm		theorem		and product of random variables. Two dimensional expectation, covariance, Correlation coefficient. Moment generating function. Characteristic function.	12+2
Oct	CC01: Calculus Unit-2: Area of surface of revolution	3+1	CC06: Group Theory-1 Unit-4: External direct product of a finite number of groups, normal subgroups.	7+1	Paper -VII: Probability and Statistics Conditional expectations, Regression curve, χ^2 and t distributions and their interrelations	10+1
	CC02: Algebra Unit 2: Congruence relation	2				
Nov	CC01: Calculus Unit-2: Techniques of sketching conics	3+1	CC06: Group Theory-1 Unit-4: Factor groups, Cauchy's theorem for finite abelian groups	3+1	Paper -VII: Probability and Statistics Convergence in probability Chebyshev's inequality. Bernoulli's limit theorem, Convergence in probability. Concept of asymptotically normal distribution, central limit theorem in case of equal components.	12+2
	CC02: Algebra Unit 2: Principle of mathematical induction, Fundamental theorem of arithmetic	3+1	Unit-5: Group homomorphisms, properties of homomorphisms	10+1		
Dec	CC01: Calculus Unit-2: Group discussions and evaluation	4	CC06: Group Theory-1 Unit-5: Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.	7	Paper -VII: Probability and Statistics Convergence in probability Chebyshev's inequality. Bernoulli's limit theorem, Convergence in probability. Concept of asymptotically normal distribution, central limit theorem in	12+2
	CC02: Algebra Unit 2: Group discussions and evaluation	4	Group discussions and evaluation	5		

					case of equal components.	
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Month	Sem-II(H)	No. of Lecture	Sem-IV(H)	No. of Lecture	Part-III (H)	No. of Lecture
Jan	CC03: Real Analysis Unit-3: Introduction to Sequences, Infinite series, convergence and divergence of infinite series	6+1	CC10: Ring Theory and Linear Algebra I Unit-1: Rings, properties of rings, Sub-rings, Integral domains	10+2	Paper -VII: Probability and Statistics Description of statistical data, simple measures of central tendency- mean, mode, median, measures of dispersion – standard deviation, quartile deviation. Moments and measures of Skewness and Kurtosis	10+2
Feb	CC03: Real Analysis Unit-3: Cauchy Criterion, Tests for convergence: Comparison test, Ratio Test	8+1	CC10: Ring Theory and Linear Algebra I Unit-1: Fields, characteristic of a ring, Ideal, factor rings, operations on ideals, prime and maximal ideals	12+2	Paper -VII: Probability and Statistics Bivariate frequency distribution. Scatter diagram, Correlation co-efficients, regression lines and their properties.	10+2
Mar	CC03: Real Analysis Unit-3: Cauchy's nth root test, Integral test	8+1	CC10: Ring Theory and Linear Algebra I Unit-2: Ring homomorphisms, properties of ring homomorphisms. Isomorphism theorems I, II and III, field of quotients	12+2	Paper -VII: Probability and Statistics Concept of statistical population and random sample. Sampling distribution of sample mean and related χ^2 , t and F distribution.	10+2
Apr	CC03: Real Analysis Unit-3: Alternating series, Leibniz test	8+1	CC10: Ring Theory and Linear Algebra I Unit-4: Linear transformations, null space, range, rank and nullity of a linear transformation, matrix representation	12+2	Paper -VII: Probability and Statistics Estimation – Unbiasedness and minimum variance, consistency and efficiency, method	12+2

			of a linear transformation, algebra of linear transformations		of maximum likelihood, interval estimation for mean or variance of normal populations.	
May	CC03: Real Analysis Unit-3: Absolute and Conditional convergence	8+1	CC10: Ring Theory and Linear Algebra I Unit-4: Isomorphisms, Isomorphism theorems, invertibility and isomorphisms	10+2	Paper -VII: Probability and Statistics	0+6
June	CC03: Real Analysis Unit-3: Group discussions and evaluation	4	CC10: Ring Theory and Linear Algebra I Unit-4: Change of coordinate matrix Group discussions and evaluation	4 4		

Head of the Department,
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Suri Vidyasagar College

TEACHING PLAN OF DR. RAMPROSAD SAHA
Mathematics (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory: CC1: Geometry Unit 3: Reflection properties of conics, translation and rotation of axes and second degree equations	3+2	Theory CC7: Numerical Methods Unit 4: Interpolation: Lagrange and Newton's methods, Error bounds, Finite difference operators. Gregory forward and backward difference interpolations. Practical CC7: Numerical Methods Lab Unit 7: 1. Solution of transcendental and algebraic equations by (a) Newton Raphson method. Theory SEC1: Logic Unit 1: Introduction, propositions, truth table, negation	5+2 3+3 3	Theory: Paper-VI: Principles of Mechanics Inertial frames, Newton's laws of motion, Galilean transformation. Form-invariance of Newton's laws of motion under Galilean transformation. Fundamental forces in classical physics (gravitation). Electric and Magnetic forces, action-at-a-distance. Body forces; contact forces: Friction, Viscosity.	12+2
Aug	Theory: CC1: Geometry Unit 3: Classification of conics using the discriminant, : polar equations of conics	3+1	Theory CC7: Numerical Methods Unit 4: Numerical differentiation: Methods based on interpolations, methods based on finite differences. Practical	4+1	Theory: Paper-VI: Principles of Mechanics Problems. Fundamental concepts, centre of mass, momentum, angular momentum, kinetic	10+2

			<p>CC7: Numerical Methods Lab Unit 7: 1. Solution of transcendental and algebraic equations by (b) Regula Falsi method.</p> <p>Theory SEC1: Logic Unit 1: Conjunction and disjunction. Implications, biconditional propositions</p>	<p>3+1</p> <p>4</p>	<p>energy, work done by a field of force, conservative system of forces – potential and potential energy, internal potential energy, total energy.</p>	
Sept	<p>Theory: CC1: Geometry Unit 3 Spheres, Cylindrical surfaces</p>	3+3	<p>Theory CC7: Numerical Methods Unit 5: Numerical Integration: Newton Cotes formula, Trapezoidal rule, Simpson's 1/3rd rule, Simpsons 3/8th rule, Weddle's rule, Boole's rule. Midpoint rule, Composite Trapezoidal rule,</p> <p>Practical CC7: Numerical Methods Lab Unit 7: 2. Solution of system of linear equations (a) Gaussian elimination method</p> <p>Theory SEC1: Logic Unit 1: Converse, contra positive and inverse propositions and precedence of logical operators</p>	<p>4+3</p> <p>3+3</p> <p>3</p>	<p>Theory: Paper-VI: Principles of Mechanics Conservation laws : conservation of linear momentum, angular momentum and total energy for conservative system of forces. An idea of constraints that may limit the motion of the system, definition of rigid bodies. D'Alembert's principle, principle of virtual work for equilibrium of a connected system.</p>	12+2
Oct	<p>Theory: CC1: Geometry Unit 3: Central conicoids, paraboloids</p>	3+1	<p>Theory CC7: Numerical Methods Unit 5: Composite Simpson's 1/3rd rule, Gauss quadrature formula.</p> <p>Practical CC7: Numerical Methods Lab Unit 7: 2. Solution of system of linear equations (b) Gauss-Seidel method</p> <p>Theory SEC1: Logic Unit 1 Propositional equivalence: Logical equivalences</p>	<p>3+2</p> <p>2+2</p> <p>2</p>	<p>Theory: Paper-VI: Principles of Mechanics Rigid Body : Moments and products of inertia (in three-dimensional rectangular co-ordinates). Inertia matrix. Principal values and principal axes of inertia matrix. Principal moments and principal axes of inertia for (i) a rod, (ii) a rectangular plate, (iii) a circular plate, (iv) an elliptic plate,</p>	7+1
Nov	<p>Theory: CC1: Geometry Unit 3: Plane sections of conicoids, Generating lines, classification of quadrics</p>	5	<p>Theory CC7: Numerical Methods Unit 5: The algebraic eigenvalue problem: Power method. Unit 6: Ordinary Differential Equations: The method of successive approximations</p> <p>Practical CC7: Numerical Methods Lab Unit 7: 3. Interpolation : Lagrange Interpolation 4. Numerical Integration (a) Trapezoidal Rule</p> <p>Theory SEC1: Logic Unit 1: Predicates and quantifiers: Introduction</p>	<p>3+1</p> <p>5+3</p> <p>4</p>	<p>Theory: Paper-VI: Principles of Mechanics (v) a sphere, (vi) a right circular cone, (vii) a rectangular parallelepiped and (viii) a circular cylinder.</p> <p>Two-dimensional motion of a rigid body. Following examples of the two-dimensional motion of a rigid body to be studied : (i) Motion of a uniform heavy sphere (solid and hollow) along a perfectly rough inclined plane; (ii) Motion of a uniform heavy circular cylinder (solid and hollow) along a perfectly rough inclined plane; (iii) Motion of a rod when released from a vertical position with one end resting upon a perfectly rough table or smooth</p>	15+2

					table. Theory: Paper – VIII: Computer Programming Anatomy of a computer: Basic structure, Input unit, Output unit, Memory unit, Control unit, Arithmetic logical unit. Computer generation and classification; Machine language, Assembly language, computer-high level languages. Compiler, Interpreter, Operating system..	4
Dec	Theory: CC1: Geometry Unit 3: Illustrations of graphing standard quadric surfaces like cone, ellipsoid	5	Theory CC7: Numerical Methods Unit 6: Euler’s method, the modified Euler method, Runge-Kutta methods of orders two and four. Practical CC7: Numerical Methods Lab Unit 7: 4. Numerical Integration (b) Simpson’s one third rule 5. Solution of ordinary differential equations : Runge Kutta method Theory SEC1: Logic Unit 1: Quantifiers, Binding variables and Negations	2+2 4 2+1	Theory: Paper-VI: Principles of Mechanics (iv) Motion of a uniform heavy solid sphere along an imperfectly rough inclined plane ; (v) Motion of a uniform circular disc, projected with its plane vertical along an imperfectly rough horizontal plane with a velocity of translation and angular velocity about the centre. Analytical Statics : Forces, concurrent forces, Parallel forces. Moment of a force, Couple. Resultant of a force and a couple (Fundamental concept only). Theory: Paper – VIII: Computer Programming Source programs and objects programs. Binary number system, Conversions and arithmetic operation. Representation for Integers and Real numbers, Fixed and floating point. Programming in FORTRAN-77 Language : Fortran Characters. Basic data types; Numeric Constant & Variables; Arithmetic Expressions, Assignment statements, I/O – statements(Formatfree) ; STOP & END statement;	10+2 8
Jan	Sem-II (H)		Sem-IV (H)		Part-III (H)	

	<p>Theory CC4: Differential Equation Unit 1: Lipschitz condition and Picard's Theorem (Statement only). General solution of homogeneous equation of second order.</p>	4	<p>Theory CC9: Multivariate Calculus Unit 3: Vector operators, Gradient of a scalar function, directional derivatives.</p> <p>Theory SEC2: Graph Theory Unit 1: Definition, examples and basic properties of graphs.</p>	3 4	<p>Theory: Paper-VI: Principles of Mechanics Reduction of forces in three-dimensions, Pointot's central axis, conditions of equilibrium. Virtual work, Principle of Virtual work. Simple examples of finding tension or thrust in a two-dimensional structure in equilibrium by the principle of virtual work</p> <p>Theory: Paper – VIII: Computer Programming Control statement: Unconditional GOTO, Computed GOTO, Assigned GOTO, Logical IF and Arithmetic IF. Repetitive operations : DO statement; CONTINUE statement, Arithmetic statement functions; Library functions in FORTRAN.</p>	8+2 8
Feb	<p>Theory CC4: Differential Equation Unit 1: Principle of super position for homogeneous equation, Wronskian: its properties and applications.</p>	6	<p>Theory CC9: Multivariate Calculus Unit 3: Definition of vector field, divergence and curl, Line integrals.</p> <p>Theory SEC2: Graph Theory Unit 1: Pseudo graphs, complete graphs, Bi-partite graphs isomorphism of graphs.</p>	5 6	<p>Theory: Paper-VI: Principles of Mechanics Stable and unstable equilibrium- Energy test of stability, stability of a heavy body resting on a fixed body with smooth surfaces- simple examples.</p> <p>Practical: Paper – IX: (Computer Aided Numerical Methods –Practical) Prerequisites : PC – operating system and DOS commands, Concepts of Algorithms, Flowchart and Subscripted variables</p>	6+1 8
Mar	<p>Theory CC4: Differential Equation Unit 1: Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation.</p>	6	<p>Theory CC9: Multivariate Calculus Unit 3: Fundamental theorem for line integrals, conservative vector fields, Application of line integral to Workdone.</p> <p>Theory SEC2: Graph Theory Unit 2: Eulerian circuits, Eulerian graph, semi-Eulerian graph and theorems.</p>	2+2 7	<p>Theory: Paper-VI: Principles of Mechanics General equations of equilibrium of a uniform heavy inextensible string under the action of given coplanar forces, common catenary, catenary of uniform strength.</p> <p>Practical: Paper – IX: (Computer Aided Numerical Methods –Practical) Finding a real Root of an equation by (a) Fixed point iteration and (b) Newton-Rapson's method. Finding the solution of linear equations by Gauss-Seidel method</p>	8+2 6
Apr	<p>Theory CC4: Differential Equation Unit 1: Method of</p>	4	<p>Theory CC9: Multivariate Calculus Unit 4: Green's theorem, surface integrals.</p>	4	<p>Theory: Paper-VI: Principles of Mechanics</p>	0+4

	undetermined coefficients, method of variation of parameters.		Theory SEC2: Graph Theory Unit 2: Hamiltonian cycles and theorems, Representation of a graph by a matrix, the adjacency matrix, incidence matrix, weighted graph.	8	Practical: Paper – IX: (Computer Aided Numerical Methods –Practical) Interpolation (Taking at least six points) by Lagrange’s formula 4. Integration by (i) Trapezoidal rule (ii) Simpson’s 1/3rd rule (taking at least 10 sub-intervals)	9
May	Theory CC4: Vector Calculus Unit 3: Triple product, introduction to vector functions. Operations with vector-valued functions, Limits and continuity of vector functions.	6	Theory CC9: Multivariate Calculus Unit 4: Integrals over parametrically defined surfaces. Stoke’s theorem. Theory SEC2: Graph Theory Unit 3: Travelling salesman’s problem, shortest path, Tree and their properties, spanning tree.	4 8	Practical: Paper – IX: (Computer Aided Numerical Methods –Practical) Solution of a 1st order ordinary differential equation by fourth-order R. K. Method, taking at least four steps.	3
June	Theory CC4: Vector Calculus Unit 3: Differentiation and integration of vector functions.	4	Theory CC9: Multivariate Calculus Unit 4: The Divergence theorem. Theory SEC2: Graph Theory Unit 3: Dijkstra’s algorithm, Warshall algorithm.	2+2 7		

Head of the Department,
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TEACHING PLAN OF DR. PRASENJIT SAHA
Mathematics (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	CC01: Differential Equations Unit 4: Differential equations and mathematical models. General, particular solution CC02: Algebra Unit 3: Systems of linear equations	3+1 3+1	CC07: Numerical Methods Unit 1: Algorithms, Convergence, Errors: Relative, Absolute. Round off, Truncation CC07: Numerical Methods Lab (Practical)	2+1 4	PAPER-VIII: Numerical Analysis Approximation of numbers, decimal places, significant figures. Round off. errors in numerical calculations. addition, subtraction, multiplication and division. Loss of significant figures, Inherent errors in numerical methods.	12+2
Aug	CC01: Differential		CC07: Numerical Methods		PAPER-VIII: Numerical	

	<p>Equations Unit 4: Explicit, implicit and singular solutions of a differential equation.</p> <p>CC02: Algebra Unit 3: Row reduction and echelon forms</p>	<p>3+1</p> <p>2+1</p>	<p>Unit 2: Transcendental and Polynomial equations: Bisection method, Newton's method, Secant method</p> <p>CC07: Numerical Methods Lab (Practical)</p>	<p>3+2</p> <p>4</p>	<p>Analysis Ordinary and divided differences, Propagation of error in difference table. Problems of interpolation, remainder in interpolation. Newton's forward and backward interpolation formulae. Newton's divided difference formula. Central interpolation formulae: Gauss, Stirling and Bessel's formulae (Deduction not necessary). Lagrange's interpolation formula. Inverse interpolation formula.</p>	<p>12+2</p>
Sept	<p>CC01: Differential Equations Unit 4: Exact differential equations and integrating factors</p> <p>CC02: Algebra Unit 3: Vector equations</p>	<p>4+1</p> <p>3</p>	<p>CC07: Numerical Methods Unit 2: Regula falsi method, fixed point iteration, Newton-Raphson method. Rate of convergence of these methods</p> <p>CC07: Numerical Methods Lab (Practical)</p>	<p>3+2</p> <p>4</p>	<p>PAPER-VIII: Numerical Analysis Numerical integration : Newton-Cotes' formula (error term may be stated). Trapezoidal rule, Simpson's one-third rule, Inherent errors, degree of precision.</p> <p>Numerical methods for finding the real roots of algebraic and transcendental equations :Location of roots by Tabulation and Graphical method. Finding the roots by the method of (i) RegulaFalsi (ii) Fixed point</p>	<p>14+2</p>

					iteration and (iii) Newton Raphson & their convergences.	
Oct	<p>CC01: Differential Equations Unit 4: Separable equations and equations reducible to this form</p> <p>CC02: Algebra Unit 3: The matrix equation $Ax=b$, solution sets of linear systems</p>	<p>3</p> <p>2+1</p>	<p>CC07: Numerical Methods Unit 3: System of linear algebraic equations: Gaussian Elimination and Gauss Jordan methods. Gauss Jacobi method</p> <p>CC07: Numerical Methods Lab (Practical)</p>	<p>4+2</p> <p>4</p>	<p>PAPER-VIII: Numerical Analysis Solution of a system of linear equation : Gauss' elimination method and Gauss-Seidel method; statement of convergence criteria.</p>	6+1
Nov	<p>CC01: Differential Equations Unit 4: Linear equation and Bernoulli equations</p> <p>CC02: Algebra Unit 3: Applications of linear systems</p>	<p>4+1</p> <p>2+1</p>	<p>CC07: Numerical Methods Unit 3: Gauss Seidel method and their convergence analysis, LU Decomposition</p> <p>CC07: Numerical Methods Lab (Practical)</p>	<p>4+2</p> <p>4</p>	<p>PAPER-VIII: Numerical Analysis Solution of first order ordinary differential equations: Picard's method, Euler's method (modified), Taylor's method and Runge-Kutta's method of second and fourth order (derivation of 2nd order formula only).</p>	<p>10+2</p> <p>4</p>
Dec	<p>CC01: Differential Equations Unit 4: Special integrating factors</p> <p>CC02: Algebra Unit 3: linear independence</p> <p>Group discussions and evaluation</p>	<p>3</p> <p>3</p> <p>2</p>	<p>CC07: Numerical Methods Unit 4: Ordinary Differential Equations: The method of successive approximations, Euler's method, the modified Euler method, Runge-Kutta methods of orders two and four</p> <p>CC07: Numerical Methods Lab (Practical)</p>	<p>5+2</p> <p>4</p>	<p>PAPER-VII: Elements of Operations Research General introduction to optimization problem, Definition of L.P.P., Mathematical formulation of the problem, Canonical & Standard form of L.P.P., Basic</p>	10+2

			Group discussions and evaluation	2	solutions, feasible, basic feasible & optimal solutions, Reduction of a feasible solution to basic feasible solution.	
	Sem-II (H)		Sem-IV (H)		Part-III (H)	
Jan	CC04: Differential Equation Unit 2: Systems of linear differential equations, types of linear systems	7+1	CC09: Multivariate Calculus Unit 1: Functions of several variables, limit and continuity, Partial differentiation, total differentiability and differentiability, sufficient condition for differentiability	12+2	PAPER-VII: Elements of Operations Research Hyperplanes and Hyperspheres, Convex sets and their properties, Convex functions, Extreme points, Convex feasible region, Convex polyhedron, Polytope. Graphical solution of L.P.P. Fundamental theorems of L.P.P., Replacement of a basis vector, Improved basic feasible solutions, Unbounded solution, Condition of optimality,	10+2
Feb	CC04: Differential Equation Unit 2: Differential operators, an operator method for linear systems with constant coefficients,	6+2	CC09 Multivariate Calculus Unit 1: Chain rule for one and two independent parameters, directional derivatives	14+2	PAPER-VII: Elements of Operations Research Simplex method, Simplex algorithm, Artificial variable technique (Big M method, Two phase method), Inversion of a matrix by Simplex method Duality in L.P.P. : Concept of duality, Fundamental properties of duality, Fundamental theorem of duality,	14+2

					Duality & Simplex method, Dual simplex method and algorithm.	
Mar	CC04: Differential Equation Unit 2: Basic Theory of linear systems in normal form	6+2	CC09 Multivariate Calculus Unit 1: The gradient, Jacobian, maximal and normal property of gradient, tangent planes	14+2	PAPER-VII: Elements of Operations Research Transportation Problem (T.P.) : Matrix form of T.P., the transportation table, Initial basic feasible solutions (different methods like North West corner, Row minima, Column minima, Matrix minima & Vogel's Approximation method)	8+2
Apr	CC04: Differential Equation Unit 2: Homogeneous linear systems with constant coefficients: Two Equations in two unknown functions	6+2	CC09 Multivariate Calculus Unit 1: Extrema of functions of n variables with necessary and sufficient conditions, method of Lagrange multipliers	14+2	PAPER-VII: Elements of Operations Research Loops in T.P. table and their properties, Optimal solutions, Degeneracy in T.P., Unbalanced T.P. Theory of Games : Introduction, Two person zero-sum games, Minimax and Maximin principles, Minimax and Saddle point theorems, Mixed Strategies games without saddle points, Minimax (Maximin) criterion,	10+2
May	CC04: Differential Equation	6+2	CC09 Multivariate Calculus Unit 2: Double	12+2	PAPER-VII: Elements of Operations	5+3

	Unit 3: Equilibrium points, Interpretation of the phase plane, Power series solution of a differential equation about an ordinary point,		integration over rectangular region, double integration over non-rectangular region, Double integrals in polar co-ordinates		Research The rules of Dominance. Solution methods of games without Saddle point : Algebraic method, Matrix method, Graphical method and Linear Programming method.
June	CC04: Differential Equation Unit 3: Solution about a regular singular point	4	CC09 Multivariate Calculus Unit 2: Triple integrals, Triple integral over a parallelepiped and solid regions. Volume by triple integrals, cylindrical and spherical coordinates. Change of variables in double integrals and triple integrals Group discussions and evaluation	10+2	
	Group discussions and evaluation	4		2	

Head of the Department,
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TEACHING PLAN OF SUJOY DAS
Mathematics (Honours) (2018-19) (July 2018 – June 2019)

Month	SEM-I (H)	No. of Lectures	SEM-III (H)	No. of Lectures	Part-III (H)	No. of Lectures
July	Paper-CC-01, Unit -1: Hyperbolic functions, higher order derivatives, Leibnitz rule and its applications to problems of type $e^{ax+b} \sin x$, $e^{ax+b} \cos x$, $(ax + b)^n \sin x$, $(ax + b)^n \cos x$	5+6	Paper-CC-05, Unit -1: Limits of functions ($\epsilon - \delta$ approach), sequential criterion for limits, divergence criteria. Limit theorems, one sided limits.	6+6	Paper-V, Real Analysis: Definition of Riemann integration, Uniqueness, Cuchy's criterion, Linear property, Darboux theory of Riemann integration, equivalence, Darboux theorem (proof not required), Riemann integral as the limit of a sum, equivalence. Fundamental theorem of integral calculus, Properties of the Riemann integral; Riemann integrability of continuous and monotone functions, discontinuous function. First and	12+2

					second Mean value theorems of Integral Calculus. Functions defined by integrals, their continuity and differentiability.	
August	Paper-CC-01, Unit -1: Concavity and inflection points envelopes, asymptotes, curve tracing in Cartesian coordinates, tracing in polar coordinates of standard curves,	4+4	Paper-CC-05, Unit -1: Infinite limits and limits at infinity. Continuous functions, sequential criterion for continuity and discontinuity.	7+6	Paper-V, Real Analysis: Convergence of sequence and series of functions, uniform convergence, Cauchy's Criterion of uniform convergence, continuity of sum function of a uniformly convergent series of continuous functions, term by term differentiation and integration for proper integrals.	10+2
Sept	Paper-CC-01, Unit -1: L'Hospital's rule, applications in business, economics and life sciences.	3+6	Paper-CC-05, Unit -1: Algebra of continuous functions. Continuous functions on an interval, intermediate value theorem,	6+4	Paper-V, Real Analysis: Functions of several variables, theory of extrema, maxima, minima, Lagrange's method of multipliers, Jacobian, Implicit function theorem (proof not required). Integral as a function of parameter. Differentiation and integration under the sign of integration, change of order of integration for repeated integrals.	12+2
Oct	Paper-CC-02, Unit -4: Introduction to linear transformations, matrix of a linear transformation, inverse of a matrix, characterizations of invertible matrices.	6+6	Paper-CC-05, Unit -1: Location of roots theorem, preservation of intervals theorem. Uniform continuity, non-uniform continuity criteria, theorems on uniform continuity.	6+4	Paper-V, Real Analysis: Improper integrals, their convergence (for unbounded functions and unbounded range of integration) Abel's and Dirichlet's test, Beta and Gamma function,	6+1
Nov	Paper-CC-02, Unit -4: Vector Spaces of R^n , Subspaces of R^n , dimension of subspaces of R^n , rank of a matrix, Eigen values, Eigen Vectors and Characteristic Equation of a matrix.	8+6	Paper-CC-05, Unit -4: Metric spaces: Definition and examples. Open and closed balls, neighbourhood, Open set, interior of a set. Limit point of a set, closed set, diameter of a set, subspaces,	6+8	Paper-V, Real Analysis: Evaluation of improper integrals and integrals dependent on them., Fourier series associated with a function, Series of odd and even functions, Main theorem concerning Fourier series expansion of piece wise monotone functions (proof not required).	12+2
Dec	Paper-CC-02, Unit -4: Cayley-Hamilton theorem and its use in finding the inverse of a matrix.	4+2	Paper-CC-05, Unit -4: Dense sets, separable spaces.	4+2	Paper-V, Metric space: Metric, examples of standard metric spaces including Euclidean and Discrete metrics; open ball, closed ball, open sets; metric topology; closed sets, limit points. and their fundamental properties; interior, closure and boundary of subsets and their interrelation; denseness; separable and second countable metric spaces and their relationship.	12+2
	SEM-II (H)		SEM-IV(H)		Part-III (H)	
Jan	Paper-CC-03, Unit -1: Review of Algebraic and Order Properties of R , ϵ -neighbourhood of a point in R . Idea of countable sets, uncountable sets and uncountability of R .	4+4	Paper-CC-08, Unit -3: Pointwise and uniform convergence of sequence of functions. Theorems on Continuity, derivability and integrability of the limit function of a sequence of functions.	8+4	Paper-V, Metric space: Continuity : Definition of continuous functions, algebra of real/complex valued continuous functions, distance between a point and a subset, distance between two subsets. Connectedness: Connected subsets of the real line R , open connected subsets in R^2 , components; components of open sets in R and R^2 ; Structure of open set in R , continuity and connectedness; intermediate value theorem.	5+5
Feb	Paper-CC-03, Unit -1: Bounded above sets, Bounded below sets, Bounded Sets, Unbounded sets. Suprema and Infima. Completeness Property of R and its equivalent properties.	4+4	Paper-CC-08, Unit -3: Series of functions, Theorems on the continuity and derivability of the sum function of a series of functions; Cauchy criterion for uniform convergence and Weierstrass M-Test.	8+4	Paper-V, Metric space: Sequence and completeness: Sequence, subsequence and their convergence; Cauchy sequence and completeness, completeness of R^n ; Cantor's theorem concerning completeness. Definition of completion of a metric space,	12+2

					construction of the reals as the completion of the incomplete metric space of the rationals with usual distance (proof not required). Continuity preserves convergence.	
Mar	Paper-CC-03, Unit -1: The Archimedean Property, Density of Rational (and Irrational) numbers in \mathbb{R} , Intervals.	4+4	Paper-CC-08, Unit -3: Fourier series: Definition of Fourier coefficients and series, Riemann-Lebesgue lemma, Bessel's inequality, Parseval's identity, Dirichlet's condition. Examples of Fourier expansions and summation results for series.	9+4	Paper-V, Metric space: Compactness: Definitions (by means of open covering), Compact metric spaces and finite intersection property (FIP) of closed sets; Compact subsets, continuity and compactness; sequential compactness, Equivalence between compactness and sequential compactness, relation between compactness, completeness and total boundedness	12+2
Apr	Paper-CC-03, Unit -1: Limit points of a set, Isolated points,	3+6	Paper-CC-08, Unit -3: Power series, radius of convergence, Cauchy Hadamard Theorem. Differentiation and integration of power series; Abel's Theorem; Weierstrass Approximation Theorem.	8+4	Paper-V, Metric space: Heine-Borel theorem concerning characterization of compact subsets of \mathbb{R}^n .	8+2
May	Paper-CC-03, Unit -1: Open set, closed set, derived set, Illustrations of Bolzano-Weierstrass theorem for sets,	3+6	Paper-CC-10, Unit -3: Vector spaces, subspaces, algebra of subspaces, quotient spaces, linear combination of vectors, linear span, linear independence, Basis and dimension, dimension of subspaces, extension,	9+6	Paper-V, Metric space: Uniform continuity and continuity on compact sets; distance between two non empty disjoint closed set one of which is compact is a positive real.	4+3
Jun	Paper-CC-03, Unit -1: compact sets in \mathbb{R} , Heine-Borel Theorem	2+2	Paper-CC-08, Unit -3: Deletion and replacement theorems.	3+2		

Head of the Department,
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TEACHING PLAN OF SOUMI DAS
Mathematics (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory: CC02:Algebra Unit 1:Polar representation of complex numbers,nth roots of unity ,De Moivre's theorem for rational indices and its applications	6+1	Theory CC05:Theory of Real Functions Unit 2: Differentiability of a function at a point and in an interval,Caratheodorytheorem,algebra of differentiable functions Theory SEC1: Set Unit2:Sets,Subsets,set operations and the laws of set theory and Venn diagrams	8+2 3	Theory: Paper-VI: Elements of Continuum Mechanics with Hydrostatics Elements of Continuum Mechanics: Deformable body. Idea of a continuum (continuous medium). Surface forces or contact forces. Stress at point in a continuous medium, stress vector, components of stress (normal stress and shear stress) in rectangular Cartesian co-ordinate system; stress matrix. Definition of ideal fluid and viscous fluid.	12+2

Aug	<p>Theory: CC02 Unit 1:Theory of equations,Relation between roots and coefficients</p>	3+2	<p>Theory CC05:Theory of real function Unit02:Relative extrema,interiorextremum,Rollest heorem,Mean value theorem</p> <p>Theory SEC1: Set Unit 2:Examples of finite and infinite sets,Finite sets and counting principle</p>	7+1 3	<p>Theory: Paper-VI: Elements of Continuum Mechanics with Hydrostatics Hydrostatics : Pressure (pressure at a point in a fluid in equilibrium is same in every direction). Incompressible and compressible fluid, Homogeneous and non-homogeneous fluids.</p>	8+2
Sept	<p>Theory: CC2:Algebra Transformation of equation,Descartes rule of signs,Cubic equations</p>	5+2	<p>Theory CC05:Theory of real function Unit2:Intermediate value property of derivatives,Darbouxtheorem,Applications of mean value theorem to inequalities and approximation of polynomials</p> <p>Theory SEC1:Set Unit 2:Empty set and property of empty set,Standard set operations,Classes of sets,power of a set</p>	8+3 3	<p>Theory: Paper-VI: Elements of Continuum Mechanics with Hydrostatics Equilibrium of fluids in a given field of force; pressure gradient. Equipressure surfaces, equilibrium of a mass of liquid rotating uniformly like a rigid body about an axis. Simple applications.</p>	8+2
Oct	<p>Theory: CC02:Algebra Biquadratic equation,Reciprocal equation</p>	3	<p>Theory CC05:Theory of real functions Unit2:Application of differential calculus,Curvature</p> <p>Theory SEC 1:Set Unit 3:Difference and symmetric difference of two sets,Set identities</p>	3 2	<p>Theory: Paper-VI: Elements of Continuum Mechanics with Hydrostatics Pressure in a heavy homogeneous liquid. Trust on plane surfaces: center of pressure, effect of increasing the depth without rotation.</p>	4+1
Nov	<p>Theory: CC02:Algebra Unit 1:Separation of the roots of the equations,Strums theorem</p>	4+2	<p>Theory CC05:Theory of Real functions Unit 3:Cauchy's mean value theorem,Taylor's theorem with Lagrange's form of remainder,Taylor's theorem with Cauchy's form of remainder,Application of Taylor's theorem to convex functions,relativeextrema</p> <p>Theory SEC1: Set Unit 3:Generalized union and intersections,Relation,Productset, Compositionof relations,Type of</p>	10+2	<p>Theory: Paper-VI: Elements of Continuum Mechanics with Hydrostatics Centre of pressure of a triangular & rectangular area and of a circular area immersed in any manner in a heavy homogeneous liquid. Simple problems.</p> <p>Thrust on curved surfaces :Archemedes' principle. Equilibrium of freely floating bodies under constraints. (Consideration of stability not required).</p>	6+2

			relations	2+1		
Dec	Theory CC02: Unit 1: The inequality involving $AM > GM > HM$ Cauchy-Schwartz inequality	4	Theory CC05: Theory of real functions Unit 3: Taylor's series and Maclaurin's series expansions of exponential and trigonometric functions, Application of Taylor's theorem to inequalities Theory SEC1: Set Unit 3: Partitions, Equivalence Relations with examples of congruence modulo relation, Partial ordering relations, n-ary relation	8+1 3	Theory: Paper-VI: Elements of Continuum Mechanics with Hydrostatics Equation of state of a 'perfect gas', Isothermal and adiabatic processes in an isothermal atmosphere. Pressure and temperature in atmosphere in convective equilibrium.	6+2
	Sem-II (H)		Sem-IV (H)		Part-III (H)	
Jan	Theory CC3: Real Analysis Unit 2: Sequences, Bounded sequence, convergent sequence	3+1	Theory CC08: Riemann Integration and series of functions Unit 1: Riemann integration, inequalities of upper and lower sums, Darboux integration, Darboux theorem	8	Theory: Paper-V: Complex Analysis Introduction of complex number as ordered pair of reals, geometric interpretation, metric structure of the complex plane C , regions in C . Stereographic projection and extended complex plane $C \cup \infty$ and circles in $C \cup \infty$ Continuity and differentiability of a complex function.	8+2
Feb	Theory CC3: Real Analysis Unit 2: Limit of a sequence, \liminf , \limsup , Limit theorems	4	Theory CC08: Riemann integration and series of functions Unit 1: Riemann conditions of integrability, Riemann sum and definition of Riemann integral through Riemann sums, equivalence of two definitions	8+3	Theory: Paper-V: Complex Analysis Analytic functions and Cauchy Riemann equation, harmonic functions, Power series, radius of convergence.	6+2
Mar	Theory CC3: Real Analysis Unit 2: Monotone sequences, Monotone convergence theorem	4+2	Theory CC08: Riemann integration and series of functions Unit 1: Riemann integrability of monotone and continuous functions, Properties of Riemann integral, definition and integrability of piecewise continuous and monotone functions	6+4	Theory: Paper-V: Complex Analysis Sum function and its analytic behaviour within the circle of convergence, Cauchy-Hadamard Theorem.	6+2
Apr	Theory CC3: Real Analysis Unit 2: Subsequences, Divergence criteria, Monotone Subsequence theorem	4+2	Theory CC08: Riemann integration and series of functions Unit 1: Intermediate Value theorem for integrals, Fundamental theorem of integral calculus	8+4	Theory: Paper-V: Complex Analysis Introduction of $\exp(z)$, $\sin z$, $\cos z$, $\tan z$ and the branches of $\log z$ and their analytic behaviour. Transformation (mapping), Concept of Conformal mapping, Bilinear (Möbius) transformation	6+2

					and its geometrical meaning.	
May	Theory CC3:Real Analysis Unit 2: Bolzano Weierstrass theorem for sequences, Cauchy sequence	4	Theory CC908: Riemann integration and series of functions Unit 2: Improper integrals	6+3	Theory: Paper-V: Complex Analysis Fixed points and circle preserving character of Mobius transformation.	3+3
June	Theory CC3:Real Analysis Unit 2: Cauchy's Convergence Criterion	4+1	Theory CC08: Riemann integration and series of functions Unit 2: Beta and Gamma function.	4+3		

Head of the Department,
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DEPARTMENT OF PHILOSOPHY

TEACHING PLAN OF Associate professor Rita Mukherjee
Philosophy (General) (July 2018 – June 2019)

Month	Part-III	No. of Class
July-December	<p style="text-align: center;"><u>Paper IV: Philosophy of Religion and Socio-Political Philosophy</u></p> <p>Half-I Philosophy of Religion:</p> <p style="text-align: center;">1. Nature and Scope of Philosophy of Religion 2. Origin of Religion in the Light of Anthropology 3. Psychological Origin and Development of Religion</p>	25
January-June	<p style="text-align: center;"><u>Paper IV: Philosophy of Religion and Socio-Political Philosophy</u></p> <p>Half-II Socio-Political Philosophy:</p> <p style="text-align: center;">1. Nature and Scope of Social Philosophy and Political Philosophy</p>	10

	Sem-I (G)	Sem-III (G)	Sem-V (G)
	<p>1st Sem. General/GE CC-1A/CC-1B/GE-1-Indian Philosophy</p> <p>Mimansha Philosophy- 4</p> <p>Significance of the term 'Mimansha' .</p> <p>Classification of Mimansha Philosophy --</p> <p>Main two promana of Mimansha Philosophy.</p> <p>Aorthaportti and Anupolobddhi</p> <p>What is Aorthaportti? Why it is called separate promana- according to Mimansha Philosophy?</p> <p>Different types of Aorthaportti- Anupolobddhi - Vedanta philosophy-4</p> <p>Meaning of the term "Vedanta".</p> <p>What is the main theme of Vedanta philosophy?</p> <p>Nature of Brahman?</p> <p>What is 'Maya'?</p> <p>Relation between Brahman to jiv and jagat.</p>	<p>Subject -Philosophy, 3rd Sem.General GE-3/CC-1C/CC-2C-Logic</p> <p>Unit - I -Basic Concept of Logic -9</p> <p>Introduction -2</p> <p>Nature and Scope of Logic-2</p> <p>Sentence, Proposition and Statement -2</p> <p>Inference and argument -2</p> <p>Tutorial -1</p> <p>Unit -2 Types of argument -5</p> <p>What is Deductive argument?</p> <p>What is Inductive argument?</p> <p>What are the differences between Deductive & Inductive argument?-1</p> <p>Conception of the term 'Valid' & 'Invalid' .</p> <p>Relation between Truth & Validity - 2</p> <p>Tutorial - 2</p> <p>Unit -3- Opposition of Proposition -- 10</p> <p>What is Opposition of Proposition?-- 1</p> <p>Different types of Opposition of Proposition.</p> <p>What is Square of Opposition,</p> <p>Different types of square of opposition.-- 2</p> <p>Rules of truth & falsity depend on traditional square of opposition --2</p> <p>Follow some exercise and question papers ---4</p> <p>Tutorial --1</p> <p>Unit -4 -Immediate Inference -Conversion-Obversion - Contraposition -10</p> <p>What is Immediate Inference? , What is the difference between mediate and immediate ? , What is Conversion? ,How many types of conversion?</p> <p>Discuss it's rules with example.--2</p> <p>Why 'O' Proposition can't be converted?---1</p> <p>Do simple conversion is possible to 'A' Proposition?</p> <p>In which cases simple conversion possible to 'A' Proposition?</p> <p>What is obversion? Discuss its rules with example -1</p> <p>What is contraposition? Rules of contraposition-2</p> <p>Why contraposition is impossible for 'I' proposition?</p> <p>Which cases existential fallacy occur in immediate inference?--2</p> <p>Practice from exercise & B.U.question papers -1</p> <p>Unit -5 Categorical Syllogism -25</p> <p>What is Categorical Syllogism?</p> <p>Rules of Categorical Syllogism.</p> <p>Formal nature of Categorical Syllogism.</p> <p>Fallacy of Categorical Syllogism --- 10</p> <p>Figure & Mood of Categorical Syllogism.</p> <p>Follow exercise & University question papers-4</p>	<p>5th Sem.General-SEC-3-Philosophical Analysis</p> <p>Unit-1 Meaning -10</p> <p>Word Meaning and Sentence Meaning -4</p> <p>Testability and Meaning -- 4</p> <p>Discuss short type of question and follow University question papers -2</p> <p>Unit -2 Concept of Truth -10</p> <p>What is Truth?</p> <p>Criteria of Truth.-1</p> <p>Different types of the theory about the nature of truth.-1</p> <p>Correspondence theory of Truth.-2</p> <p>Coherence theory of Truth-2</p> <p>Pragmatic theory of Truth-2</p> <p>Discuss which theory is acceptable.-2</p> <p>Unit -3 Knowledge -Nature & Source of Knowledge -10</p> <p>What is knowledge?</p> <p>Different types of meaning about the verb "To Know " .-2</p> <p>Knowledge by acquaintance</p> <p>Knowledge by ability</p> <p>Knowledge by Propositional sense</p> <p>Necessary and Sufficient condition of knowledge - 4</p> <p>Theory of Empiricism -2</p> <p>Theory of Rationalism -2.</p> <p>Discuss the important role about the source of knowledge.-2.</p> <p>-----+-----+-----</p>

		<p>Venn Diagram of single term , Categorical proposition & Categorical Syllogism.-6</p> <p>Testing Validity by Venn Diagram Method - 2</p> <p>Follow exercise & University question papers -3</p> <p>Unit -6 Truth Functional Arguments -20</p> <p>Modern symbolic logic and it's application</p> <p>Symbol of Conjunction , Disjunction,Negation and uses in truth - functional proposition.</p> <p>What is Truth -table? How do make form of Truth table -- 5</p> <p>Meterial Implication , Meterial Equivalence-4</p> <p>Transfer the general argument to truth-functional argument, Testing argument with Truth -table method - 4</p> <p>What is statement form? Difference between Statement form and proposition, Determine the truth -value of statement form with the help of truth -table method -- 4</p> <p>Follow exercise and University question papers -3</p> <p>Unit -7 Science and Hypothesis -9</p> <p>What is Hypothesis?</p> <p>Explanation of scientific and Un- scientific.</p> <p>Criteria of Scientific explanation -3</p> <p>Difference between scientific and unscientific explanation according to I.M.Copy.-2</p> <p>Scientific Inquiry ,Seven stages of scientific Inquiry with example -2</p> <p>Different Condition of good hypothesis -2</p>	
	Sem-II (G)	Sem-IV (G)	Sem-VI (G)

		<p>Philosophy Department 6th Sem.General DSE- 1B -Tarka samgraha.(Text Book)</p> <p>Syllabus - Sapta Padertha</p> <p>Unit - 1 - Poder tho -10</p> <p>What is Poder tho?</p> <p>How many types of Podertho & what are they?</p> <p>What is the meaning of sapto pader tho?</p> <p>Why the term "Sapto" is important in Tarka Samgraha?</p> <p>Unit -2- Dravya -8.</p> <p>What is the lakshana of Dravya ?- 2</p> <p>How many types of Dravya? What are they? --2</p> <p>Is darkness a separate substance? -4</p> <p>Unit -3 - Guna -6</p> <p>What is Guna? How many types of Guna according to Annambhatta?</p> <p>Lakshana of Guna.</p> <p>Unit -4-Karma--6</p> <p>What is karma?</p> <p>How many types of karma?</p> <p>Lakshana of karma.</p> <p>Unit -4-Samanya -10</p> <p>What is the meaning of Samanya in general?</p> <p>Lakshana of Samanya (Universal) according to Tarka Samgraha?</p> <p>Types of Samanya?</p> <p>Why it is a separate podartha according to Tarka Samgraha?</p> <p>What is jatibadhaka?(জাতি-বাধক)? How many types of jatibadhaka? What are they?</p> <p>Unit --- 5 - Vishesh (Peticular) -10</p> <p>What is Vishesh?</p> <p>Lakshana of Vishesh according to Tarka Samgraha?</p> <p>Why it is a separate podartha according to Tarka Samgraha?</p> <p>Unit - 6 - Samavya --10</p> <p>Lakshana of Samavya.</p> <p>What is the difference between Samavya and sanjoga?</p> <p>In which cases Samavya relation are possible?</p> <p>Tutorial --2</p> <p>Unit -7 - Avabo -10</p> <p>The Lakshana of Avabo.</p> <p>Why it is a separate podartha according to Tarka Samgraha?</p> <p>How many types of Avabo? what are they?</p>
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Head of the Department,
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DEPARTMENT OF PHILOSOPHY

TEACHING PLAN OF Associate professor Rita Mukherjee
Philosophy (Honours) (July 2018 – June 2019)

Month	Part-III	No. of Class
July-June	<p style="text-align: center;"><u>Paper-V: Indian Logic</u></p> <p style="text-align: center;">Text : Annāmbhatta: Tarkasaṃgraha wihTarkasaṃgrahadīpikā [From “sarvavyavahāraheturguṇobuddhirjñānam” to “smṛtirapi dvidhā yathārthāyathārthaśceti”]</p>	100
July-June	<p style="text-align: center;"><u>Paper-VII : Philosophy of Religion and Philosophical Analysis</u></p> <p style="text-align: center;">Half-II Philosophical Analysis:</p> <p>1. Meaning and Definition: Word-meaning, Definition, Vagueness, Sentence-meaning 2. Knowledge: Concepts, Truth, The Sources of Knowledge, What is knowledge 3. Necessary Truth: Analytic Truth and Logical Possibility, The apriori, The Principles of Logic 4. Cause, Determinism and Freedom: What is cause, The Causal Principles, Determinism and Freedom 5. Our knowledge of the Physical World: Realism, Idealism, Phenomenalism</p>	50

CBCS Syllabus

Sem-I (H)	Sem-III (H)	Sem-V (H)
<p>Theory: CC-2: Outlines of Western Philosophy—I Unit1: Introduction to The Pre-Socratic Period: (a) Ionian School.</p> <p>Theory: CC-2: Unit 1: (b) Parmenides. (c) Heraclitus and</p> <p>CC-2 Outline of Western philosophy. Unit -1-Descartes -20 Introduction -2 Method of Doubt -2 Cogito Ergo sum -4 Criterion of truth -2 Classification of Ideas-4 Substance--Defination of substance, Types of Substance--4 Interactionism -2</p> <p>Unit -2- Spinoza -17 Introduction-2 The doctrine of Substance -4 Diffination of Substance, characteristics of substance Substance=God=Nature "Natura-Naturans" & "Natura-Naturata" Attributes-2 Relation between Substance & attributodes-2 Parallelism-1 Degrees of knowledge 2 Determinism and Freedom-2 Tutorial-2</p> <p>Unit -3 Leibniz -- 14 Introduction -2 Monadology - -3 Pre-established Harmony -2 Truths of Reason and Truths of Fact -2 Theory of knowledge -2 Substance theory of Descartes, Spinoza and Leibniz comparative discussion 2 Tutorial -1</p>	<p style="text-align: center;">CC-VII- Indian Logic</p> <p style="text-align: center;">Unit 1: 16</p> <ul style="list-style-type: none"> • Introduction -2 • <i>Buddhi</i> and its different types • <i>Smriti-4</i> • <i>Anuvaba</i> • <i>Prama – Aprama-4</i> <p>Difference between <i>Prama & Aprama-4</i></p> <p><i>Tutorial -2</i></p> <p>Theory SEC-1: Unit 3: Outlines of the types of Inquiry in Philosophy and darśana: (a) Epistemic Inquiry in Philosophy and darśana, (b) Metaphysical Inquiry in Philosophy and darśana, (c) Axiological Inquiry in Philosophy and darśana.</p> <p>Theory SEC-1: Unit 4: A few Model World-views and corresponding paths leading to Perfection: (a) Plato's view, (b) Kant's view.</p> <p style="text-align: center;">Unit 2: -16</p> <ul style="list-style-type: none"> • <i>Karana-2</i> • <i>Karana-4</i> • <i>Anyathasiddhi-2</i> • Different types of <i>Anyathasiddhi-2</i> • Different types of <i>Karana-3</i> • <i>Karya-1</i> • <i>Tutorial -2</i> <p style="text-align: center;">Unit 3: 14</p> <ul style="list-style-type: none"> • <i>Pratyaksa-Pramana-2</i> • Different types of <i>Pratyaksa-2</i> • Difference between <i>Nirvikalpaka & Savikalpaka Pratyaks--4</i> • Argument for the existence of <i>Nirvikalpaka Pratyaksa-2</i> • <i>Sannikarsa-1</i> • Different types of <i>Sannikarsa-2</i> • <i>Tutorial -2</i> <p style="text-align: center;">Unit 4:- 25</p> <ul style="list-style-type: none"> • <i>Anumana-Pramana--6</i> • <i>Laksna of Anumana--3</i> • Different Stages of <i>Anumana (Vyapti, Paksa-dharmata & Paramarsa)--4</i> • <i>Laksna of Paramarsa-2</i> • Utility of <i>Paramarsa in Anumana-Pramana-2</i> • <i>Laksna of Vyapti, Different types of Vyapti</i> • How <i>Vyapti</i> established--3 • • Different types of <i>Anumana</i> • Difference between <i>Swarthanumana & Parathanumana--3</i> 	<p>CC- XII -Western Logic -II.</p> <p>Unit -1 -Analogical Reasoning - 10. Introduction -01 Argument by Analogy - Defination of Analogical argument . symbolic example and example by proposition.--2 Criteria of Analogical argument -2 Term 'Valid' and 'Invalid' are applicable in Analogical argument? -1 Refutation by logical Analogy - 1 Summary of this ch.-2 Tutorial -1</p> <p>Unit -2 -Causal Reasoning-20 Defination of Cause, Condition, type of Condition -2 Sufficient Condition, Necessary Condition and Sufficient - Necessary Condition - explain with example -4 Various types of Cause -2 Causal Laws and the Uniformity of Nature -1 Induction by Simple Enumeration -1 Methods of Causal Analysis -6 Method of Agreement Method of Difference Method of Agreement & Difference Method of Concomitant Variation Method of Residues Limitations of Inductive Techniques -2 Tutorial -2</p> <p>Unit -3 Science & Hypothesis -12 Scientific Explanation -1 Distinguishes Scientific from Unscientific -2 Scientific Inquiry, Different stages of Scientific Inquiry -2 Evaluating Scientific Explanations-2 Crucial Experiment -1 Ad- hoc Hypothesis -1 Summary of this chapter -1 Tutorial -2</p> <p>Unit -4-Probability-10</p> <p>Unit -5 - Philosophy of Logic & Language Text- John Hospers : An Introduction to Philosophical Analysis -35 Meaning - word meaning & Sentence meaning -16 What is word , How a word can be defined?-2 Natural Sign and Conventional sign or Symbol -2 Meanings of the word "meaning"-4 Ambiguity -2. Sentence meaning -Criteria of Sentence meaning -4 Tutorial -2 Definition -9 What is Definition? Need of Definition. Verbal Definition Different types of Definitions Tutorial -1 Truth -10 Diffination of Truth Three types of theory about Truth Correspondence theory of Truth Coherence theory of Truth Pragmatic theory of Truth Tutorial</p> <p>Theory DSE-2: B. Russell: The Problems of Philosophy Chapter 1: Appearance and Reality.</p> <p>Theory DSE-2: Chapter 2: The Existence of Matter.</p>

	<ul style="list-style-type: none"> • <i>Tutorial -2</i> <p style="text-align: center;">Unit 5: --12</p> <ul style="list-style-type: none"> • Different types of <i>Linga</i> or <i>Hetu</i> • <i>Laksna</i> of different types of <i>Hetvabhava</i> <p style="text-align: center;">Unit 6: 4</p> <ul style="list-style-type: none"> • <i>Upamana-Pramana</i> <p><i>Laksna</i> and its <i>Karana</i></p>	
Sem-II (H)	Sem-IV (H)	Sem-VI (H)
<p>2nd sem Hons.CC-4 Outlines of Western philosophy-II</p> <p>Unit -1 -Locke -22 Introduction-2 Refutation of innate ideas -3 Theory of ideas -4 Diffinition of ideas Source of ideas Two types of ideas (Simple & Complex) Four types of Simple ideas Primary quality & Secondary quality -2 Tertiary quality -1 Complex ideas ,Three types structure of Complex ideas -2 Different types of Complex ideas-1 Theory of Substance--2 Theory of knowledge--2 Degrees of knowledge-1 Tutorial-2</p> <p>Unit-2 Berkeley -17 Introduction -2 Rejection of the Locke's notion of Substance- 3 Refutation of Abstract ideas -2 Rejection of the distinction between primary and secondary qualities - 2 Esse Est Percipi- 4 Idealism, Subjective Idealism , ls Berkeley's Idealism Solipsism? -2 Criticism of Berkeley's Idealism-1 Tutorial- 1</p> <p>Unit -3, Hume -18 Introduction-2 Origin of knowledge- Impression and Ideas -3 Laws of Association-2 Relation of Ideas and Matters of fact -3 Nation of Causality -2 Problem of personal Identity -2 Scepticism- 3 Tutorial-1</p>	<p style="text-align: center;">CC-VIII- Western Logic-1</p> <p>Unit 1: Categorical Proposition 16</p> <ul style="list-style-type: none"> • What is Proposition? ---2 • Classes & Categorical Proposition--2 • Four kinds of Categorical Proposition-----2 • Quality, Quantity and Distribution----- 2 • Traditional Square of Opposition----2 • Immediate Inference • Existential Import & Interpretation of Categorical Proposition---2 • Symbolism & Diagrams for Categorical Proposition---2 • Tutorial --- 2 <p>Unit 2: Categorical Syllogism- 16</p> <ul style="list-style-type: none"> • What is Syllogism?--2 • Characteristics of Categorical Syllogism-----2 • Formal nature of syllogistic argument--2 • Figure & Mood of Syllogism • Rules of Categorical Syllogism---4 • Venn-Diagram for testing Syllogism-----4 • Tutorial ---2 <p>Unit 3: Syllogism in Ordinary Language---22</p> <ul style="list-style-type: none"> • Syllogistic Argument---2 • Reduction the number of terms to three----3 • Translating categorical proposition into standard form--2 • Uniform Translation---2 • Enthymemes---2 • Sorties--2 • Disjunctive and Hypothetical Syllogism---3 • The Dilemma---4 • Tutorial ---2 	<p>DSE-04- An Enquiry Concerning Human Understanding</p> <p>Introduction -2</p> <p>Ch.-1 Of the different species of Philosophy -18</p> <p>Different types of philosophy based on two perspectives of men.First perspective view & 2nd perspective view -2</p> <p>Easy and Obvious Philosophy, Accurate and abstruse Philosophy, Profound Philosophy -4</p> <p>Differentiation between two types of philosophy -2</p> <p>What is 'Mental Geography'?</p> <p>"Be a Philosopher but, amidst all your philosophy,be still a man"-Significance the Sentence of Enquiry -4</p> <p>Metaphysics, Does Hume exclusion Metaphysics? What type of Metaphysics approved by Hume?-4</p> <p>Tutorial -2</p> <p>Ch -II- Of the Origin of ideas -12</p> <p>Source of ideas</p> <p>What is Sensation?</p> <p>Why Hume said, "The most lively thought is still inferior to the dullest sensation"</p> <p>Difference between sensation and ideas - 4</p> <p>"No ideas without impression"- Is there any exception in ' Enquiry ' . Discuss with example that exception.- 2</p> <p>Different argument given by Hume to established his opinion on Impression & Ideas.-2</p> <p>Criticism of this chapter.-2</p> <p>Tutorial -2</p> <p>Ch.- III - Of the Association of ideas.- 6</p> <p>What is Association?</p> <p>What is the Association of ideas?-2</p>

<p>Theory CC4: Outlines of Western Philosophy—II Unit 4: (d) Role of Sensibility and Understanding in the Origin of Knowledge.</p> <p>Theory CC4: Outlines of Western Philosophy—II Unit 4: (e) Possibility of Synthetic A-priori Judgments and (f) Space and Time</p>	<p>Unit 4: Symbolic Logic –28</p> <ul style="list-style-type: none"> • Significance of Symbol • Simple & Compound Statement-----4 • Different types of Compound Statement & Uses their Symbol---4 • Uses Truth-table method of different Compound Statement---4 • Testing the validity by using Truth-table method---4 • Logical Equivalent • Material Equivalent---2 • Statement Form, Difference between Statement & Statement Form---2 • Determine truth-values of different types of Statement Form by using Truth-table method---4 • Refutation by logical analogy---1 • The Laws of Thought---1 • Tutorial ---2 <p>Unit 5: Method of Deduction – 30</p> <ul style="list-style-type: none"> • Formal Proof of Validity by Rules of Inference & Rules of Replacement---15 • Invalidity Proof----4 • Indirect Proof of Validity---4 • practice ---5 • Tutorial -2 <p>Unit 6: Quantification Theory -14</p> <ul style="list-style-type: none"> • Symbolism of Quantifier Proposition-----3 • Rules of Quantification Theory & Its Practice---5 • Invalidity Proof by Using Quantification Theory---2 • practice ---2 • Tutorial ---2 <p>Theory CC10: Unit 3: Fundamental Features of Major Religions: Hinduism, Christianity, Islam, Buddhism: Basic Tenets, Bondage and Liberation</p> <p>Theory CC10: Unit 4: Arguments against the Existence of God: Sociological Arguments, Freudian Arguments, Buddhist Arguments.</p>	<p>Law of the Association of ideas.</p> <p>Explain with example three laws of the Association of ideas.2</p> <p>Natural relation & Philosophical relation.-1</p> <p>Criticism of this chapter.-1</p> <p>Ch-IV-Sceptical Doubts Concerning the Operations of the Understanding -20</p> <p>Relations of ideas & Matters of fact.-2</p> <p>What is Relation of ideas.-Example.</p> <p>What is Matters of fact</p> <p>Difference between relation of Ideas and Matters of fact.-4</p> <p>"All reasoning Concerning matters of fact founded on the relation of cause and effect "- Significance this sentence by Hume.-2</p> <p>What is Custom?-1</p> <p>Why Hume said that the relation of cause and effect is a Custom?-2</p> <p>"The effect is totally different from the cause and consequently can never be discovered in it"</p> <p>-- Discuss.-3</p> <p>Demonstrative Reasoning & Moral Reasoning.-2</p> <p>Criticism of this chapter.-2</p> <p>Tutorial class -2</p> <p>Ch.-V-Sceptical Solution of these Doubts- 10</p> <p>Academic or Sceptical philosophy - 02</p> <p>"Custom is the great guide of human life " - Significance this statement -2</p> <p>What is Belief? What is Fiction?</p> <p>Difference between fiction and belief -2</p> <p>Instinct -1</p> <p>Relation are established in ideas by three laws - Resemblance , Contiguity and Causality -2</p> <p>Criticism of this chapter -1</p> <p>Ch-VI - Of the Idea of Necessary Connection -20</p> <p>What is Necessary Connection in general ?</p> <p>What is the Necessary Connection in Hume's idea? -4</p> <p>What is Power?</p> <p>What are the argument to deny the existence of power - by Hume.-4</p> <p>Given arguments from external world & internal world to established there are no power in relation of Causality.-4</p> <p>What is the name of the causal theory in Hume's philosophy?</p> <p>Hume's theory of Causation.-3</p>
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			<p>"They seemed to be conjoined , but never connected."- 2</p> <p>Defination of causation given by Hume's "Enquiry". -1</p> <p>Tutorial -2.</p> <p>Theory CC13: Philosophy in the Twentieth Century: Indian</p> <p>Unit 1: Rabindranath Tagore: (a) Nature of Man : The Finite Aspect of Man, the Infinite Aspect of Man, (b) Nature of Religion, and (c) Surplus in Man</p> <p>Theory CC13: Unit 2: Swami Vivekananda: (a)Practical Vedānta, (b) Universal Religion and (c) Yoga</p>
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Head of the Department,
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SURI VIDYASAGAR COLLEGE, DEPARTMENT OF ENGLISH

TEACHING PLAN OF DR. SUSANTA KUMAR BARDHAN

ENGLISH (Honours) (2018-19) (July 2018– June 2019)

- **Dr. Bardhan is on Lien from 01.09.2018.**

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	3 rd Year (H)	No. of Lecture
Jul	CC1: Indian Classical Literature Unit 1: Vyasa: 'The Book of the Assembly Hall', in <i>The Mahabharata</i>	Lecture 7 + Tutorial 1 =8	CC6: Popular Literature Agatha Christie: <i>The Murder of Roger Ackroyd</i>	Lecture 10 + Tutorial 2 =12	Paper: VII: Modern Period ii Unit -IV: Philology and Phonetics	Lecture 14 + Tutorial 2 =16
Aug	CC1: Indian Classical Literature Unit 3: Vyasa: 'The Book of the Assembly Hall', in <i>The Mahabharata</i>	Lecture 7 + Tutorial 1 =8	CC6: Popular Literature Agatha Christie: <i>The Murder of Roger Ackroyd</i>	Lecture 4 + Tutorial =4	Paper: VII :Modern Period ii Unit -IV: Philology and Phonetics	Lecture 8 + Tutorial 2 =10 Lecture 4 + Tutorial 2 =6
Sept	On LIEN from 01.09.2018 ↓					
Oct						
Nov	---		---		---	
Dec						
Jan	Sem-II (H)		Sem-IV (H)		3rd Year (H)	
Feb						
Mar	---		---		---	
Apr	---		---		---	
May	---		---		---	
June	---		---		---	

Head of the Department,
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DEPARTMENT OF PHILOSOPHY

TEACHING PLAN OF Ramesh Das Philosophy (General) (July 2018 – June 2019)

Month	Part-III	No. of Class
July-December	<p style="text-align: center;"><u>Paper IV: Philosophy of Religion and Socio-Political Philosophy</u></p> <p>Half-I Philosophy of Religion: 4. Historical Development of Religion 5. Arguments for the Existence of God: Ontological, Cosmological and Teleological 6. The Principle of Secularism</p>	25
January-June	<p style="text-align: center;"><u>Paper IV: Philosophy of Religion and Socio-Political Philosophy</u></p> <p>Half-II Socio-Political Philosophy: 2. Basic Concepts: Society, Social Groups, Community, Association, Institution</p>	10

CBCS Syllabus

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Sem-V (G)	No. of Lecture
Jul	<p>Theory: CC- 1A: Indian Philosophy</p> <p>3. Jainism: (a)anekāntavāda and (b)syādvāda and nayavāda</p>	6	<p>Theory</p>		<p>Theory GE- 1: Indian Philosophy</p> <p>3. Jainism: (a)anekāntavāda and (b)syādvāda and nayavāda</p>	7
Aug	<p>Theory:</p>				<p>Theory</p>	

	4. Buddhism: (b)FourNobleTruths(b)pratītyasamutpāda(c)kṣaṇabhāṅgavādaand(d)nairātmyavāda	7			4. Buddhism: (b)FourNobleTruths(b)pratītyasamutpāda(c)kṣaṇabhāṅgavādaand(d)nairātmyavāda	6
Sept	Theory: 5. Nyāya(a) pramāṇa: pratyakṣa (perception), anumāna (inference),	7			Theory 5. Nyāya(a) pramāṇa: pratyakṣa (perception), anumāna (inference),	6
Oct	Theory: 5. Nyāya(a) upamāna (comparison) and śabda (testimony)	6	Theory		Theory 5. Nyāya(a) upamāna (comparison) and śabda (testimony)	6
Nov	Theory: 7. Yoga : (a)cittavṛttinirodha and (b)aṣṭāṅgayoga	5	Theory		Theory 7. Yoga : (a)cittavṛttinirodha and (b)aṣṭāṅgayoga	6

Dec	Theory: 8. Mīmāṃsā: (a)arthāpattian (b)anupalabdhi	6	Theory		Theory 8. Mīmāṃsā: (a)arthāpattian (b)anupalabdhi	5
	Sem-II (G)		Sem-IV (G)		Sem-VI (G)	
Jan	CC- 1B: Western Philosophy 5. Theories of Causation :Regularity Theory and Entailment Theory	7	Theory		Theory GE- 2: Western Philosophy 5. Theories of Causation :Regularity Theory and Entailment Theory	8
Feb	6. Substance :Views of Descartes, Spinoza	7	Theory		Theory 6. Substance :Views of Descartes, Spinoza	7
Mar	6. Substance :Locke and Berkeley	7	Theory		Theory 6. Substance :Locke and Berkeley	8

Apr	7. Relation between Mind and Body: Interactionism	6	Theory		Theory 7. Relation between Mind and Body: Interactionism	6
May	7. Relation between Mind and Body: Parallelism	6	Theory		Theory 7. Relation between Mind and Body: Parallelism	7
June	8. Theories of Evolution: Mechanistic and Emergent	4	Theory		Theory 8. Theories of Evolution: Mechanistic and Emergent	5

Head of the Department,
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DEPARTMENT OF PHILOSOPHY

TEACHING PLAN OF Mr. RAMESH DAS
Philosophy (Honours) (July 2018– June 2019)

Month	Part-III	No. of Class
July-December	<p style="text-align: center;"><u>Paper VI : Psychology and Socio-Political Philosophy</u></p> <p style="text-align: center;">Half-I Psychology</p> <p>1. Nature and Scope of Psychology (2 classes) 2. Methods of Psychology: Introspection, Observation, Experimental Method (6 classes) 3. Sensation and Perception: Nature of Sensation and Perception, Weber-Fechner Law, Gestalt theory of Perception (6 classes) 8 3. Memory: Factors of Memory, Marks of Good Memory, Laws of Association, Causes of Forgetfulness (6 classes) 4. Attention: Nature, Condition and Span of Attention, Division of Attention 6 classes) 5. Learning: Theories of Learning: Trial and Error Theory (Thorndike), Conditioned Response Theory (Pavlov), Gestalt Theory of Learning (6 classes) 6. Consciousness: Levels of Consciousness, Proofs for the Existence of the Unconscious, Freud's Theory of Dream (6 classes) 7. Intelligence: Instinct and Intelligence, Measurement of Intelligence, I.Q., Binet-Simon Test of Intelligence, Terman-Merril and Wecshler Test of Intelligence.(6 classes) 8. Schools of Psychology: Gestalt School, Psychoanalysis and Behaviorism (6 classes).</p>	50
January-June	<p style="text-align: center;"><u>PaperVI : Psychology and Socio-Political Philosophy</u></p> <p style="text-align: center;">Half-II Socio-Political Philosophy</p> <p>1. Nature and Scope of Social Philosophy and Political Philosophy (3 classes) 2. Basic Concepts: Society, Social Group, Community, Association, Institution, Customs, Folkways and Mores (14 classes) 3. Social Class and Caste : Class Attitude and Class Consciousness, Marxian Theory of Class, Caste System in Indian, B.R.Ambedkar's Criticism of Caste System, Dalit Movement (12 classes) 4. Political Ideas: i) Democracy – its different forms ii) Socialism – Utopian and Scientific iii) Secularism and its Nature, Secularism in India iv) Nation, Nationalism and Internationalism (Rabindranath) v) Swaraj and Sarvodaya (M.K.Gandhi)(21 classes</p>	50

July-June	<u>Paper-VII: Philosophy of Religion and Philosophical Analysis</u> Half-I Philosophy of Religion: 1. Nature and Scope of Philosophy of Religion (2 classes) 2. Origin and Development of Religion (3 classes) 3. Religion, Dharma and Dhamma (2 classes) 4. Hinduism, Christianity, Islam, Buddhism, Jainism: Basic Tenets, Prophets (if any), Incarnation, Bondage and Liberation (16 classes)	23
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CBCS SYLLABUS

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Sem-V (H)	No. of Lecture
Jul	Theory: CC-1: Unit3: Outlines of Indian Philosophy—I Jainism: (a) anekāntavāda, (b) syādvāda and nayavāda, Theory: CC-2: Unit 1: (d) Zeno (Paradoxes) Unit 2: Plato: (a) Theory of Knowledge	8+10	Theory CC-5: Indian Ethics Unit-1: puruṣārtha (Cārvāka and Āstikaviews) Theory SEC-1: Unit 4:(c) Sāṃkhya view and (d) Advaita Vedānta View.	17+7	Theory DSE-1: Kāthopaniṣad Chapter 1: Kāthopaniṣad First Chapter : vallis – I, Theory DSE-2: Chapter 3: The Nature of Matter	16+17
Aug	Theory: CC-1: Unit 3 (c) Theory of Self and Liberation (d) Nature of Substance: Relation between Substance, Attributes & Modes Theory: CC-2: Unit 2: Plato: (b) Theory of Ideas. Unit 3: Aristotle: (a) Refutation of Plato's Theory of Ideas.	7+9	Theory CC-5: Unit 2: Vedic Concepts : ṛta, satya, yajña, ṛṇa Theory SEC-1: Unit 5: Methods of Philosophical Discourse (kathā) : (a) vāda, (b) jalpa, (c) vitaṇḍā, (d) chhala, (e) jāti and (f) nigrahasthāna	17+7	Theory DSE-1: Chapter 1: Kāthopaniṣad First Chapter : vallis – I, Theory DSE-2: Chapter 4: Idealism	18+18

Sept	<p>Theory: CC-1: Unit 4:</p> <p>Buddhism: (a) Four Noble Truths, (b) pratītyasamutpāda (c) kṣaṇabhangavāda,</p>	9	<p>Theory CC-5: Unit 3: Ethics in Śrīmadbhagavadgītā : niṣkāmakarma and sthitaprajña</p>	17	<p>Theory DSE-1: Chapter 2: First Chapter : vallis – II</p>	17
Oct	<p>Theory: CC-1: Unit 4: (d) nairātmyavāda (e) Four Major Schools of Buddhism</p>	9	<p>Theory CC-5: Unit 4: Buddhist Ethics: pañcaśīla and brahmavihāra</p>	16	<p>Theory DSE-1: Chapter 2: First Chapter : vallis – II</p>	15
Nov	<p>Theory: CC-1: Unit 5: Nyāya: (a) Nyāya Epistemology : pratyakṣa (Perception), (b) anumāna (Inference),</p>	9	<p>Theory CC-5: Unit 5 Jaina Ethics: pañcavrata: mahāvratā and anuvratā, and triratna</p>	18	<p>Theory DSE-1: Chapter 3: First Chapter : vallis – III</p>	17
Dec	<p>Theory: CC-1: Unit 5: (c) upamāna (Comparison) and (d) śabda (Testimony); (e) khyātivāda (Theory of Error)</p>	9	<p>Theory CC-5: Unit 6: Yoga Ethics: yama and niyama</p>	17	<p>Theory DSE-1: Chapter 3: First Chapter : vallis – III</p>	16

	Sem-II (H)		Sem-IV (H)		Sem-VI (H)	
Jan	<p>Theory CC-3: Outlines of Indian Philosophy-II Unit-2: Yoga:(i) citta,(ii) cittabhūmi,(iii) cittavṛtti,</p> <p>Theory CC4: Outlines of Western Philosophy—II Unit 5: (a) Dialectical Method</p>	7+9	<p>Theory CC-9: Psychology Unit-1&2: 1.Nature of Psychology 2.Research Methods in Psychology</p> <p>Theory CC10: Unit 5: Arguments for the Existence of God (Indian and Western): Yoga Arguments, Nyāya Arguments, Cosmological Arguments, Teleological Arguments, Ontological Arguments.</p>	16+18	<p>Theory DSE-3: Rabindranath Tagore: Sa dhana Unit 1: THE RELATION OF THE INDIVIDUAL TO THE UNIVERSE</p> <p>Theory CC13: Unit 3: Sri Aurobindo: (a) Nature of Reality, (b) Human Evolution– its different stages and (c) Integral Yoga</p>	17+18
Feb	<p>Theory CC-3: Unit-2: (iv) cittavṛttinirodha (v) Īśvara</p> <p>Theory CC4: Outlines of Western Philosophy—II Unit 5: (b) The Absolute</p>	9+6	<p>Theory CC-9: Unit-3: Central Nervous system</p> <p>Theory CC10: Unit 6: The Problem of Evil.</p> <p>Unit 7: Monotheism, Polytheism and Henotheism.</p>	18+15	<p>Theory DSE-3: Unit 1: THE RELATION OF THE INDIVIDUAL TO THE UNIVERSE</p> <p>Theory CC13: Unit 4: S. Radhakrishnan: (a) Nature of Man, (b) Nature of Religious Experience and (c) Nature of Intuitive Apprehension</p>	18+17
Mar	<p>Theory CC-3: Unit-3: Pūrva-Mīmāṃsā:(i) pramāṇa-s with special reference to arthāpatti and anupalabdhi</p>	7	<p>Theory CC-9: Unit 4&5: 4.Perception: Colour and Depth , Pattern Recognition, Perceptual Organization 5.Attention:Nature, Conditions, Span and Division of Attention</p>	17	<p>Theory DSE-3: Unit 2: SOUL CONSCIOUSNESS</p>	17
Apr	<p>Theory CC-3: Unit-3: (ii) prāmāṇyavāda</p>	8	<p>Theory CC-9: Unit -6: Learning: Classical Conditioning Theory, Instrumental (Operant) Conditioning Theory, Trial and Error Theory, Insight Theory</p>	18	<p>Theory DSE-3: Unit-3: THE PROBLEM OF EVIL</p>	16

May	Theory CC-3: Unit-6: <i>Khyātivāda:</i> (Theory of Error): Bhāṭṭa	8	Theory CC-9: Unit -7& 8: 7.Memory: Factors of Memory, Marks of Good Memory, Laws of Association, Causes of Forgetfulness 8. Consciousness: Levels of Consciousness, Freud's Theory of Dream	17	Theory DSE-3: Unit-4: THE PROBLEM OF SELF	16
June	Theory CC-3: Unit-6: <i>Khyātivāda:</i> (Theory of Error): Advaita Vedanta	7	Theory CC-9: Unit-9: Intelligence: Insight and Intelligence, Measurement of Intelligence, I. Q. Test of Intelligence	15	Theory DSE-3: Unit-5: REALISATION IN LOVE	18

Head of the Department,
Department of Philosophy,
Suri Vidyasagar College

DEPARTMENT OF PHYSICAL EDUCATION

**Teaching Plan of Mr. Bappa Sanguin
Physical Education (General) (2018-19) (July 2018 – June 2019)**

Month	Sem-I (Gen)	No. of Lecture	Sem-III (Gen)	No. of Lecture	Sem-V (Gen)	No. of Lecture
	PAPER-1: Foundation and History of Physical Education Corse Code- CC1A Total number of classes – 30+6		CORE PAPER- 3: Anatomy, Physiology and Exercise Physiology Corse Code- CC1C Total number of classes - 60		Tests, Measurements and Evaluation in Physical Education Course code: DSE 1 Total number of classes – 60 & Modern Trends and Practices in Physical Education Exercise Sciences (For the students other than Physical Education) Course code: GE1 Total number of classes – 60	
Jul	<u>Theory</u> Unit- I: Introduction 1.1. Meaning and definition of Physical Education. <u>Practical</u> Learn and demonstrate the technique of Suryanamaskar.	2 3	<u>Theory</u> Unit- I: Introduction 1.1 Meaning and definition of Anatomy, Physiology and Exercise Physiology. 1.2. Importance of Anatomy, Physiology and Exercise Physiology in Physical Education.	6 8	<u>Theory</u> Unit- I: Introduction Course code: DSE 1 1.1. Concept of test, measurement & Evaluation. 1.2. Criteria of good test. Course code: GE1 Unit- I: Introduction 1.1. Meaning, definition and importance of physical Education and Sports. 1.2. Aims, objectives and scope of Physical Education. Indian Games and Racket Sports Course Code: SEC3 BADMINTON A. Fundamental skills 1. Basic Knowledge: Various parts of the Racket and Grip. 2. Service: Short service, Long service, Long-high service. 3. Shots: Over head shot, Defensive clear shot, Attacking clear shot, Drop shot, Net shot, Smash.	6 10 7
Aug	<u>Theory</u> 1.2. Aim and objectives of Physical Education. 1.3. Modern concept of Physical Education. <u>Practical</u> Learn and demonstrate the technique of Suryanamaskar.	7 3	<u>Theory</u> 1.1. Human Cell- Structure and function. 1.2. Tissue- Types and functions. <u>LAB PRACTICAL</u> 1. Assessments of BMI and WHR.	8 4	<u>Theory</u> Course code: DSE 1 1.3. Principles of Evaluation. 1.4. Importance of Test, Measurement and Evaluation in Physical Education and Sports. Course code: GE1 Unit- I: Introduction 1.2. Types of sports and their utility in physical education. 1.4. Meaning, definition and importance of Physical fitness and Motor fitness. Difference between physical fitness and motor fitness. Components of Physical fitness.	7 8
Sept	<u>Theory:</u> 1.4. Importance of Physical Education.	3	<u>Theory</u> Unit- II: Musculo-skeletal System 2.1. Skeletal System- Structure of Skeletal		<u>Theory</u> Course code: DSE 1 Unit- II:Measurements of Body Compositions and Somatotype	

	<p>Practical</p> <p>Learn and demonstrate the technique of Suryanamaskar.</p>	4	<p>System. Classification and location of bones and joints. Anatomical differences between male and female.</p> <p>LAB PRACTICAL</p> <p>2. Assessment of Heart rate, Blood Pressure, Respiratory Rate, and Pick Flow Rate (any two).</p>	8	<p>Assessment</p> <p>Body Mass Index (BMI)- Concept and method of measurement.</p> <p>Course code: GE1 Unit- II: Biological, Psychological and Sociological Foundations of Physical Education</p> <p>2.1. Biological Foundation- Meaning and definition of growth and development. Factors affecting growth and development. Differences of growth and development. Principles of growth and development.</p> <p>2.2. Meaning and definition of Psychology. Importance of Psychology in Physical Education. Qualities of good leader in Physical Education. Principles of leadership activities.</p> <p>LAB & FIELD PRACTICAL</p> <p>1. Assessment of somatotype and % body fat (any one).</p>	2
Oct	<p>Unit- II: Biological and Sociological Foundations of Physical Education</p> <p>2.1. Biological Foundation- Meaning and definition of growth and development. Factors affecting growth and development. Differences of growth and development. Principles of growth and development.</p>	5	<p>Theory</p> <p>2.2. Muscular System- Type, location, function and structure of muscle.</p> <p>Practical: Track and Field Course code: SEC 1</p> <p>1. Track Events 1.1. Starting Techniques: Standing start and Crouch start (its variations) use of Block. 1.2. Acceleration with proper running techniques.</p>	4	<p>Theory Course code: DSE 1</p> <p>2.1. Body Fat- Concept and method of measurement. 2.2. Lean Body Mass (LBM)- Concept and method of measurement.</p> <p>Course code: GE1 Unit- II: Biological, Psychological and Sociological Foundations of Physical Education</p> <p>2.3. Sociological Foundation- Meaning and definition of Sociology. Social values and their Importance. Socialization Through Sports</p> <p>LAB & FIELD PRACTICAL</p> <p>2. Assessment of AAHPER Youth Fitness Test and Harvard Step Test (any one).</p>	8
Nov	<p>Theory:</p> <p>2.2. Age- Chronological age, anatomical age, physiological age and mental age.</p>	3	<p>Theory</p> <p>2.3. Types of muscular contraction.</p> <p>Practical: Track and Field Course code: SEC 1</p> <p>1.3. Finishing technique: Run Through, Forward Lunging and Shoulder Shrug. 1.4. Relay Race: Starting, Baton Holding/Carrying, Baton Exchange in between zone, and Finishing.</p>	2	<p>Theory Course code: DSE 1</p> <p>2.3. Somatotype- Concept and method of measurement</p> <p>Course code: GE1</p> <p>2.4. Role of games and sports in National and International integration.</p> <p>Course Code: SEC3</p> <p>4. Game practice with application of Rules and Regulations. B. Rules and their interpretations and duties of the officials.</p>	2
Dec	<p>Theory:</p> <p>2.3. Sociological Foundation- Meaning and definition of Sociology, Society and</p>	3	<p>Theory</p> <p>2.4. Effect of exercise on muscular system.</p> <p>Practical:</p>	2	<p>Group discuss & class exam</p> <p>Tests, Measurements and Evaluation in Physical</p>	4

	Socialization. 2.4. Role of games and sports in National and International integration.	2	Track and Field Course code: SEC 1 2. Field events (any two) 2.1. Long Jump: Approach Run, Take-off, Flight in the air (Hang Style/Hitch Kick) and Landing. 2.2. High jump: Approach Run, Take-off, Bar Clearance (Straddle) and Landing. 2.3. Shot put: Holding the Shot, Placement, Initial Stance, Glide, Delivery Stance and Recovery (Perry O'Brien Technique). 2.4. Discus Throw: Holding the Discus, Initial Stance, Primary Swing, Turn, Release and Recovery (Rotation in the circle). 2.5. Javelin Throw: Grip, Carry, Release and Recovery (3/5 Impulse stride).	5	Education Course code: DSE 1 & Modern Trends and Practices in Physical Education Exercise Sciences (For the students other than Physical Education) Course code: GE1	1
	Sem-II (Gen)		Sem-IV (Gen)		Sem-VI (Gen)	
Jan	CORE PAPER- 2: Management of Physical Education and Sports Corse Code- CC1B Total number of classes – 60 Theory: Unit- I: Introduction 1.1. Concept and definition of Sports Management. 1.2. Important of Sports Management Practical Introduction: FIELD PRACTICAL Lay out knowledge and Officiating ability 1. Track and Field events (any one). 2. Games: Football, Kabaddi, Kho-Kho and Volleyball (any one)	4	CORE PAPER- 4: Health Education, Physical Fitness and Wellness Corse Code- CC1D Total number of classes – 60 Theory: Unit- I: Introduction 1.1. Concept, definition and dimension of Health. 1.2. Definition, aim, objectives and principles of Health Education. Practical LAB PRACTICAL 1. First-aid Practical- Triangular Bandage: Slings (Arm Sling, Collar & Cuff Sling), Roller Bandages: Simple Spiral, Reverse Spiral, Figure of Eight, Spica.	4	Psychology in Physical Education and Sports Corse Code- DSE2 Total number of classes – 60 Theory: Unit- I: Introduction. 1.1. Meaning and definition Psychology. 1.2. Importance and scope of Psychology. Health Education and Tests & Measurements in Physical Education (For the students other than Physical Education) Course Code: GE-2 Total number of classes – 60 Unit- I: Introduction. 1.1. Concept, definition and dimension of Health. 1.2. Definition, aim, objectives and principles of Health Education. Practical LAB PRACTICAL 1. Assessment of Personality, Stress and Anxiety.	4
				5		4
Feb	Theory: 1.3. Purpose of Sports Management. 1.4. Principles of Sports Management. Practical FIELD PRACTICAL Lay out knowledge and Officiating ability 1. Track Event.	3	Theory: 1.3. Health Agencies- World Health Organization (WHO), United Nations Educational Scientific and Cultural Organization (UNESCO). 1.4. School Health Program- Health Service, Health Instruction, Health Supervision, Health appraisal and Health Record. Practical LAB PRACTICAL 2. Practical knowledge on Hydro-therapy and Thermo-therapy	8	Theory: 1.3. Meaning and definition Sports Psychology. 1.4. Need for knowledge of Sports Psychology in the field of Physical Education. Course Code: GE-2 1.3. Health Agencies- World Health Organization (WHO), United Nations Educational Scientific and Cultural Organization (UNESCO). Practical LAB PRACTICAL 2. Measurement of Reaction Time, Depth Perception and Mirror Drawing (any one).	4
		3		3		4
Mar	Theory: Unit- III: Facilities and Equipments 3.1 Method of calculation of Standard Athletic Track	3	Theory: 2.1. Communicable Diseases- Malaria, Dengue and Chicken Pox. 2.2. Non-communicable Diseases- Obesity, Diabetes and AIDS. Practical	4	Theory: Unit- II: Learning 2.1. Meaning and definition of learning. 2.2. Theories of learning and	4

	<p>marking</p> <p>Practical</p> <p>FIELD PRACTICAL Lay out knowledge and Officiating ability 1. Field events</p>	3	<p>Gymnastics and Yoga Course code: SEC 2</p> <p>GYMNASTICS 1. Compulsory 1.1. Forward Roll 1.2. T-Balance 1.3. Forward Roll with Split leg 1.4. Backward Roll 1.5. Cart-Wheel</p>	5	<p>Laws of learning.</p> <p>Course Code: GE-2 1.4. Nutrition- Nutritional requirements for daily living. Balance Diet. Health disorders due to deficiencies of Vitamins and Minerals.</p> <p>BALL GAMES Course code: SEC4 FOOTBALL</p> <p>A. Fundamental Skills 1. Kicking: Kicking the ball with inside of the foot, Kicking the ball with Full Instep of the foot, Kicking the ball with Inner Instep of the foot, Kicking the ball with Outer Instep of the foot and Lofted Kick. 2. Trapping: Trapping- the Rolling ball, and the Bouncing ball with sole of the foot.</p>	4 3
Apr	<p>Theory:</p> <p>3.2 Care and maintenance of play ground and gymnasium.</p> <p>Practical</p> <p>FIELD PRACTICAL Lay out knowledge and Officiating ability, Games: Football.</p>	3	<p>Theory:</p> <p>2.3. Nutrition- Nutritional requirements for daily living. Balance Diet. Health disorders due to deficiencies of Vitamins and Minerals.</p> <p>Practical Gymnastics and Yoga Course code: SEC 2</p> <p>2.1. Dive and Forward Roll 2.2. Hand Spring 2.3. Head Spring 2.4. Neck Spring 2.5. Hand Stand and Forward Roll 2.6. Summersault</p>	4	<p>Theory:</p> <p>2.3. Learning curve: Meaning and Types.</p> <p>LAB PRACTICAL 1. Assessment of Personality, Stress and Anxiety (any one)</p> <p>Course Code: GE-2 Unit- III: Mesasurement of Body Compositions and Somatotype Assesmen</p> <p>3.1 Body Mass Index (BMI)- Concept and method of measurement.</p> <p>BALL GAMES Course code: SEC4 FOOTBALL</p> <p>3. Dribbling: Dribbling the ball with Instep of the foot, Dribbling the ball with Inner and Outer Instep of the foot. 4. Heading: In standing, running and jumping condition. 5. Throw-in: Standing throw-in and Running throw-in.</p>	2 2 4
	<p>Theory:</p> <p>3.3 Importance, care and maintenance of sports equipments.</p> <p>Practical</p> <p>FIELD PRACTICAL Lay out knowledge and Officiating ability</p> <p>Volleyball</p>	4	<p>Theory:</p> <p>2.4. Postural deformities- Causes and corrective exercise of Kyphosis, Lordosis, Scoliosis, Knock Knees and Flat Foot.</p> <p>Practical YOGA</p> <p>3. Asanas 3.1. Standing Position 3.4 Prone Position 3.1.1. Ardachandrasana 3.4.1 Bhujangasana 3.1.2. Brikshasana 3.4.2 Salvasana 3.1.3. Padahastanasana 3.4.3 Dhanurasana</p> <p>3.2. Sitting Position 3.5 Inverted Position 3.2.1. Ardhakurmasana 3.5.1 Sarbanganasana 3.2.2. Paschimottanasana 3.5.2 Shirsasana 3.2.3. Gomukhasana 3.5.3 Bhagrasana</p>	3	<p>Theory:</p> <p>2.4. Transfer of learning- Meaning, definition type and factors affecting transfer of Learning.</p> <p>LAB PRACTICAL 2. Measurement of Reaction Time, Depth Perception and Mirror Drawing (any one).</p> <p>Course Code: GE-2 3.2 Body Fat- Concept and method of measurement. 3.3 Lean Body Mass (LBM)- Concept and method of measurement.</p> <p>BALL GAMES Course code: SEC4 FOOTBALL</p> <p>6. Feinting: With the lower limb and upper part of the body. 7. Tackling: Simple Tackling, Slide Tackling. 8. Goal Keeping: Collection of Ball, Ball clearance- kicking,</p>	3 2 3 4
May						

					throwing and deflecting.	
June	<u>Theory:</u> 3.4 Time Table: Meaning, importance and factors affecting Time Table.	3	<u>Theory:</u> Discuss with students & class exam.	1	<u>Theory:</u> Discuss about theory part and internal exam.	1
	<u>Practical</u> FIELD PRACTICAL Lay out knowledge and Officiating ability, Kabaddi.		<u>Practical</u> 3.3. Supine Position 3.3.1. Setubandhasana 3.3.2. Halasana 3.3.3. Matsyasana		5	
		4	4. Pranayama 4.1. Kapalbhathi 4.2. Bhramri 4.3. Anulam Vilom		BALL GAMES Course code: SEC4 FOOTBALL 9. Game practice with application of Rules and Regulations. B. Rules and their interpretation and duties of officials.	4

Mr. Bappa Sanguin, HOD
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DEPARTMENT OF PHILOSOPHY

TEACHING PLAN OF SIMANTI CHATTERJEE
Philosophy (General) (July 2018 – June 2019)

Month	Part-III	No. of Class
July-December	<p style="text-align: center;"><u>Paper IV: Philosophy of Religion and Socio-Political Philosophy</u></p> <p>Half-I Philosophy of Religion:</p> <p>1. Nature and Scope of Philosophy of Religion 2. Origin of Religion in the Light of Anthropology 3. Psychological Origin and Development of Religion 4. Historical Development of Religion 5. Arguments for the Existence of God: Ontological, Cosmological and Teleological 6. The Principle of Secularism</p>	50
January-June	<p style="text-align: center;"><u>Paper IV: Philosophy of Religion and Socio-Political Philosophy</u></p> <p>Half-II Socio-Political Philosophy:</p> <p>1. Nature and Scope of Social Philosophy and Political Philosophy 2. Basic Concepts: Society, Social Groups, Community, Association, Institution 3. Social Class and Caste: Class and Caste in India 4. Current Social Problems: Justice and Equality, National Integration, Marriage and Divorce 5. Political Ideas : Democracy, Socialism, Sarvodaya and Swaraj</p>	50

CBCS Syllabus

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Sem-V (G)	No. of Lecture	
Jul	<p>Theory: CC-1A: Indian Philosophy</p> <p>Unit1&2:</p> <p>1. Introduction: General Features of Indian Philosophy</p> <p>2. Cārvāka: (a)pratyakṣa (perception) as the only Source of Knowledge(b) Refutation of anumāna (inference) and śabda (testimony) as Sources of Knowledge and (c) jaḍavāda and dehātmavāda</p>	8	<p>Theory CC-1C: Logic Unit1: 1. Basic Concept of Logic: (a)Nature and Scope of Logic, (b)Sentence, Proposition and Statement and (c) Inference and Argument</p> <p>Theory SEC- 1 Philosophy in Practice Unit1: 1. Common and Differentiating Characteristics of Philosophy and darśana</p>	12	<p>Theory DSE- 1A : Philosophy of Religion Unit1:</p> <p>1. Nature and Scope of Philosophy of Religion: (a) Religion, Dharma, Dhamma, (b)Philosophy of Religion, Comparative Religion and Theology</p> <p>GE- 1 : Indian Philosophy Unit1&2:</p> <p>1. Introduction: General Features of Indian Philosophy 2. Cārvāka: (a)pratyakṣa (perception) as the only Source of Knowledge (b)Refutation of anumāna (inference) and śabda (testimony) as Sources of Knowledge and(c)jaḍavāda and dehātmavāda</p>	10	12
Aug	<p>Theory: CC-1A: Unit 3&4:</p> <p>3. Jainism: (a)anekāntavāda and(b)syādvāda and nayavāda</p> <p>4. Buddhism: (b)Four Noble Truths(b)praṭītyasamutpāda(c)kṣaṇabhāṅgavāda and(d)nairātmyavāda</p>	7	<p>Theory CC-1C: Unit 2:</p> <p>2. Types of Argument : Deductive Argument and Inductive Argument</p> <p>Theory SEC- 1 Unit 2:</p> <p>2. Nature of Inquiry in Philosophy and darśana</p>	11	<p>Theory DSE- 1A : Unit2:</p> <p>2. Anthropological and Freudian Theories concerning the Origin and Development of Religion</p> <p>GE- 1 Unit 3&4:</p> <p>3. Jainism: (a)anekāntavāda and (b) syādvāda and nayavāda 4. Buddhism: (a)Four Noble Truths(b)praṭītyasamutpāda (b)kṣaṇabhāṅgavāda and (c)nairātmyavāda</p>	18	13

Sept	<p>Theory: CC-1A: Unit 4: Unit 5:</p> <p>5. Nyāya–Vaiśeṣika: (a) pramāṇa: pratyakṣa (perception), anumāna (inference), upamāna (comparison) and śabda (testimony) and (b) saptapadārthā (Seven Categories)</p>	9	<p>Theory CC-1C: Unit 3</p> <p>3. Opposition of Propositions</p> <p>SEC- 1 Unit 3: 3. Outlines of the Types of Inquiry in Philosophy and darśana: (a) Epistemic Inquiry in Philosophy and darśana and (b) Metaphysical Inquiry in Philosophy and darśana</p>	10 4	<p>Theory DSE- 1A Unit 3:</p> <p>3. Fundamental Features of Major Religions: Hinduism, Christianity, Islam: Basic Tenets, Bondage and Liberation</p> <p>GE- 1 Unit 5:</p> <p>5. Nyāya–Vaiśeṣika: pramāṇa: pratyakṣa (perception), anumāna (inference), upamāna (comparison) and śabda (testimony)</p>	14 13
Oct	<p>Theory: CC-1A: Unit 6:</p> <p>6. Sāṃkhya: (a) satkāryavāda (Theory of Causality) and (b) parināmavāda (Theory of Evolution)</p>	9	<p>Theory CC-1C: Unit 4:</p> <p>4. Immediate Inference: Conversion, Obversion and Contraposition</p> <p>SEC- 1 Unit 4:</p> <p>4. A few Model World-views and Corresponding Paths Leading to Perfection: (a) Plato's view, (b) Kant's view,</p>	11 5	<p>Theory DSE- 1A : Unit 4:</p> <p>4. Arguments for the Existence of God: (Indian and Western): Yoga Arguments, Cosmological Arguments, Teleological Arguments, Ontological Arguments</p> <p>GE- 1 Unit 6&7:</p> <p>6. Sāṃkhya: Satkāryavāda (Theory of Causality) 7. Yoga : (a) cittavṛttinirodha and (b) aṣṭāṅgayoga</p>	15 13
Nov	<p>Theory: CC-1A: Unit 7&8: Nyāya:</p> <p>7. Yoga : (a) cittavṛttinirodha and (b) aṣṭāṅgayoga 8. Mīmāṃsā: (a) arthāpatti and (b) anupalabdhi</p>	9	<p>Theory CC-1C: Unit 5&6:</p> <p>5. Categorical Syllogisms : Rules and Fallacies, Venn Diagram 6. Truth-functional Arguments</p> <p>SEC- 1 Unit 4:</p> <p>4. A few Model World-views and Corresponding Paths Leading to Perfection: (c) Sāṃkhya</p>	12 4	<p>Theory DSE- 1A : Unit 5:</p> <p>5. Arguments against the Existence of God: Sociological Arguments, Freudian Arguments</p> <p>GE- 1 Unit 8:</p> <p>8. Mīmāṃsā : (a) arthāpatti and</p>	15 10

			view and (d) Advaita Vedānta View		(b)anupalabdhi	
Dec	<p>Theory: CC-1A: Unit 9: 9. Advaita Vedānta: Brahman, jīva and jagat</p>	6	<p>Theory CC-1C: Unit 7: 7. Science and Hypothesis</p> <p>SEC- 1 Unit5: 5. Methods of Philosophical Discourse (<i>kathā</i>): (a)vāda, (b)jalpa, (c)vitaṇḍā,(d)chhala,(e)jātiand (f) nigrasthāna</p>	9 4	<p>Theory DSE- 1A : Unit6: 6. Monotheism, Polytheism, Henotheism</p> <p>GE- 1 Unit9: 9. Advaita Vedānta: Brahman, jīva and jagat</p>	12 8
	Sem-II (G)		Sem-IV (G)		Sem-VI (G)	
Jan	<p>Theory CC-1B: Western Philosophy Unit1&2: 1. Metaphysics :Nature of Metaphysics, Elimination of Metaphysics 2. Realism :Naïve Realism, Scientific Realism, Representative Realism</p>	7	<p>Theory CC- 1D: Contemporary Indian Philosophy Unit1: 1. RabindranathTagore:(a)Nature of Man:The Finite Aspect of Man,the Infinite Aspect of Man,(b)Nature of Religion and (c) Surplus in man</p> <p>SEC- 2 Unit1: 1. Definition and Nature of Human Rights</p>	12 4	<p>Theory DSE-1B: Tarkasaṁgraha with Dīpikā Unit1: a. Dravya</p> <p>GE- 2: Western Philosophy Unit1&2: 1. Metaphysics :Nature of Metaphysics, Elimination of Metaphysics 2. Realism :Naïve Realism, Scientific Realism, Representative Realism</p>	17 12
Feb	<p>Theory CC-1B: Unit 3&4: 3. Idealism: Subjective Idealism, Objective Idealism</p>	9	<p>Theory CC-1D: Unit2: 2. Swami Vivekananda: (a)Practical Vedānta and (b)Universal Religion</p>	10	<p>Theory DSE-1B Unit1: Guna</p> <p>GE- 2</p>	15

	4. Critical Theory of Kant		<p>SEC- 2 Unit2:</p> <p>2. The Idea of Human Rights: Its Origins and Historical Developments during Ancient period</p>	5	<p>Unit3:</p> <p>3. Idealism: Subjective Idealism, Objective Idealism</p>	12
Mar	<p>Theory CC-1B: Unit-5:</p> <p>5. Theories of Causation :Regularity Theory and Entailment Theory</p>	7	<p>Theory CC-1D: Unit3:</p> <p>3. Sri Aurobindo: (a)Nature of Reality,(b)Human Evolution–its different stages,(c)Integral Yoga</p> <p>SEC- 2 Unit2:</p> <p>2. The Idea of Human Rights: Modern period and Contemporary period</p>	11 4	<p>Theory DSE-1B</p> <p>Unit1: karma</p> <p>GE- 2 Unit4&5:</p> <p>4. Critical Theory of Kant 5. Theories of Causation :Regularity Theory and Entailment Theory</p>	17 12
Apr	<p>Theory CC-1B: Unit-6:</p> <p>6. Substance :Views of Descartes, Spinoza, Locke and Berkeley</p>	8	<p>Theory CC-1D: Unit4:</p> <p>4. S. Radhakrishnan: (a)Nature of Man,(b)Nature of Religious Experience</p> <p>SEC- 2 Unit3:</p> <p>3. The Idea of Natural Law and Natural Rights: Thomas Hobbes and John Locke</p>	10 5	<p>Theory DSE-1B</p> <p>Unit1: samanya</p> <p>GE- 2 Unit6:</p> <p>6. Substance :Views of Descartes, Spinoza, Locke and Berkeley</p>	16 10
May	<p>Theory CC-1B: Unit-7:</p> <p>7. Relation between Mind and Body: Interactionism and Parallelism</p>	8	<p>Theory CC- 1D:</p> <p>5. Md. Iqbal:(a)Nature of the Self,(b) Nature of the World,(c) Nature of God</p> <p>SEC- 2</p> <p>4. Natural Right, Fundamental Right and Human Right</p>	12 4	<p>Theory DSE-1B</p> <p>Unit1: Visesa, samabaya</p> <p>GE- 2 Unit7:</p> <p>7. Relation between Mind and Body: Interactionism and Parallelism</p>	16 12
June	<p>Theory CC-1B: Unit-8:</p> <p>8. Theories of</p>	7	<p>Theory CC- 1D: Unit6:</p> <p>6. Mahatma Gandhi: (a)God and</p>	11	<p>Theory DSE-1B</p> <p>Unit1: Avaba</p>	12

	Evolution :Mechanistic and Emergent		Truth and(b)Ahimsa SEC- 2 Unit5: 5. Preamble, Fundamental Rights and Duties (Indian Constitution)	5	GE- 2 Unit8: 8. Theories of Evolution :Mechanistic and Emergent	11
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Head of the Department,
Department of Philosophy,
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**SURI VIDYASAGGAR COLLEGE
DEPARTMENT OF POLITICAL SCIENCE**

**TEACHING PLAN OF BIPLAB MANDAL
Political Science (General) (July 2018 – June 2019)**

	SEMESTER-I	No. of Lecture	SEMESTER-III	No. of Lecture	Old Part –III	No. of Lecture
July-December, 2018	CC1/GE-1: Western Political Thought	30	CC-3/GE-3: Indian Political Thought	30	Contemporary Issues in India	30
	Chapter-4:Rousseau: Concept of Sovereignty	10	Chapter -5: Gandhi: Satyagraha, Trusteeship.	10	Chapter -6 :Gender and politics-state of women’s empowermentin India	10
	Background and Life	2	About Gandhi	4		
	Concept of state of Nature	2	Satyagraha	3		
	Theory of Social Contract.	2	Trusteeship	3	Chapter - 7 :India’s foreign Policy-basic tenets	10
	Rousseaus Theory of Sovereignty.	3				
	Evaluation	1	Chapter-6: Tagore;State,Society and Nation.	11	Chapter-8:Regional Co-operation;SAARC-objectives,problems and prospects	10
			Introduction	1		
	Chapter -5: Marx and Engels: Dialectical and Historical Materialism; Revolution; Lenin: Imperialism	10	State and Society	3		
	Introduction to Marx and Engels	1	Concept of Nationalism	3		
	About Marxism	2	Concept of Internationalism	2		
	Dialectical Materialism	1	Evaluation of Political Ideas of Rabindranath.	2		
	Historical Materialism	2				
	Revolution	1	Chapter-7: Ambedkar:Social Justice.	9		
	Lenin: Imperialism	3	About Ambedkar	4		
Chapter-6:J.S Mill:Concept of Liberty	10	Social and Political Ideas	5			
		SEC-1: Electoral Practice and Procedures in India	20			
		Chapter-1 Electoral Process in India-	5			

July-December, 2018	Introduction,Background,Method of Study	2	Method of Conducting General(Parliamentary)elections and elections to state assemblies			
	Mill and Utilitarianism,Liberalism	2				
	Mills Ideas on Liberty	4		Chapter-2 Election Commission in India: Composition, Structure and functions.	10	
	Views on Representative Government	2	Introduction			
			Composition			
			Independence and	3		
			Neutrality	1		
			Functions	1		
				3		

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	SEMESTER-II	No. of Lecture	SEMESTER-IV	No. of Lecture	Old part- III	No. of Lecture
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January - June, 2019	CC2/GE-2: Political Theory	30	CC-4: Indian Government and Politics	30	Contemporary Issues in India	30
	Chapter - 4: Liberalism and Neo-Liberalism	12	Chapter-1: The Constituent Assembly: its Composition and Role.	10	Chapter-9: Nuclear Arms Control- NPT and CTBT – India's Position	15
	Definition of Liberalism	1	The Preamble and its Significance	1		
	Evolution of Liberalism	2	Introduction	1		
	Different types of Liberalism	3	Demand for the Establishment of a Constituent Assembly	2		
	Features of Liberalism	2	Composition	1		
	Neo-Liberalism	2	Nature	1		
	Globalization: as an expansion of Liberalism	2	Role of the Constituent Assembly in Framing the Constitution	1		
	Chapter -5: Theories of State: Idealist Liberal	10	b. Nature of the Preamble	2		
	Idealist	1	The Preamble to the Constitution of India	1		
	Origins of the Theory	2	Significance of the Preamble	2		
	Nature of the State	2		1		
	Criticisms of the Idealist Theory	2	Chapter - 2: (a) Fundamental Right and Duties (b) Directive Principles of State Policy	10		
	Liberal	2	Concept of Fundamental Right	1		
	Original Version	2	Right to Equality	2		
	Revised Version of the Liberal Theory	2	Right to Freedom	2		
	Critical Evaluation	1	Right against Exploitation	1		
		Right to Freedom of Religion.	1			
Chapter-6: Political parties and Pressure groups: Concept and role	8	Constitutional Remedies.	3			
		Fundamental Duties of the Directive Principles of State Policy	5			
		Indian Citizens.	1			
		Chapter - 3: Nature of Indian Federalism: Centre-State relations- Legislative, Administrative and Financial	5			
		Introduction	1			
		Nature of the Federation	1			
		Nature of the Indian Federation	1			
		The Scheme of Division of Power	1			
		Power Distributions of Legislative, Administrative, Financial	1			
		Between Centre and States.	2			
		Recent Trends.	2			
		Chapter-4: Law-making Procedure	5			
				Chapter – 10: Globalization : role of the IMF, World Bank and WTO with special reference to India	15	

January - June, 2019	Meaning and Nature of Parties	1	Definition and Classification of Bill	1		
	Meaning and Nature of Pressure Groups	1	Passing of Ordinary Bill			
	Distinction between Pressure Groups and Political Parties.	2	Money Bill and Financial Bill .			
	Role of Political Parties and Pressure Groups.	2	the Speaker Speaker Power and Functions Position			
		2	Procedure of Constitutional Amendment Necessity Procedure Method			
			SEC-2:Environmental Awareness	15		
			Chapter-1:Environmentalism:Meaning,Key Related Ideas,Significance	8		
			Chapter-2:Collective action Problems and Enviornmental Challenges in Developing Countries	7		

SURI VIDYASAGGAR COLLEGE
DEPARTMENT OF POLITICAL SCIENCE
TEACHING PLAN OF SK ABDUR ARIF
Political Science (General) (July 2018 – June 2019)

	SEMESTER-I	No. of Lecture	SEMESTER-III	No. of Lecture	OLD PART- III (1+1+1 PATTERN)	No. of Lecture
<i>July-December 2018</i>	CC-1A: Western Political Thought	(30)	CC-1C: Indian Political Thought	(36)	PAPER – IV	
	Chapter-1: Ancient Greek Thought: Features	10	Chapter-1.Ancient Indian Political Thought : Features ; Kautilya’s theory of Saptanga and the concept of ‘Dandaniti’.	12	CONTEMPORARY ISSUES IN INDIA	(26)
	Introduction	4	Introduction	2	CHAPTER 1- Secularism and communalism- Introduction	1
	About Greek politics	2	Source and features of Indian political thought	5	Meaning of secularism and communalism	2
	Main features	4	Kautilya’s theory of saptanga	3	Differences	2
	Chapter-2:Medieval Political Thought: Main features:	10	‘Dandaniti’	2	Concepts in Indian context	2
	Introduction	2	Chapter-2: Main features of medieval Muslim Political Thought. Introduction	6	Recent trends in india	3
	Clash between church and king	3	Main features	4	CHAPTER 2- Caste and politics in india- politics of reservation- Introduction	1
	Main features	3	Chapter-3: Machiavelli: Concept of statecraft and power politics	10	Definition of caste	2
	Two sword theory	2	Introduction	1	Role in politics	3
			Chapter-3: Rammohan Roy :		What is reservation?	2
					Politics of reservation in india	2
					CHAPTER 3- Human rights in india- violence against women and	

<i>July- December 2018</i>	Concept of state	4	perception of British		children - remedial	
	Concept of power	3	Colonial Rule and		measures	1
	Separation of Politics and Religion	2	their role as	6	Introduction	2
			Modernizers.		Definations	
			Introduction	1	Human rights in Indian context	3
			Perception of British Rule	2		
			Role as Modernizers	3		
			Chapter-4: Bankim, Vivekananda: Nationalism	12		
			About Bankim	1		
			Nationalism of Bankim	4		
		About Vivekananda	1			
		Nationalism of Vivekananda	4			
		Man making theory of vivekananda	2			
		SEC-1: Electoral Practice and Procedures in India	(10)			
		Chapter-4:Role of State Election Commission	5			
		Chapter-5:Electoral Reforms in India	5			

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SURI VIDYASAGGAR COLLEGE
DEPARTMENT OF POLITICAL SCIENCE
TEACHING PLAN OF SK ABDUR ARIF
Political Science (General) (July 2018 – June 2019)

	SEMESTER-II	No. of Lecture	SEMESTER-IV	No. of Lecture	OLD PART III (1+1+1 PATTERN)	No. of Lecture
January- June 2019	CC-1B: Political Theory	(29)	CC-1D: Indian Government and Politics	(35)	- PAPER – IV CONTEMPORARY ISSUES IN INDIA	(25)
	Chapter 1: The meaning of Politics and Political Theory; Importance of Political Theory; Different Approaches: (a) Traditional (b) Behavioural and Post-Behavioural (c) Marxist Chapter 2- The Concept of Sovereignty: (a) Monistic (b) Pluralist (c) Popular Chapter 3- Liberty and Equality:	12 2 2 2	Chapter 5. Union Executive: President and Prime Minister: Powers and functions; Governor and Chief Minister: Powers and function Chapter 6. Judiciary: Supreme Court and High Courts Composition Functions; Chapter 7. Party System in India: Features Trends; Coalition Governments 8. Electoral Process: Election Commission	8 7 3 3 2 2 2	violence against women and children in india remedial measures CHAPTER 4-Environments and politics in india CHAPTER 5- Political corruption in india- role of media and civil society-right to information	5 2 8 10

January- June 2019	Meaning and their Inter-relationship	2	Introduction	2		
	Introduction		Composition and Functions;			
	Meaning of Liberty and Equality	2	Electoral Reforms	4		
	Types of Liberty and Equality	4		2		
	Inter-relationship of Liberty and Equality	3	SEC-2 Environmental Awareness			
			Chapter-3. Major Environmental Movements in India:	(16)		
			Introduction			
			Chipko	2		
			NarmadaBanchao	2		
			4. Regional and international efforts to address climate change.	2		
			Chapter-5: Green Governance:	5		
			Sustainable Human Development	2		
				3		

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THEORY (CC-1)

2018-2019

SEM -1 (JULY - DECEMBER)

Core T1 –Non-Chordates I	CLASS	TEACHER
Unit 1: Basics of Animal Classification Definitions: Classification, Systematics and Taxonomy; Taxonomic Hierarchy, Taxonomic types. Codes of Zoological Nomenclature; Principle of priority; Synonymy and Homonymy; Five kingdom concept of classification (Whittaker)	4	CM
Unit 2: Protista and Metazoa Protozoa General characteristics and Classification up to phylum (according to Levine et. al., 1980) Locomotion in <i>Euglena</i> , <i>Paramecium</i> and <i>Amoeba</i> ; Conjugation in <i>Paramecium</i> . Life cycle and pathogenicity of <i>Plasmodium vivax</i> and <i>Entamoeba histolytica</i> Metazoa Evolution of symmetry and segmentation of Metazoa	15	UKS
Unit 3: Porifera General characteristics and Classification up to orders (after Hyman, 1951); Canal system and spicules in sponges	6	DM
Unit 4: Cnidaria General characteristics and Classification up to orders. Metagenesis in <i>Obelia</i> Polymorphism in Cnidaria	10	DM
Unit 5: Ctenophora General characteristics	2	UKS
Unit 6: Platyhelminthes General characteristics and Classification up to classes Lifecycle and pathogenicity and control measures of <i>Fasciola hepatica</i> and <i>Taenia solium</i>	6	CM
Unit 7: Nematoda General characteristics and Classification up to classes Life cycle, and pathogenicity and control measures of <i>Ascaris lumbricoides</i> and <i>Wuchereria bancrofti</i>	7	CM

PRACTICAL (CC-1)

2018-2019

SEM -1 (JULY – DECEMBER)

Non- Chordates I	CLASS	TEACHER
Preparation of stained whole mount of <i>Euglena</i> , <i>Amoeba</i> and <i>Paramecium</i>	3	UKS
Spot Identification of <i>Amoeba</i> , <i>Euglena</i> , <i>Entamoeba</i> , <i>Opalina</i> , <i>Paramecium</i> , <i>Plasmodium vivax</i> and <i>Plasmodium falciparum</i> (from the prepared slides)	3	UKS
Spot Identification of <i>Sycon</i> , Neptune's Cup, <i>Obelia</i> , <i>Physalia</i> , <i>Millepora</i> , <i>Aurelia</i> , <i>Tubipora</i> , <i>Corallium</i> , <i>Alcyonium</i> , <i>Gorgonia</i> , <i>Metridium</i> , <i>Pennatula</i> , <i>Fungia</i> , <i>Meandrina</i> , <i>Madrepora</i>	4	DM
Spot Identification and significance of adult <i>Fasciola hepatica</i> , <i>Taenia solium</i> and <i>Ascaris lumbricoides</i> .	3	UKS
Staining/mounting of any protozoa/helminth from gut of cockroach	4	DM

THEORY (CC-2)

2018-2019

SEM -1 (JULY - DECEMBER)

Core T2–Ecology	CLASS	TEACHER
Unit 1: Introduction to Ecology History of ecology, Autecology and synecology, Levels of organization, Laws of limiting factors, Study of Physical factors, The Biosphere	4	AD
Unit 2: Population Unitary and Modular populations Unique and group attributes of population: Demographic factors, life tables, fecundity tables, survivorship curves, dispersal and dispersion. Geometric, exponential and logistic growth, equation and patterns, and K strategies. Population regulation, density dependent and independent factors Population Interactions, Gause's Principle with laboratory and field examples, Lotka-Volterra equation for competition.	20	TR
Unit 3: Community Community characteristics: species diversity, abundance, , dominance, richness, Vertical stratification, Ecotone and edge effect. succession with one example	11	AD
Unit 4: Ecosystem Types of ecosystem with an example in detail, Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies Nutrient and biogeochemical cycle with an example of Nitrogen cycle Human modified ecosystem	10	DRB
Unit 5: Applied Ecology Wildlife Conservation (in-situ and ex-situ conservation). Management strategies for tiger conservation; Wild life protection act (1972)	5	DRB

PRACTICAL (CC-2)

2018-2019

SEM -1 (JULY – DECEMBER)

Ecology	CLASS	TEACHER
Study of life tables and plotting of survivorship curves of different types from the hypothetical/real data provided	5	AD
Determination of population density in a natural/hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index for the same community	5	AD
Study of an aquatic ecosystem: Phytoplankton and zooplankton, Measurement of area, temperature, determination of pH and free CO ₂	5	DRB
Report on a visit to National Park/Biodiversity Park/Wild life sanctuary/Biodiversity Centre/ Any Museum/Sea shore	5	DRB

THEORY (CC-3)

2018-2019

SEM -II (JANUARY-JUNE)

Non- Chordates II	CLASS	TEACHER
Unit1:Introduction Evolution of coelom and metamerism	2	CM
Unit2: Annelida General characteristics and Classification up to order Excretion in Annelida through nephridia. Metamerism in Annelida.	10	UKS
Unit3: Arthropoda General characteristic sand Classification up to subclass Vision in Insecta Respiration in Arthropoda (Gills in prawn and trachea in cockroach) Metamorphosis in Lepidopteran Insects. Social life in termite	16	DM
Unit4: Onychophora General characteristics and Evolutionary significance	2	CM
Unit5: Mollusca General characteristics and Classification up to classes Nervous system and torsion in Gastropoda Feeding and respiration in <i>Pila</i> sp	10	UKS
Unit6: Echinodermata General characteristics and Classification up to orders Water-vascular system in Asteroidea Larval forms in Echinodermata Affinities with Chordates	8	CM
Unit7: Hemichordata General characteristics of phylum Hemichordata. Relationship with non-chordates and chordates	2	CM

PRACTICAL (CC-3)

2018-2019

SEM -II (JANUARY-JUNE)

PRACTICAL Non-Chordates II	CLASS	TEACHER
Spot identification of following specimens (based on specimen characters): Annelids- <i>Aphrodite, Nereis, Heteronereis, Sabella, Chaetopterus, Pheretima, Hirudinaria</i> Arthropods- <i>Carcinoscorpius, Palamnaeus, Palaemon, Daphnia, Balanus, Sacculina, Cancer,</i> <i>Eupagurus, Scolopendra, Julus, Bombyx, Periplaneta, Odontotermes and Apis</i> Onychophora- <i>Peripatus</i> Molluscs - <i>Chiton, Dentalium, Pila, Doris, Helix, Lamellidens, Ostrea, Pinctada, Sepia, Octopus, Nautilus</i> Echinoderms- <i>Pentaceros / Asterias, Ophiura, Clypeaster, Echinus, Cucumaria and Antedon</i> Hemichordates - <i>Balanoglossus</i>	10	DM
Study of digestive system, septal nephridia and pharyngeal nephridia of earthworm using model and chart	4	UKS
T.S. through pharynx, gizzard, and intestine at typhlosolar region of earthworm	2	UKS
Mount of mouth parts and study of digestive system and nervous system of <i>Periplaneta</i> To submit a Project Report on any related topic on larval forms (arthropods, mollusc and arthropoda)	4	UKS

THEORY (CC-4)

2018-2019

SEM -II (JANUARY-JUNE)

Cell Biology	CLASS	TEACHER
Unit1: Overview of Cells Basic structure of Prokaryotic and Eukaryotic cells, Viruses, Viroid, Prion and Mycoplasma	2	AD
Unit2:PlasmaMembrane Ultra structure and composition of Plasma membrane: Fluid mosaic model Transport across membrane: Active and Passive transport, Facilitated transport Cell junctions: Tight junctions, Gap junctions, Desmosomes	6	AD
Unit3:Cytoplasmic organelles I Structure and Functions: Endoplasmic Reticulum, Golgi Apparatus, Lysosomes. Protein sorting and mechanisms of vesicular transport	5	DRB
Unit4:Cytoplasmic organelles II Mitochondria: Structure, Semi-autonomous nature, Endosymbiotic hypothesis Mitochondrial Respiratory Chain, Chemi- osmotic hypothesis. Structure and Functions of Peroxisome and Centrosome	6	DRB
Unit5:Cytoskeleton Type, structure and functions of cytoskeleton Accessory proteins of microfilament µtubule A brief idea about molecular motors	5	DRB
Unit6:Nucleus Structure of Nucleus: Nuclear envelope, nuclear pore complex, Nucleolus. Chromatin: Euchromatin and Heterochromatin and packaging (nucleosome)	8	AD
Unit7:Cell Division. Cell cycle and its regulation, Cancer (Concept of oncogenes and tumor suppressor genes with special referencetop53, Retinoblastoma and Ras and APC. Mitosis and Meiosis: Basic process and their significance	8	TR
Unit8:Cell Signaling Cell signalling transduction pathways; Types of signalling molecules and receptors GPCR and Role of second messenger (cAMP) Extracellular matrix Cell interactions Apoptosis and Necrosis	8	TR

PRACTICAL (CC-4)

2018-2019

SEM -II (JANUARY-JUNE)

CELL BIOLOGY	CLASS	TEACHER
Preparation of temporary stained squash of onion root tip to study various stages of mitosis . Squash preparation of grasshopper testis and study of the various stages of meiosis. .	10	AD
Preparation of permanent slide to show the presence of Barr body in human female blood cells/cheek cells.	6	TR
Study of cell viability by Trypan Blue staining from onion root tip/ blood cell.	4	TR

THEORY (CC-5)

2018-2019

SEM -III (JULY- DECEMBER)

CHORDATES	CLASS	TEACHER
Unit 1: Introduction to Chordates General characteristics and outline classification of Phylum Chordata	2	DP
Unit 2: Protochordata. General characteristics and classification of sub-phylum Urochordata and Cephalochordate up to Classes. Retrogressive metamorphosis in <i>Ascidia</i> . Chordate Features and Feeding in <i>Branchiostoma</i>	6	DM
Unit 3: Origin of Chordata .Dipleurula concept and the Echinoderm theory of origin of chordates Advanced features of vertebrates over Protochordata	2	DP
Unit 4: Agnatha General characteristics and classification of cyclostomes up to order	2	DP
Unit 5: Pisces General characteristics and classification of Chondrichthyes and Osteichthyes up to Subclasses Accessory respiratory organ, migration and parental caring fishes Swim bladder in fishes.	6	DP
Unit 6: Amphibia General characteristics and classification upto living Orders. Metamorphosis and parental care in Amphibia	6	A DEY
Unit 7: Reptilia General characteristics and classification up to living Orders. Poison apparatus and Biting mechanism in Snake	8	UKS
Unit 8: Aves General characteristics and classification up to Sub-Classes Exoskeleton and migration in Birds Principles and aerodynamics off flight	8	A DEY
Unit 9: Mammals General characters and classification up to living orders Affinities of Prototheria Exoskeleton derivatives of mammals Adaptive radiation in mammals with reference to locomotory appendages Echolocation in Micro-chiropterans and Cetaceans	8	UKS
Unit 10: Zoogeography Zoogeographical realms, Plate tectonic and Continental drift theory, distribution of birds and mammals in different realms	2	DP

PRACTICAL (CC-5)

2018-2019

SEM -III (JULY- DECEMBER)

CELL BIOLOGY	CLASS	TEACHER
Spot identification of a. Protochordata : <i>Balanoglossus, Herdmania, Branchiostoma</i> b. Agnatha: <i>Petromyzon, Myxine</i> c. Fishes: <i>Scoliodon, Sphyrna, Pristis, Torpedo, Chimaera, Mystus, Heteropneustes, Labeo, Catla, Cirrhinus, Hypophthalmichthys, Cyprinus, Ctenopharyngodon, Exocoetus, Echeneis, Anguilla, Hippocampus, Tetradon/ Diodon, Anabas, Clarias</i> d. Amphibia: <i>Necturus, Bufo, Hyla, Alytes, Axolotl larva, Tylotriton</i> e. Reptilia: <i>Chelone, Trionyx, Hemidactylus, Varanus, Uromastix, Mabuya, Draco, Bungarus, Vipera, Naja, Hydrophis</i> f. Mammalia: Bat (Insectivorous and Frugivorous), <i>Funambulus</i>	10	DP
Key for Identification of poisonous and non-poisonous snake	2	DM
. Mounting of Pecten from Fowl head	4	DM
Dissection of brain and pituitary of any major carp .	4	DM
Power point presentation on study of any two animals from two different classes by students (may be included if dissections not permitted). Power point submission & demonstration through laptop.	4	DP

THEORY (CC-6)

2018-2019

SEM -III (JULY- DECEMBER)

Animal Physiology: Controlling& Coordinating Systems	CLASS	TEACHER
Unit1:Tissues Structure, location, classification and functions of epithelial tissue, connective tissue, muscular tissue and nervous tissue	4	CM
Unit2:Bone and Cartilage Structure and types of bones and cartilages, Ossification	4	AD
Unit3:NervousSystem Structure of neuron, resting membrane potential, Origin of action potential and its propagation across the myelinated and unmyelinated nerve fibers. Types of synapse, Synaptic transmission and Neuro-muscular junction; Reflex action and its types	10	A DEY
Unit4:Muscular system Histology of different types of muscle; Ultrastructure of skeletal muscle; Molecular and chemical basis of muscle contraction; Characteristics of muscle fibre	10	CM
Unit5:ReproductiveSystem Histology of testis and ovary Physiology of Reproduction (Estrus and Menstrual cycle)	6	CM
Unit6:Endocrine System Histology and function of pituitary, thyroid, pancreas and adrenal Classification of hormones; Mechanism of Hormone action: Signal transduction pathways for Steroidal and Nonsteroidal hormones Hypothalamus (neuroendocrine gland) – principal nuclei involved in neuroendocrine control of anterior pituitary and endocrine system Placental hormones	16	AD

PRACTICAL (CC-6)

2018-2019

SEM -III (JULY- DECEMBER)

Animal Physiology: Controlling &Coordinating Systems	CLASS	TEACHER
Recording of simple muscle twitch with electrical stimulation(or Virtual	2	UKS
Demonstration of the unconditioned reflex action(Deep tendon reflex such as knee jerk reflex)	4	CM
Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres	6	CM
Identification of permanent slides of Mammalian Cartilage, Bone, Pituitary, Liver, Kidney,Intestine, Lung, Pancreas, Testis, Ovary, Adrenal, Thyroid	4	UKS
Microtomy: Preparation of permanent slide of any five mammalian(Goat/white rat)tissues	8	UKS

THEORY (CC-7)
2018-2019
SEM -III (JULY- DECEMBER)

Fundamentals of Biochemistry	CLASS	TEACHER
Unit1:Carbohydrates .Structure and Biological importance: Monosaccharides, Disaccharides, Polysaccharides;Derivatives of Monosachharides .Carbohydrate metabolism: Glycolysis, Citric acid cycle, Pentose phosphate pathway,Gluconeogenesis	8	TR
Unit2:Lipids Structure and Significance: Physiologically important saturated and unsaturated fatty acids, Tri- acyl glycerols, Phospholipids, Sphingolipid, Glycolipids, Steroids, Eicosanoids and terpinoids. . Lipid metabolism: β -oxidation of fatty acids; Fatty acid biosynthesis	7	DRB
Unit3:Proteins . Amino acids : Structure, Classification, General and Electrochemical properties of α -amino acids; Physiological importance of essential and non-essential amino acids . Proteins: Bonds stabilizing protein structure; Levels of organization . Protein metabolism: Transamination, Deamination, Urea cycle, Fate of C-skeleton of Glucogenic and Ketogenic amino acids	10	TR
Unit4:NucleicAcids Structure: Purines and pyrimidines, Nucleosides, Nucleotides, Nucleic acids . Types of DNA and RNA, Complementarity of DNA, Hypo-Hyper chromaticity of DNA . Basic concept of nucleotide metabolism	10	DRB
Unit5:Enzymes . Nomenclature and classification; Cofactors; Specificity of enzyme action; Isozymes . Mechanism of enzyme action; Enzyme kinetics; Derivation of Michaelis- Menten Equation, Lineweaver-Burk plot; Factors affecting rate of enzyme- catalyzed reactions; Enzyme inhibition; Allosteric enzymes and their Factors affecting rate of enzyme-catalyzed reactions; . Enzyme inhibition; Allosteric enzymes and their kinetics; Strategy of enzyme action- . Catalytic and Regulatory	13	DRB, A. Dey
Unit 6: Oxidative phosphorylation	2	DRB

PRACTICAL (CC-7)

2018-2019

SEM -III (JULY- DECEMBER)

Fundamentals of Biochemistry	CLASS	TEACHER
Qualitative tests of functional groups in carbohydrates (Benedict's test), proteins (Biuret's test) and lipids (Saponification number).	4	DRB
Paper chromatography of amino acids	4	TR
Quantitative estimation of protein by Lowry Method	4	BPR
Demonstration of protein separation by SDS-PAGE	4	DM
To study the enzymatic activity of Salivary amylase and Catalase in <i>Cajanus cajan</i>	6	DRB

THEORY (SEC-1)
2018-2019
SEM –III (JULY- DECEMBER)

Apiculture	CLASS	TEACHER
Unit1: Biology of Bees . History, Classification and Biology of Honey Bees . Social Organization of Bee Colony	2	DM
Unit2: Rearing of Bees Artificial Bee rearing (Apiary), Beehives–Newton and Langstroth . Bee Pasturage . Selection of Bee Species for Apiculture . Bee Keeping Equipment . Methods of Extraction of Honey (Indigenous and Modern)	10	DM
Unit3: Diseases and Enemies Bee Diseases and Enemies, Control and Preventive measures	5	CM
Unit4: Bee Economy Products of Apiculture Industry and its Uses (Honey, Bees Wax, Propolis), Pollen etc	2	CM
Unit5: Entrepreneurship in Apiculture Bee Keeping Industry–Recent Efforts, Modern Methods in employing artificial Beehives for cross pollination in horticultural gardens	6	CM

THEORY (CC-8)

2018-2019

SEM -IV (JANUARY-JUNE)

Comparative Anatomy of Vertebrates	CLASS	TEACHER
Unit1: Integumentary System Structure, function and derivatives of integument in amphibian, birds and mammals	6	CM
Unit2: Skeletal System Overview of axial and appendicular skeleton; Jaw suspension; Visceral arches	6	CM
Unit3: Digestive System . Comparative anatomy of stomach. . Dentition in mammals	8	A.Dey
Unit4: Respiratory System Respiratory organs in fish, amphibian, birds and mammals	6	A.Dey
Unit5: Circulatory System General plan of circulation, Comparative account of heart and aortic arches	8	CM
Unit6: Urinogenital System . Succession of kidney, . Evolution of urino-genital ducts, . Types of mammalian uteri	6	DP
Unit7: Nervous System . Comparative account of brain, . Cranial nerves in mammals	6	DP
Unit8: Sense Organs . Classification of receptors, . Brief account of auditory receptors invertebrate	4	A.Dey

PRACTICAL (CC-8)

2018-2019

SEM -IV (JANUARY-JUNE)

Comparative Anatomy of Vertebrates	CLASS	TEACHER
Mounting of cycloid and ctenoid scales	6	CM
Study of disarticulated skeleton of Toad, Pigeon and Guineapig	6	CM
Demonstration of Carapace and plastron of turtle from model/chart	4	A.Dey
Identification of mammalian skulls:One herbivorous(Guineapig) and one carnivorous animal (Dog)	4	A.Dey
Study and Dissection of Afferent arterial system, brain, pituitary in Carp	4	CM

THEORY (CC-9)
2018-2019
SEM -IV (JANUARY-JUNE)

Animal Physiology: Life Sustaining Systems	CLASS	TEACHER
Unit1:Physiology of Digestion . Structural organization and functions of Gastrointestinal tract and Associatedglands; . Mechanical and chemical digestion of food, . Absorption of Carbohydrates, Lipids, Proteins and Nucleic Acids; . Digestive enzymes	8	TR
Unit2:Physiology of Respiration . Mechanism of Respiration, . Respiratory volumes and capacities, . Transport of Oxygen and Carbon dioxide in blood ,Dissociation curves and the factors influencing it, . Respiratory pigments. . Carbon monoxide poisonin	8	TR
Unit3:Physiology of Circulation . Components of Blood and their functions ;Structure and functions of haemoglobin . Homeostasis; Blood clotting system, Fibrinolytic system . Haemopoiesis; Basic steps and its regulation . Blood groups; ABO and Rh factor	12	AD
Unit4:Physiology of Heart . Structure of mammalian heart, . Coronary Circulation, . Structure and working of conducting myocardial fibres, . Origin and conduction of cardiac impulses . Cardiac Cycle and cardiac output . Blood pressure and its regulation	8	AD
Unit5:Thermoregulation&Osmoregulation . Physiological classification based on thermal biology. . Thermal biology of endotherms . Osmoregulation in aquatic vertebrates . External osmoregulatory organs invertebrates	6	UKS
Unit6:RenalPhysiology	8	UKS

PRACTICAL (CC-9)
2018-2019
SEM -IV (JANUARY-JUNE)

Animal Physiology: Life Sustaining Systems	CLASS	TEACHER
Determination of ABO Blood group	4	TR
Enumeration of red blood cells and white blood cells using haemocytometer	6	TR
Estimation of haemoglobin using Sahli's haemoglobinometer	6	UKS
Preparation of haem in crystals	4	UKS
Recording of blood pressure using a sphygmomanometer	4	UKS

THEORY (CC-10)
2018-2019
SEM -IV (JANUARY-JUNE)

Immunology	CLASS	TEACHER
Unit1: Overview of Immune System . Basic concepts of health and diseases, . Historical perspective of Immunology, . Cells and organs of the Immune system	2	DM
Unit2:Innate and Adaptive Immunity . Anatomical barriers, . Inflammation, . Cell and molecules involved in innate immunity, Adaptive immunity (Cell mediated and humoral).	8	DM
Unit3:Antigens . Antigenicity and immunogenicity, Immunogens, Adjuvants and haptens, . Factors influencing immunogenicity, . Band T-Cell epitopes	4	DRB
Unit4:Immunoglobulins . Structure and functions of different classes of immunoglobulins, . Antigen- antibody interactions, . Immunoassays (ELISA and RIA), . Hybridoma technology, Monoclonal antibody production	8	DRB
Unit5:MajorHistocompatibilityComplex . Structure and functions of MHC molecules. . Structure of Tcell Receptor and its signalling, . Tcell development &selection	6	DM
Unit6:Cytokines Types, properties and functions of cytokines.	2	DRB
Unit7:ComplementSystem Components and pathways of complement activation	6	DM
Unit8:Hypersensitivity Gell and Coombs' classification and brief description of various types of hypersensitivities	4	DM
Unit9:Immunology of diseases Malaria, Filariasis, Dengue and Tuberculosis	6	DRB
Unit10:Vaccines Various types of vaccines. Active & passive immunization (Artificial and natural).	4	DRB

PRACTICAL (CC-10)
2018-2019
SEM -IV (JANUARY-JUNE)

Immunology	CLASS	TEACHER
Demonstration of lymphoid organs in human through model/ photograph.	2	DM
Histological study of spleen, thymus and lymph nodes through slides/photographs	4	DM
Preparation of stained blood film to study various types of blood cells	4	DM
Total count (TC) & Differential count (DC) of WBC	6	DRB
Demonstration of ELISA by available teaching kit	4	DRB

THEORY (SEC-2)
2018-2019
SEM -IV (JANUARY-JUNE)

Aquarium fish keeping	CLASS	TEACHER
Unit1: Introduction to Aquarium Fish Keeping	2	DM
Unit2: Biology of Aquarium Fishes Common characters and sexual dimorphism of Freshwater and Marine Aquarium fishes such as Guppy, Molly, Swordtail, Goldfish, Angel fish ,Bluemorph, Anemone fish and Butterfly fish	10	DM
Unit3:Food and feeding of Aquarium fishes . Use of live fish feed organisms. . Preparation and composition of formulated fish feeds, . Aquarium fish as larval predator	7	CM
Unit 4: Fish Transportation Live fish transport- Fish handling, packing and forwarding techniques.	3	CM
Unit5: Maintenance of Aquarium General Aquarium maintenance – budget for setting up an Aquarium Fish Farm as a Cottage Industry	3	CM

THEORY (CC-11)
2019-2020
SEM -V (JULY- DECEMBER)

Molecular biology	CLASS	TEACHER
Unit1:Nucleic Acids Salient features of DNA and RNA Watson and Crick Model of DNA	3	UKS
Unit2:DNA Replication mechanism of DNA Replication in Prokaryotes, Semi-conservative, bidirectional and discontinuous Replication, RNA priming, 2. Replication of telomeres	9	UKS
Unit3:Transcription Mechanism of Transcription in prokaryotes and eukaryotes, Transcription factors, Difference between prokaryotic and eukaryotic transcription	7	UKS
Unit4:Translation Mechanism of protein synthesis in prokaryotes, Ribosome structure and assembly in prokaryotes, fidelity of protein synthesis, aminoacyl tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain; Genetic code, Degeneracy of the genetic code and Wobble Hypothesis; Inhibitors of protein synthesis; Difference between prokaryotic and eukaryotic translation	6	CM
Unit5:PostTranscriptionalModificationsandProcessingofEukaryoticRNA Capping and Poly A tail formation in mRNA; Split genes: concept of introns and exons, splicing mechanism, alternative splicing, Exon shuffling, and RNA editing, Processing of tRNA	8	CM
Unit6:Gene Regulation Regulation of Transcription in prokaryotes: <i>lac</i> operon and <i>trp</i> operon; Regulation of Transcription in eukaryotes: Activators, enhancers, silencer, repressors, miRNA mediated gene silencing, Genetic imprinting	7	CM
Unit7:DNA Repair Mechanisms	4	CM
Unit8: Principles of Molecular Techniques	6	UKS

PRACTICAL (CC-11)
2019-2020
SEM -V (JULY-DECEMBER)

Molecular Biology	CLASS	TEACHER
Preparation of polytene chromosome from Diptera (<i>Chironomus/ Drosophila/ Mosquito larva</i>)	4	UKS
Identification of polytene and lampbrush chromosome from photograph	2	UKS
Isolation and quantification of genomic DNA using spectrophotometer (A260 measurement) (demonstration only)	2	UKS
Demonstration of agarose gel electrophoresis for DNA	4	CM
Study and interpretation of electron micrographs/ photographs showing a) DNA replication b) Transcription c) Split genes	4	CM
Preparation of liquid and solid bacterial culture media, slant and stab	6	UKS
Demonstration of antibiotic sensitivity/ resistance of bacteria to antibiotic discs	4	CM

THEORY (CC-12)
2019-2020
SEM -V (JULY- DECEMBER)

Genetics	CLASS	TEACHER
Unit1: Mendelian Genetics and its Extension 1. Principles of inheritance, Incomplete dominance and co-dominance, Epistasis Multiple alleles, Lethal alleles, Pleiotropy 2. Sex-linked, sex-influenced and sex-limited inheritance, 3. Polygenic Inheritance.	10	TR
Unit2: Linkage, Crossing Over and Chromosomal Mapping 1. Linkage and Crossing Over, molecular basis of crossing over, 2. Measuring Recombination frequency and linkage intensity using three factor crosses, Interference and coincidence	10	AD
Unit3: Mutations 1. Types of gene mutations(Classification), 2. Types of chromosomal aberrations(Classification with one suitable example of each), 3. Non-disjunction and variation in chromosome number; 4. Molecular basis of mutations in relation to UV light and chemical mutagens	8	TR
Unit4: Sex Determination 1. Mechanisms of sex determination in <i>Drosophila</i> 2. Sex determination in mammals 3. Dosage compensation in <i>Drosophila</i> & Human	8	AD
Unit5: Extra-chromosomal Inheritance 1. Criteria for extra chromosomal inheritance, Antibiotic resistance in <i>Chlamyadomonas</i> , 2. Kappa particle in Paramoecium 3. Shell spiralling in snail	4	AD
Unit6: Recombination in Bacteria and Viruses 1. Conjugation, Transformation, Transduction, 2. Complementation test in Bacteriophage	6	TR
Unit7: Transposable Genetic Elements 1. Transposons in bacteria, Ac-Ds elements in maize and P elements in <i>Drosophila</i> , 2. LINE, SINE, Alu elements in humans	4	AD

PRACTICAL (CC-12)
2019-2020
SEM -V (JULY-DECEMBER)

Genetics	CLASS	TEACHER
Chi-square analyses	6	AD
Problems of linkage maps on <i>Drosophila</i>	6	AD
Identification of chromosomal aberration in <i>Drosophila</i> (inversion, ring chromosome, paracentric inversion) from photograph	2	AD
Study of human karyotype, normal and abnormal (Down, Klinefelter, Turner's, Cri-du-Chat) from photograph	4	TR
Pedigree analysis of some human inherited traits (X-linked dominant, X-linked recessive, autosomal dominant, autosomal recessive, Y-linked)	6	TR

THEORY (DSE-1)
2019-2020
SEM -V (JULY- DECEMBER)

Animal Biotechnology	CLASS	TEACHER
Unit1:Introduction 1. Organization of prokaryotic and eukaryotic genome, 2. Concept of genomics	5	SB
Unit2:MolecularTechniquesinGene manipulation 1. Cloning vectors: Plasmids, Cosmids, Phagemids, Lambda Bacteriophage, M13, BAC, YAC, MAC and Expression vectors (characteristics). 2. Restriction enzymes: Nomenclature, detailed study of Type II. 3. Transformation techniques: Calcium chloride method and electroporation. 4. Construction of genomic and cDNA libraries and screening by colony and plaque hybridization 5. Southern, Northern and Western blotting 6. DNA sequencing: Sanger method 7. Polymerase Chain Reaction, DNA Fingerprinting and DNA microarray	23	SB
Unit3:Genetically Modified Organisms 1. Production of cloned and transgenic animals: Nuclear Transplantation, Retroviral Method, DNA microinjection. 2. Applications of transgenic animals: Production of pharmaceuticals, production of donor organs, knockout mice.	12	SM
Unit4:CultureTechniquesand Applications 1. Animal cell culture, 2. Expressing cloned genes in mammalian cells, 3. Molecular diagnosis of genetic diseases(Cystic fibrosis, Sickle cell anaemia)	10	SM

PRACTICAL (DSE-1)
2019-2020
SEM -V (JULY-DECEMBER)

Animal Biotechnology	CLASS	TEACHER
Construction of linear restriction map from the data provided.	4	SB
Calculation of transformation efficiency from the data provided.	6	SB
Study and identification of following techniques through photographs a. Southern Blotting b. Northern Blotting c. Western Blotting d. DNA Sequencing (Sanger's Method) e. PCR f. DNA fingerprinting	10	SM
Project report on animal cell culture	2	SB

THEORY (DSE-2)
2019-2020
SEM -V (JULY- DECEMBER)

Parasitology	CLASS	TEACHER
Unit1: Introduction to Parasitology 1. Brief introduction of Parasitism, Parasite, Parasitoid and Vectors (mechanical and biological vector) 2. Host parasite relationship	2	DM
Unit2: Parasitic Protists Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment of <i>Giardia intestinalis</i> , <i>Trypanosoma gambiense</i> , <i>Leishmania donovani</i>	12	DM
Unit3: Parasitic Platyhelminthes Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment of <i>Schistosoma haematobium</i> , <i>Taenia sajinata</i>	12	DRB
Unit4: Parasitic Nematodes 1. Study of Morphology, Life Cycle, Prevalence, Epidemiology, Pathogenicity, Diagnosis, Prophylaxis and Treatment of <i>Ascaris lumbricoides</i> , <i>Ancylostoma duodenale</i> , <i>Wuchereria bancrofti</i> and <i>Trichinella spiralis</i> , <i>Brugiamalayi</i> ; 2. Nematode plant interaction ; Gall formation	12	DRB
Unit5: Parasite Vertebrates Brief account of Cookicutter Shark, Hood Mocking bird, Vampire bat	2	DRB

PRACTICAL (DSE-2)
2019-2020
SEM -V (JULY-DECEMBER)

Parasitology	CLASS	TEACHER
Identification of life stages of <i>Giardia lamblia</i> and <i>Leishmania donovani</i> through permanent slides/microphotographs	4	DM
Identification of adult and life stages of <i>Schistosoma haematobium</i> , <i>Taeniasolium</i> through permanent slides/microphotographs	6	DM
Identification of adult and life stages of <i>Ancylostoma duodenale</i> , <i>Wuchereria bancrofti</i> and <i>Trichinella spiralis</i> through permanent slides/microphotographs	4	DM
Identification of plant parasitic root knot nematode, <i>Meloidogyne</i> from the soil sample	6	DM
Identification of <i>Pediculus humanus</i> , <i>Xenopsyll acheopis</i> and <i>Cimex lectularius</i> through permanent slides/photographs	4	DRB
Isolation and fixation of nematode/cestode parasites from the intestine of hen[Intestine can be procured from poultry/market as a by-product]	6	DRB
Submission of a project report on any parasite of vertebrates		

THEORY (CC-13)
2019-2020
SEM -VI (JANUARY-JUNE)

Developmental Biology	CLASS	TEACHER
Unit1:Introduction Basicconcepts:PhasesofDevelopment,Cellcellinteraction,Differentiationandgrowth ,Differential gene expression	2	DRB
Unit2:Early Embryonic Development 1. Gametogenesis, Spermatogenesis, Oogenesis; 2. Types of eggs, Egg membranes; 3. Fertilization(External and Internal): Changes in gametes, Blocks to polyspermy; 4. Planes and patterns of cleavage; 5. Types of Blastula; Fate maps(including Techniques); 6. Early development of frog and chick up to gastrulation; 7. Embryonic induction and organizers	20	DRB
Unit3:Late Embryonic Development 1. Fate of Germ Layers; 2. Extra-embryonic membranes in birds; 3. Implantation of embryo in humans, 4. Placenta(Structure, types and functions of placenta)	8	DM
Unit4:PostEmbryonicDevelopment 1. Development of brain and Eye in Vertebrate 2. Regeneration: Modes of regeneration, epimorphosis, morphallaxis and compensatory regeneration (with one example each)	12	DM
Unit5:Implications of Developmental Biology 1. Teratogenesis:Teratogenicagentsandtheireffectsonembryonicdevelopment; 2. In vitro fertilization, 3. Stem cell(ESC), 4. Amniocentesis	8	DM

PRACTICAL (CC-13)
2019-2020
SEM -VI (JANUARY-JUNE)

Developmental biology	CLASS	TEACHER
1. Identification of whole mounts of developmental stages of chick through permanent slides: Primitive streak (13 to 18 hours), 21-33h, 36-48h and 72-96 hours of incubation (Hamilton and Hamburger stages)	6	CM
Study of the developmental stages and lifecycle of <i>Drosophila</i> from stock culture	6	CM
Study and identification of different sections of placenta (through photo micrograph/slides)	4	CM
Project report on <i>Drosophila</i> culture/chick embryo development		

THEORY (CC-14)
2019-2020
SEM -VI (JANUARY-JUNE)

Evolutionary biology	CLASS	TEACHER
Unit1 Life's Beginnings: Chemogeny, RNA world, Biogeny, Origin of photosynthesis, Evolution of eukaryotes	5	TR
Unit2 Historical review of Evolutionary concepts, Lamarckism, Darwinism and Neo Darwinism	5	TR
Unit3 1. Geological time scale, 2. Fossil records of Hominids (from <i>Australopithecus</i> to <i>Homo sapiens</i>), evolution of horse 3. Neutral theory of molecular evolution, Molecular clock	6	TR
Unit4 Sources of variations: Heritable variations and the its role in evolution	5	CM
Unit5 1. Population genetics: Hardy-Weinberg Law (statement and derivation of equation, application of law to biallelic Population); 2. Evolutionary forces upsetting H-W equilibrium; Natural selection (concept of fitness, types of selection, selection coefficient, mode of selection heterozygous superiority). 3. Genetic Drift mechanism (founder's effect, bottleneck phenomenon) Role of Migration and Mutation in changing allele frequencies.	12	CM
Unit6 1. Species concept, 2. Isolating mechanisms, modes of speciation 3. Adaptive radiation/ macroevolution (exemplified by Galapagos finches)	6	AD
Unit 7 Extinctions, Back ground and mass extinctions (causes and effects), detailed example of K-T extinction	2	CM
Unit8 Origin and Evolution of Man, Unique Hominin characteristics contrasted with primate characteristic Molecular analysis of human origin	6	AD
Unit9 Phylogenetic trees, Construction & interpretation of Phylogenetic tree using parsimony, Convergent& Divergent evolution.	3	AD

PRACTICAL (CC-14)
2019-2020
SEM -VI (JANUARY-JUNE)

Evolutionary biology	CLASS	TEACHER
Study of fossils from models/pictures	4	TR
2. Study of homology and analogy from suitable specimens	4	AD
3. Study and verification of Hardy-Weinberg Law by chi-square analysis	6	TR
4. Graphical representation and interpretation of data of height /weight of a sample of 100 humans in relation to the age and sex.	6	AD

THEORY (DSE-3)
2019-2020
SEM -VI (JANUARY-JUNE)

Animal Behaviour	CLASS	TEACHER
Unit1:IntroductiontoAnimal Behaviour 1. Origin and history of Ethology, Brief profiles of Karl Von Frish, Ivan Pavlov, Konrad Lorenz, NikoTinbergen 2. Proximate and ultimate causes of behaviour, Methods and recording of a behaviour	5	SB
Unit2:Patterns of Behaviour 1. Stereotyped Behaviours (Orientation, Reflexes); 2. Individual Behavioural patterns; Instinct vs. Learnt Behaviour; 3. Associative learning, classical and operant conditioning, Habituation, Imprinting	6	SB
Unit3: Social and Sexual Behaviour 1. Social Behaviour: Concept of Society; Communication and the senses 2. Altruism; Insects' society with Honeybee as example; Foraging in honeybee and advantages of the waggle dance. 3. Sexual Behaviour: Asymmetry of sex, Sexual dimorphism, Mate choice, Intra-sexual selection (male rivalry), Inter-sexual selection (female choice), Sexual conflict in parental care	15	SB
Unit4:Introductionto Chronobiology 1. Historical developments in chronobiology; 2. Biological oscillation :the concept of Average, amplitude, phase and period 3. Adaptive significance of biological clocks	10	SM
Unit5: Biological Rhythm 1. Types and characteristics of biological rhythms :Short- and Long- term rhythms; Circadian rhythms; Tidal rhythms and Lunar rhythms; 2. Concept of synchronization and masking; Photic and non-photic zeitgebers; Circannual rhythms; 3. Photoperiod and regulation of seasonal reproduction of vertebrates; 4. Role of melatonin.	14	SM

PRACTICAL (CC-DSE-3)
2019-2020
SEM -VI (JANUARY-JUNE)

Animal Behaviour	CLASS	TEACHER
Study of nests and nesting habits of the birds and social insects	4	SB
Study of the behavioral responses of woodlice to dry and humid conditions.	5	SB
Study of geotaxis behaviour in earthworm	4	SB
Study of photo taxis behaviour in insect larvae	4	SB
Visit to Forest/Wildlife Sanctuary/Biodiversity Park/Zoological Park to study behavioural activities of animals and prepare a short report.		
Study and actogram construction of locomotor activity of suitable animal models.	6	SM
Study of circadian functions in humans (daily eating, sleep and temperature patterns).	5	SM

THEORY (DSE-4)
2019-2020
SEM -VI (JANUARY-JUNE)

Endocrinology	CLASS	TEACHER
Unit1:Introductionto Endocrinology 1. General idea of Endocrine systems, Classification, Characteristics and Transport of Hormones, 2. Neurosecretions and Neurohormones	4	UKS
Unit2:Epiphysis,Hypothalamo-hypophysial Axis 1. Structure of pineal gland, Secretions and their functions in biological rhythms and reproduction. 2. Structure and functions of hypothalamus and Hypothalamic nuclei, Regulation of neuroendocrine glands, Feedback mechanisms 3. Structure of pituitary gland, Hormones and their functions, Hypothalamo-hypophysial portal system, Disorders of pituitary gland.	16	CM
Unit3:Peripheral Endocrine Glands 1. Structure, Hormones, Functions and Regulation of Thyroid gland, Parathyroid, Adrenal, Pancreas, Ovary and Testis 2. Hormones in homeostasis 3. Disorders of endocrine gland	16	UKS
Unit4:Regulation of Hormone Action 1. Mechanism of action of steroidal, non-steroidal hormones with receptors 2. Bioassays of hormones using RIA &ELISA 3. Estrous cycle in rat and menstrual cycle in human 4. Multifaceted role of Vasopressin &Oxytocin. 5. Hormonal regulation of parturition.	14	UKS

PRACTICAL (CC-DSE-4)
2019-2020
SEM -VI (JANUARY-JUNE)

Endocrinology	CLASS	TEACHER
Dissect and display of Endocrine glands in laboratory bred rat.	6	CM
Study of the permanent slides of all the endocrine glands (Thyroid, Adrenal, Pancreas, Testis and Ovary)	6	CM
Tissue fixation, embedding in paraffin, microtomy and slide preparation of any endocrine gland	8	UKS
Demonstration of hormone assay through ELISA from available teaching kit	4	CM

THEORY (PAPER-IX)

2018-2019

PART-III (JULY - DECEMBER)

Unit-1	CLASS	TEACHER
Group : A : Ethology and Biodiversity Conservations 1. Concept of Ethology; Innate and Learned Behaviour, Fixed Action Pattern. 2. Elements of Sociobiology: Selfishness, Cooperation, Altruism and Kinship. 3. Mating systems and their Significance	10	AD
4. Biodiversity: Definition, levels, values, causes of depletion; In-situ and Ex-situ conservation, Bio-diversity Hotspots and Mega diversity countries; Biodiversity Act; Biopiracy.	10	DM
5. Endangered and Critically Endangered Vertebrate Wildlife of India; Management Strategies with special reference to Tiger and Rhinoceros in India; Wildlife Protection Laws.	10	DRB
Group – B : Ecology 1. Concept of Ecosystems: Components, Basic properties and Principles; Concept of Limiting Factor-impact of Temperature on biota. 2. Energy Flow through trophic levels and Ecological efficiencies 3. Population Dynamics: Natality and Mortality, Growth forms, Regulation of Population density	12	DRB
4. Community structure: Characteristics, Types, Niche concept, Resource partitioning. 5. Ecological Succession: Concept of Community change, Theories of Climax, Models of Succession. 6. Salient features (characteristics and importance) of Indian Rain Forest	18	DP
Group - C: Biometry 1. Definition and importance of Biometry in Zoology. 2. Methods of Sampling. 3. Measures of Central Tendency - General idea and Simple problem solving. 4. General idea of Probability. 5. Test of Significance (Student's t-Test). 6. Goodness of fit (Chai-Square Test).	15	AD

THEORY (PAPER-X)

2018-2019

PART-III (JULY - DECEMBER)

Unit-1	CLASS	TEACHER
<p>Group – A : Molecular Biology and Biotechnology DNA Replication - Semi-conservative DNA replication; Factors involved and Replication mechanism in <i>E. coli</i>. 2. Chromosomal Aberrations (both Structural & Numerical); Down, Turner, Klinefelter and Cri-du-Chat syndromes. 3. Transcription in <i>Escherichia coli</i>. 4. Transcription in Eukaryotes. 5. Concept of Genetic Code. 6. Translation in <i>Escherichia coli</i> - Mechanism and Factors involved.</p>	22	UKS
<p>7. Regulation of Gene expression - Operon Concept (Inducible and Repressible operon). 8. Cancer : Types, Tumor, Properties of Transformed Cells. 9. Genetic Disorders and Diseases in Man - PKU, Albinism, Sickle-cell anaemia and Thalassemia 10. Basic concept of Genetic Engineering; Recombinant DNA and Cloning; DNA Fingerprinting and its Application.</p>	18	TR
<p>Group - B: Human Immunology 1. Immunity: Innate and Adaptive. 2. Immunoglobulin classification. 3. Cells involved in Acquired Immune System (Outline idea). 4. Basic Structures of Antigen and Antibody.</p>	20	DM

PRACTICAL (PAPER-XI)

2018-2019

PART-III (JULY - DECEMBER)

Group - A: Ecology :	CLASS	TEACHER
1. Use of Micrometers and Camera Lucida (Prism-type) in measuring and drawing of Zooplankton.	6	AD
2. Quantitative estimation of Dissolved O ₂ (Winkler's method) and Free CO ₂ (APHA method) of natural water by titrimetric methods.	8	AD
3. Determination of soil pH using pH meter	4	A.Dey

PRACTICAL (PAPER-XII)

2018-2019

PART-III (JULY - DECEMBER)

Group - A: Histology and Statistical Analysis	CLASS	TEACHER
1. Tissue fixation, Embedding, Microtomy, Staining and Mounting of Histological tissue (any one) of white Rat; Demonstration of position of Endocrine glands in Rat.	10	UKS
2. Identification of Mammalian Histological Tissue sections (Liver, Pancreas, Thyroid, Kidney, Adrenal, Testis and Ovary) with Identifying characters.	6	DP
3. Chi-square Test with concluding remarks	4	UKS

THEORY (PAPER-IX)

2018-2019

PART-III (JANUARY -JUNE)

Unit-2	CLASS	TEACHER
Group – A : Applied Zoology 1. Pond Management; Induced Breeding and Composite culture of Carp. 2. Sericulture - Rearing and Cocoon production; Diseases and Pests and their Control in <i>Bombyx mori</i> .	8	DP
3. Poultry - Major Fowl Breeds; Deep Litter System of Rearing; Common diseases and their Control measures. 4. Animal Husbandry - Types and Distribution of Cattle Breeds (Cow only) in India; Artificial Insemination : Merits and Demerits. 5. Pest Biology - Pests and their Control - Cultural, Mechanical, Chemical, Biological; Integrated Pest Management; Bionomics, Damage and Control measures of <i>Nilaparvata</i> , <i>Apion</i> , <i>Sitophilus</i> .	12	DM
Group – B : Microbiology, Parasitology and Medical Entomology 1. Types of Microbes; Normal flora in Man and their Protective role 2. Basic structure of Bacteria.	7	TR
3. Interactions among Organisms: Phoresis, Commensalisms, Parasitism and Mutualism 4. Parasites and Hosts: types and examples; Host-Parasite Interactions: Morphological and Physiological changes.	10	DRB
5. Morphology, Life-cycle, Pathogenicity and Control of <i>Giardia intestinalis</i> , <i>Leishmania sp</i> , <i>Ascaris lumbricoides</i> and <i>Wuchereria bancrofti</i> . 6. Biology of Vectors and their Control measures: <i>Anopheles</i> , <i>Culex</i> and <i>Phlebotomus</i>	8	A.Dey

THEORY (PAPER-X)

2018-2019

PART-III (JANUARY -JUNE)

Unit-2	CLASS	TEACHER
Group – A : Developmental Biology 1. Gametogenesis - Germ cell migration, Spermatogenesis and Oogenesis. 2. Ultra structure of Sperm and Egg; Physical and Biochemical events in Fertilization. 3. Egg-types and role of yolk in Cleavage.	12	CM
5. Morphogenetic movement; Gastrulation in Frog and Chick; Concept of Fate Map. 6. Concepts of Organizer, Induction and Competence. 7. Development of Extra embryonic membranes in Chick; Types of Placenta in Mammals.	18	TR
8. Organogenesis - Development of Eye and Heart in Chick. 9. Regeneration - Basic mechanism.	10	CM
Group – B : Endocrinology 1. General idea of Invertebrate and Vertebrate Endocrine systems (Name and Locations of Endocrine Glands, Name of hormones and Chemical nature). 2. Pituitary : Hormones and their Functions.	12	DRB
3. Brief descriptions of Major Endocrine disorders in Human (Gigantism, Acromegaly, Cretinism, Myxoedema, Goiter, Cushing's disease & Addison's disease).	8	A.Dey

PRACTICAL (PAPER-XI)

2018-2019

PART-III (JANUARY -JUNE)

Group - B: Applied Zoology	CLASS	TEACHER
1. Identification of ectoparasites and pests (up to Order and Generic characters): <i>Menopon</i> , <i>Pediculus</i> , <i>Xenopsylla</i> , <i>Scirpophaga</i> , <i>Leptocorisa</i> , <i>Nilaparvata</i> , <i>Apion</i> , <i>Spodoptera</i> , <i>Sitophilus</i> , <i>Tribolium</i> .	08	A.Dey
2. Identification of fish (up to Sub-Class and Species characters): <i>Cirrhinus mrigala</i> , <i>Labeo bata</i> , <i>Labeo rohita</i> , <i>Labeo calbasu</i> , <i>Catla catla</i> , <i>Channa stratus</i> , <i>Mystus</i> <i>vittatus</i> , <i>Pampus argenteus</i> , <i>Harpadon nehereus</i> , <i>Notopterus notopterus</i> .	08	A.Dey

PRACTICAL (PAPER-XII)

2018-2019

PART-III (JANUARY -JUNE)

Group - B: Microbiology and Parasitology	CLASS	TEACHER
1. Staining of Bacteria from Curd sample by Gram staining method. 2. Smear preparations and Staining of the Gut-contents of Cockroach and Seminal vesicle of Earthworm for Protozoan parasites.	10	DM
3. Identification of <i>Entamoeba sp.</i> , <i>Giardia sp.</i> , <i>Taenia solium</i> , <i>Ascaris lumbricoides</i> (adult male and female), <i>Ancylostoma duodenale</i> (adult male and female), Fasciola sp. 4. Identification of vectors: <i>Anopheles</i> , <i>Culex</i> , <i>Phlebotomus</i> .	08	DRB

TEACHING PLAN
SESSION 2018-19

THEORY (GE-1)
SEMESTER 1 (JULY -DECEMBER)

GE -1 (ANIMAL DIVERSITY)	CLASS	TEACHER
UNIT 1 Kingdom Protista General characters and classification of Subkingdom Protozoa up to Phylum (Levine et al., 1980); Locomotory Organelles and locomotion in Protozoa	3	UKS
UNIT 2 Phylum Porifera General characters and classification up to classes; Canal System in <i>Sycon</i>	3	UKS
UNIT -3 Phylum Cnidaria General characters and classification up to classes; Polymorphism in Hydrozoa	3	UKS
UNIT- 4 Phylum Platyhelminthes General characters and classification up to classes; Life history of <i>Taenia solium</i>	3	DRB
UNIT -5 Phylum Nematoda General characters and classification up to classes; Life history of <i>Ascaris lumbricoides</i> and its parasitic adaptations	3	DRB
UNIT-6 Phylum Annelida General characters and classification up to classes; Nephridia in Annelida	3	DRB
UNIT-7 Phylum Arthropoda General characters and classification up to classes; Vision in insect, Metamorphosis in Insects	5	UKS
UNIT- 8 Phylum Mollusca General characters and classification up to classes; Respiration in <i>Pila</i>	3	UKS
UNIT-9 Phylum Echinodermata General characters and classification up to classes; Water-vascular system in <i>Asterias</i>	4	DRB
UNIT-10	2	DRB

Protochordates General features; Feeding in <i>Branchiostoma</i>		
UNIT-11 Agnatha General features and classification up to classes (Young, 1981)	2	SB
UNIT-12 Pisces General features and Classification up to Subclasses (Romer, 1959); Osmoregulation in Fishes	3	SB
UNIT-13 Amphibia General features and Classification up to living orders (Duellman & Trueb, 1986); Metamorphosis in Toad	3	DP
UNIT-14 General features and Classification up to living Subclass (Young, 1981); Poisonous and non-poisonous snakes, Biting mechanism in snakes	4	DP
UNIT-15 Aves General features and Classification up to orders (Young, 1981); Flight adaptations in birds	3	DP
UNIT-16 Mammals Classification up to Subclasses (Young, 1981); Origin & distribution of Cranial nerves in <i>Cavia</i>	3	SB

PRACTICAL (GE-1)
SEMESTER 1 (JULY -DECEMBER)

ANIMAL DIVERSITY	CLASS	TEACHER
<p style="text-align: center;">1</p> <p>• Spot identification of the following specimens:</p> <p><i>Amoeba, Euglena, Plasmodium, Paramecium, Sycon, Euspongia,, Obelia, Physalia, Aurelia, Tubipora, Metridium, Taenia solium, Male and female Ascaris lumbricoides, Aphrodite, Nereis, Pheretima, Hirudinaria, Palaemon, Cancer, Limulus, Palamnaeus, Scolopendra, Julus, Periplaneta, Apis, Chiton, Dentalium, Pila, Unio, Loligo, Sepia, Octopus, Pentaceros, Ophiura, Echinus, Cucumaria and Antedon, Balanoglossus, Herdmania, Branchiostoma, Petromyzon, Sphyrna, Pristis, Torpedo, Labeo, Exocoetus, Anguilla, Ichthyophis/Ureotyphlus, Salamandra, Bufo, Hyla, Chelone, Hemidactylus, Chamaeleon, Draco, Vipera, Naja, Crocodylus, Gavialis, Passer, Psittacula, Alcedo, Sorex, Pteropus, Funambulus, Suncus</i></p>	4	BPR
<p style="text-align: center;">2</p> <p>• Study of the following permanent slides: Transverse section of male and female <i>Ascaris</i></p>	3	A.ALI
<p style="text-align: center;">3</p> <p>• Identification of poisonous and non-poisonous snakes</p>	3	A.ALI
<p>4. An “animal album” containing photographs, cut outs, with appropriate write up about the above mentioned taxa. Different taxa/ topics may be given to different sets of students for this purpose.</p>		

THEORY GE-2
JANUARY-JUNE

GE-2 COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES	CLASS	TEACHER
UNIT-1 Integumentary System Derivatives of integument with reference to glands and digital tips	3	CM
UNIT-2 Skeletal System Evolution of visceral arches	2	SM
UNIT-3 Digestive System Brief account of alimentary canal and digestive glands	4	SM
UNIT-4 Respiratory System Brief account of gills, lungs, air sacs and swim bladder	3	A.DEY
UNIT-5 Circulatory System Evolution of heart and aortic arches	4	A.DEY
UNIT-6 Urinogenital System Evolution of kidney and urinogenital ducts	3	DP
UNIT-7 Nervous System Comparative account of brain	2	DP
UNIT-8 Sense Organs Classification of receptors, Brief account of auditory receptors in vertebrate	3	DP
UNIT-9	12	CM

<p>Early Embryonic Development Gametogenesis: Spermatogenesis and oogenesis with reference to mammals, vitellogenesis in birds; Fertilization: external (amphibians), internal (mammals), blocks to polyspermy; Early development of frog and chick (structure of mature egg and its membranes, patterns of cleavage, fate map, up to formation of gastrula); types of morphogenetic movements; Fate of germ layers; Neurulation in frog embryo.</p>		
<p style="text-align: center;">UNIT-10</p> <p>Late Embryonic Development Implantation of embryo in humans, Formation of human placenta and functions, other types of placenta on the basis of histology; Metamorphic events in frog life cycle and its hormonal regulation</p>	6	DP
<p style="text-align: center;">UNIT-11</p> <p>Control of Development Fundamental processes in development (brief idea) – Gene activation, determination, induction, differentiation, morphogenesis, intercellular communication, cell movements and cell death</p>	8	A.DEY

PRACTICAL GE-2

JANUARY-JUNE

COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES	CLASSES	TEACHER
Osteology: 1.a) Identification of limb bones and girdles of <i>Columba</i> and <i>Cavia</i> b) Mammalian skulls: <i>Cavia</i> and <i>Canis</i> .	3	A.ALI
2. Frog - Study of developmental stages - whole mounts and sections through permanent slides or photomicrographs – cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.	4	A.DEY
3. Study of the different types of placenta- histological sections through permanent slides or photomicrographs.	5	A.DEY
4. Examination of gametes - frog/rat - sperm and ova through permanent slides or photomicrographs.	6	A.ALI

SEMESTER-III
THEORY GE-3
JULY-DECEMBER

GE-3 PHYSIOLOGY AND BIOCHEMISTRY	CLASS	TEACHER
UNIT-1 Nerve and muscle 1 <ul style="list-style-type: none"> . Structure of a neuron, Resting membrane potential, Graded potential, Origin of Action potential and its propagation in myelinated and non-myelinated nerve fibres. 2 <ul style="list-style-type: none"> . Ultra-structure of skeletal muscle, Molecular and chemical basis of muscle contraction 	8	DM
UNIT-2 Digestion Physiology of digestion in the alimentary canal; Absorption of carbohydrates, proteins, lipids	5	DM
UNIT-3 Respiration Pulmonary ventilation, Respiratory volumes and capacities, Transport of Oxygen and carbon dioxide in blood	5	DM
UNIT-4 Excretion Structure of nephron, Mechanism of Urine formation, Counter-current Mechanism	5	DM
UNIT-5 Cardiovascular system Composition of blood, Homeostasis, Structure of Heart, Origin and conduction of the cardiac impulse, Cardiac cycle	6	DRB
UNIT-6 Reproduction and Endocrine Glands Physiology of male reproduction: hormonal control of spermatogenesis;	7	DRB

Physiology of female reproduction: hormonal control of menstrual cycle. Structure and function of pituitary, thyroid, pancreas and adrenal		
<p style="text-align: center;">UNIT-7</p> <p>Carbohydrate: Structure and Metabolism</p> <p>Introduction to Carbohydrates, Structure & Types of Carbohydrates, Isomerism, Introduction to Intermediary metabolism: Glycolysis, Krebs cycle, Pentose phosphate pathway, Gluconeogenesis, Electron transport chain</p>	8	TR
<p style="text-align: center;">UNIT-8</p> <p>Lipid: Structure and Metabolism</p> <p>Introduction to Lipids: Definitions; fats and oils; classes of lipids; Lipoproteins; Biosynthesis and β oxidation of palmitic acid</p>	5	TR
<p style="text-align: center;">UNIT-9</p> <p>Protein: Structure and metabolism</p> <p>Proteins and their biological functions, functions of amino acids, physicochemical properties of amino acids. Peptides – structure and properties; primary structure of protein, secondary, tertiary and quaternary structures. Transamination, Deamination and Urea Cycle.</p>	5	AD
<p style="text-align: center;">UNIT-10</p> <p>Enzymes</p> <p>Introduction, Classification of Enzymes, Mechanism of action, Enzyme Kinetics, Inhibition and Regulation</p>	4	AD

SEMESTER-III

PRACTICAL- GE-3

JULY-DECEMBER

PHYSIOLOGY AND BIOCHEMISTRY	CLASSES	TEACHER
Preparation of hemin crystals	4	DP
Identification of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland, small intestine, liver, lung, kidney	3	DP
Qualitative tests to identify functional groups of carbohydrates in given solutions: Glucose (Benedict's test), Sucrose (Iodine test)	6	DP
Quantitative estimation of total protein in given solutions by Lowry's method	6	A.ALI
Study of activity of salivary amylase under optimum conditions	4	A.ALI

SEMESTER-IV
THEORY GE-4
JANUARY-JUNE

GE-4 Genetics and Evolutionary Biology	CLASS	TEACHER
UNIT-1 Introduction to Genetics Mendel's work on transmission of traits, Genetic Variation, Molecular basis of Genetic Information	3	A.DEY
UNIT-2 Mendelian Genetics and its Extension Principles of Inheritance, Chromosome theory of inheritance, Incomplete dominance and co-dominance, Multiple alleles, Lethal alleles, Epistasis, Pleiotropy, Sex-linked inheritance, Extra-chromosomal inheritance	5	A.DEY
UNIT-3 Linkage, Crossing Over and Chromosomal Mapping Linkage and crossing over, Recombination frequency as a measure of linkage intensity, two factor and three factor crosses, Interference and coincidence, Somatic cell genetics - an alternative approach to gene mapping	5	A.DEY
UNIT-4 Mutations Chromosomal Mutations: Deletion, Duplication, Inversion, Translocation, Aneuploidy and Polyploidy; Gene mutations: Induced versus Spontaneous mutations	7	TR
UNIT-5 Sex Determination Chromosomal mechanisms of sex determination; dosage compensation (human)	4	TR
UNIT-6 History of Life Origin of Life	2	A.DEY
UNIT-7 Introduction to Evolutionary Theories 3 Lamarckism, Darwinism, Neo-Darwinism	3	AD

<p style="text-align: center;">UNIT-8</p> <p>Direct Evidences of Evolution Types of fossils, Incompleteness of fossil record, Dating of fossils, Phylogeny of horse</p>	3	TR
<p style="text-align: center;">UNIT-9</p> <p>Processes of Evolutionary Change Organic variations; Isolating Mechanisms; Natural selection (Example: Industrial melanism); Types of natural selection (Directional, Stabilizing, Disruptive), Artificial selection</p>	5	AD
<p style="text-align: center;">UNIT-10</p> <p>Species Concept Biological species concept (Advantages and Limitations); Modes of speciation (Allopatric, Sympatric)</p>	4	AD
<p style="text-align: center;">UNIT-11</p> <p>Macro-evolution Macro-evolutionary principles (example: Darwin's Finches)</p>	5	AD
<p style="text-align: center;">UNIT-12</p> <p>Extinction Mass extinction (Causes, Names of five major extinctions, K-T extinction in detail), Role of extinction in evolution</p>	4	TR

SEMESTER-IV

PRACTICAL- GE-4

JANUARY-JUNE

Genetics and Evolutionary Biology	CLASSES	TEACHER
Study of Mendelian Inheritance and gene interactions using suitable examples. Verify the results using Chi-square test.	4	AD
Study of Linkage, recombination, gene mapping using the data.	3	AD
Study of Human Karyotypes; normal and abnormal (Turner's, Down's and Klinefelter syndrome) from photographs.	3	AD
Study of fossil evidences from plaster cast models /pictures	3	DP
Study of homology and analogy from suitable specimens/ pictures	4	DP
Charts: a) Phylogeny of horse with diagrams/ cut outs of limbs and teeth of horse ancestors b) Darwin's Finches with diagrams/ cut outs of beaks of different species	3	DP
Visit to any Zoological Museum and submission of report		

SEMESTER-V
THEORY-DSE-1
JULY-DECEMBER

DSE-1 APPLIED ZOOLOGY	CLASS	TEACHER
UNIT-1 Introduction to Host-parasite Relationship Host, Definitive host, Intermediate host, Parasitism, Symbiosis, Commensalism, Reservoir, Zoonosis	3	SB
UNIT-2 Epidemiology of Diseases Transmission, Prevention and control of diseases: Tuberculosis, Typhoid	7	SM
UNIT-3 Rickettsia and Spirochetes Brief account of <i>Rickettsia prowazekii</i> , <i>Borrelia recurrentis</i> and <i>Treponema pallidum</i> .	3	SB
UNIT-4 Parasitic Protozoa Life history and pathogenicity of <i>Entamoeba histolytica</i> , <i>Plasmodium vivax</i> and <i>Trypanosoma gambiense</i>	6	DP
UNIT-5 Parasitic Helminthes Life history and pathogenicity of <i>Ancylostoma duodenale</i> and <i>Wuchereria bancrofti</i>	4	DP
UNIT-6 Insects of Economic Importance Biology, Control and damage caused by <i>Helicoverpa armigera</i> , <i>Pyrilla perpusilla</i> and <i>Papilio demoleus</i> , <i>Callosobruchus chinensis</i> , <i>Sitophilus oryzae</i> and <i>Tribolium castaneum</i>	8	DP
UNIT-7 Insects of Medical Importance Medical importance and control of <i>Pediculus humanus corporis</i> , <i>Anopheles</i> , <i>Culex</i> , <i>Aedes</i> , <i>Xenopsylla cheopis</i>	8	SM
UNIT-8 Animal Husbandry Preservation of semen and artificial insemination in cattle	3	DP
UNIT-9 Poultry Farming Principles of poultry breeding, Management of breeding stock	4	SM

and broilers, Processing and preservation of eggs		
UNIT-10	4	SB
Fish Technology Genetic improvements in aquaculture industry; Induced breeding and transportation of fish seed		

SEMESTER-V

PRACTICAL- DSE-1

JULY-DECEMBER

APPLIED ZOOLOGY	CLASSES	TEACHER
Study and Identification of <i>Plasmodium vivax</i> , <i>Entamoeba histolytica</i> , <i>Ancylostoma duodenale</i> and <i>Wuchereria bancrofti</i> and their life stages through permanent slides/photomicrographs or specimens.	4	A.ALI
Study and Identification of arthropod vectors associated with human diseases: <i>Pediculus</i> , <i>Culex</i> , <i>Anopheles</i> , <i>Aedes</i> and <i>Xenopsylla</i>	4	A.ALI
Study and Identification of insect damage to different plant parts/stored grains through damaged products/photographs	4	A.ALI
Identifying features and economic importance of <i>Nilaparvata lugens</i> , <i>Apion corchori</i> , <i>Scirpophaga incertulus</i> , <i>Callosobruchus chinensis</i> , <i>Sitophilus oryzae</i> and <i>Tribolium castaneum</i>	3	BPR
Visit to poultry farm/ animal breeding centre/ vector biology/ parasitology Centre. Submission of visit report	1	BPR
Maintenance of freshwater aquarium	4	BPR

SEMESTER-VI
THEORY-DSE-2
JANUARY-JUNE

DSE-2 INSECTS, VECTORS AND DISEASES	CLASS	TEACHER
UNIT-1 Introduction to Insects General Features of Insects, Morphological features, Head – Eyes, Types of antennae, Mouth parts with respect to feeding habit	6	DM
UNIT-2 Concept of Vectors Brief introduction to Vectors (mechanical and biological), Reservoirs, Host-vector relationship, Adaptations as vectors, Host specificity	6	DM
UNIT-3 Insects as Vectors Detailed features of insect orders as vectors – Diptera, Siphonoptera, Siphunculata, Hemiptera	8	SB
UNIT-4 Dipteran as Disease Vectors Study of important Dipteran vectors – Mosquitoes, Sand fly, Houseflies Study of mosquito-borne diseases – Malaria, Dengue, Chikungunya, Viral encephalitis, Filariasis Control of mosquitoes	14	DM
UNIT-5 Siphonaptera as Disease Vectors Fleas as important insect vectors; Host-specificity, Study of Flea-borne diseases – Plague, Typhus fever; Control of fleas	6	DM
UNIT-6 Siphunculata as Disease Vectors Human louse (Head, Body and Pubic louse) as important insect vectors; Control of human louse	4	SB
UNIT-7 Hemiptera as Disease Vectors Bugs as insect vectors; Blood-sucking bugs; Chagas disease, Bed bugs as mechanical vectors, Control and prevention measures	6	SB

SEMESTER-VI
PRACTICAL -DSE-2
JANUARY-JUNE

INSECTS, VECTORS AND DISEASES	CLASSES	TEACHER
Mounting and Study of different kinds of mouth parts of insects	6	A.ALI
Spot identification of following insect vectors through permanent slides/photographs: <i>Aedes, Culex, Anopheles, Pediculus humanuscapitis, Pediculus humanuscorporis, Phithiruspubis, Xenopsylla cheopis, Cimex lectularius, Phlebotomus argentipes, Musca domestica</i>	3	BPR
Study of different diseases transmitted by above insect vectors	3	BPR
Submission of a project report on any one of the insect vectors and disease transmitted		

TEACHING PLAN
SESSION 2019-20

THEORY (GE-1)
SEMESTER 1 (JULY -DECEMBER)

THEORY (PAPER-IV)

PART-III (JULY - DECEMBER)

	CLASS	TEACHER
<p>GROUP - A : Ecology and Wildlife</p> <ol style="list-style-type: none">1. Ecology & Ecosystem: Definition, Components, Food chain, Food web, Ecological pyramid.2. Energy flow through trophic levels.3. Population Ecology (properties and growth forms).4. Outline idea on Community Ecology.5. Conservation of Wildlife: Purpose & Methods, concept of National Park. Sanctuary & Biosphere Reserve.	15	AD
<p>GROUP - B : Economic Zoology</p> <ol style="list-style-type: none">2. Sericulture: Silk varieties in India, Mulberry Silkworm culture.3. Apiculture: Types of Indian Honey bees, Methods of Rearing, Methods of Extraction and Preservation of Honey.4. Poultry: Types of Breeds, Methods of Rearing (Deep-litter System).5. Animal Husbandry: Types and Distribution of Cattle breeds (Milch) in India, Merits and demerits of Artificial Insemination Process.	15	DRB

PRACTICAL (PAPER-V)
PART-III (JULY - DECEMBER)

	CLASS	TEACHER
Group - A a) Measurement of pH of water sample by pH-meter. b) Preparation and Staining of Common Zoo-Planktons from Pon	6	A.ALI
Group - B a) Staining of Blood-film of Rat/Man. b) Preparation of Haemin crystals of Rat/Man.	6	A.DEY

THEORY (PAPER-IV)
PART-III (JANUARY -JUNE)

	CLASS	TEACHER
GROUP - C : Pest & Pest Management and Parasitology 1. Concept of Major and Minor Pest. 2. Bionomics of Common Pest of Paddy (<i>Scirpophaga incertulas</i>). 3. Bionomics of Stored grain Pest (<i>Tribolium castaneum</i>). 4. Concept of Integrated Pest Management.	10	A.DEY
5. Definition and Example: Phoresis, Commensalism, Parasitism, Mutualism. 6. Life history and Pathogenicity of <i>Plasmodium vivax</i> , <i>Ascaris lumbricoides</i> and <i>Fasciola hepatica</i> . 7. Biology and Control of Vectors: <i>Anopheles</i> , <i>Culex</i> .	10	DP
. GROUP - D : Immunology 1. Definition and Types: Innate and Acquired Immunity. 2. Brief Account: Types and Functions of T and B-Lymphocytes. 3. Basic Concept of Antigen and Antibody. 4. Structure of a typical Antibody molecule.	15	DM

PRACTICAL (PAPER-V)
PART-III (JANUARY-JUNE)

	CLASS	TEACHER
Identification with reasons(Scientific Names and Applied Importance) : a) Pests: Scirpophaga, Apion, Tribolium, Sitophilus, Lepisma. b) Fish: Cirrhinus mrigala, Labeo rohita, Labeo calbasu, Catla catla, Mystus vittatus, Hypophthalmichthys molitrix, Ctenopharyngodon idella, Wallago attu, Glossogobius giuris, Channa striatus.. c) Insect vectors: Anopheles, Culex.	6	BPR
Personal activity (Any One): 1. Study and Submission of Life history stages of Anopheles or Culex mosquito. 2. Alizarin Preparation of Fish. 3. Study of Reptilian and Avian Diversity in your Locality.	6	DP

DEPARTMENT OF POLITICAL SCIENCE
TEACHING PLAN OF GOPINATH CHOUDHURY

Political Science (Honours) (2018-19)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-3 (H)	No. of Lecture
July	CC-2: Liberty and Equality: Meaning and their Inter-relationship		CC-7: 73rd Amendment Act and its implications for rural local-self Government in India. 74th Amendment Act and its implications for urban local-self Government in India.		Paper-VI; Political Sociology and Sociology of Politics: Nature and Scope	
August	CC-2: Theory of Justice: Rawls		CC-7: Rural Administration in West Bengal: Panchayati Raj Institutions; Role of BDO.		Paper-VI; Political Culture: Meaning, Components and Types;	
September	CC-2: Ideology – Meaning and Variants: Anarchism and Liberalism.		CC-7: Urban Administration in West Bengal: Municipalities and Municipal Corporations.		Paper-VI; Political Socialization: Meaning, Role and Agencies	
October	CC-2: Ideology – Meaning and Variants Neo-Liberalism and Fascism;		CC-7: District Administration: Role of DM, SP & SDO.		Paper-VI; Political Participation: Meaning and Components	
November	CC-2: The End of Ideology Debate – Daniel Bell and Francis Fukuyama		CC-7: State Administration in West Bengal: Chief Secretary; Divisional Commissioner;		Paper-VI; Political Development and Modernization: Theoretical Issues	
December	CC-2: Theories of State: (a) Idealist (b) Liberal (c) Marxist (d) Gandhian		CC-7: Administrative Reforms in India: Impact of Globalization – RTI, Lokpal and Lokayukta		Paper-VI; Concepts of Power and Authority; Types of Authority	
	Sem-II (H)		Sem-IV (H)			
January	CC-4; Union Executive: President and Prime Minister: Powers and functions;		CC-10; Evolution of international organizations.		Paper-VI; Feminism: Meaning, Significance and Different Schools	
February	CC-4; Governor and Chief Minister: Powers and function		CC-10; United Nations: its Emergence; General Assembly and Security Council; Secretariat; Secretary General; International Court of Justice: Composition and Functions		Paper-VI; Environment and Politics;	
March	CC-4; Judiciary: Supreme Court and High Courts – Composition and Functions;		CC-10; Peacekeeping and Peacebuilding Role of the UN.		Paper-VI; Environment Movements: An Overview; Eco-Feminism	
April	CC-4; Party System in India: Features and Trends;		CC-10; Regional Economic Organizations-APEC & OPEC		Paper-VI; Religion and Politics; Concept of Secularism	
May	CC-4; Coalition Governments		CC-10; Regional security organizations-NATO & ARF.		Paper-VI; State and Civil Society: Media, Society and Politics	
June	CC-4; Electoral Process: Election Commission – Composition and Functions; Electoral Reforms		CC-10; Regional Organizations: SAARC and ASEAN, BRICS – Goals and Functioning		Paper-VI; Ethnicity and Nationalism: Concepts; Impact of Globalization on Ethnic Politics	

DEPARTMENT OF POLITICAL SCIENCE
TEACHING PLAN OF GOPINATH CHOUDHURY

Political Science (General) (2018-19)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-3 (G)	No. of Lecture
July	GE-1/CC-1A; Marx and Engels: Dialectical and Historical Materialism; Revolution;		GE-3/CC-1C; Tagore ; State, Society and Nation.		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
August	GE-1/CC-1A; Marx and Engels: Dialectical and Historical Materialism; Revolution;		GE-3/CC-1C; Tagore ; State, Society and Nation.		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
September	GE-1/CC-1A; Marx and Engels: Dialectical and Historical Materialism; Revolution;		GE-3/CC-1C; Tagore ; State, Society and Nation.		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
October	GE-1/CC-1A; Marx and Engels: Dialectical and Historical Materialism; Revolution;		GE-3/CC-1C; Tagore ; State, Society and Nation.		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
November	GE-1/CC-1A; Lenin: Imperialism		GE-3/CC-1C; Tagore ; State, Society and Nation.		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
December	GE-1/CC-1A; J.S. Mill: Concept of Liberty		GE-3/CC-1C; Tagore ; State, Society and Nation.		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
January	Sem-II (G)		Sem-IV (G)			
	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D; Union Executive: President and Prime Minister:		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
February	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Union Executive: President and Prime Minister		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
March	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Union Executive: President and Prime Minister		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
April	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
May	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	
June	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Nuclear Arms Control : NPT and CTBT—India's Position	

DEPARTMENT OF POLITICAL SCIENCE

TEACHING PLAN OF Madhabi Laha

Political Science (Honours) (2018-19)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-3 (H)	No. of Lecture
July	CC-2; The meaning of Politics and Political Theory;		CC-6: Public Administration: Meaning, dimensions and significance of the; Evolution of Public Administration as a Discipline ; Identity crisis of Public Administration		Paper-VII; Public Administration: Nature and Scope;	
August	CC-2; Importance of Political Theory: Decline and Resurgence		CC-6: Classical Theories: Scientific Management(F.W. Taylor); Administrative Management(Gullick, Urwick); Ideal type bureaucracy(Weber)		Paper-VII; Private and Public Administration; Evolution of Public Administration as a Discipline	
September	CC-2; Different Approaches: (a) Traditional (b) Behavioural		CC-6: Neo-Classical Theories: Human Relations(Elton Mayo); Decision Making Theory(Herbert Simon); Motivation Theory(Herzberg, Maslow)		Paper-VII; Concepts of Administration: Hierarchy; Unity of Command; Span of Control;	
October	CC-2; Different Approaches; (c) Post-Behavioural (d) Marxist		CC-6: Contemporary Theories: Ecological Approach(Fred Riggs); Innovation and Entrepreneurship(Peter Drucker)		Paper-VII; Concepts of Administration: Line and Staff; Centralization, Decentralization and Delegation	
November	CC-2; The Concept of Sovereignty: (a) Monistic (b) Pluralist (c) Popular		CC-6: Concepts of Administration: Hierarachy, Span of Control, Unity of Command, Line and Staff, Centralization- Decentralization, Devolution, Delegation		Paper-VII; Bureaucracy: Nature and Functions; Generalists and Specialists	
December	CC-2; The Concept of Sovereignty: (a) Monistic (b) Pluralist (c) Popular		CC-6: Major approaches in Public Administration – New Public Administration – New Public Administration, New Public Management, New Public Service Approach, Feminist Perspective.		Paper-VII; Development Administration: Meaning and Scope; Ecology and Sustainable Development; Riggsian Model	
January	Sem-II (H)		Sem-IV (H)			
	CC-4; The Constituent Assembly: its Composition and role		CC-8; Nature and Scope of International Relations; Idealist, Realist, and Neo-Realist approaches in IR.		Paper-VII; All-India Services and Central Services: Recruitment and Training; Union and State Public Service Commissions: Composition, Functions and Role	
February	CC-4; The Preamble and its Significance Directive Principles of State Policy		CC-8; National Power: Concepts and Elements		Paper-VII; Union Administration: Cabinet Secretariat; Cabinet Committees and PMO	
March	CC-4; Fundamental Rights and Duties		CC-8; Balance of Power and Collective Security Origin and End of the Cold War		Paper-VII; Administrative Reforms in India: Impact of Globalization – RTI, Lokpal and Lokayukta	
April	CC-4; Nature of Indian Federalism: Centre-States relations – Legislative, Administrative and Financial		CC-8; Post Cold War global issues: (a) Globalization (b) Human Rights (c) Terrorism		Paper-VII; State Administration in West Bengal: Chief Secretary; Divisional Commissioner; District Magistrate and Block Development Officer	
May	CC-4; Union Legislature: LokSabha and RajyaSabha – Organization, Functions		CC-8; Disarmament: NPT,CTBT, and NSG.		Paper-VII; Rural Administration in West Bengal: Panchayati Raj Systems	
June	CC-4; Law-making Procedures; the Speaker; Procedure of Constitutional Amendment		CC-8; Foreign Policy and Diplomacy: Concepts, Determinants and Objectives 8.Indian Foreign Policy: Basic Tenets.		Paper-VII; Urban Administration in West Bengal: Municipalities and Municipal Corporations.	

DEPARTMENT OF POLITICAL SCIENCE

TEACHING PLAN OF Madhabi Laha

Political Science (General) (2018-19)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-3 (G)	No. of Lecture
July	GE-1/CC-1A; Hobbes, Locke and Rousseau: Concept of Sovereignty		GE-3;CC-1C; Gandhi : Satyagraha; trusteeship		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
August	GE-1/CC-1A; Hobbes, Locke and Rousseau: Concept of Sovereignty		GE-3;CC-1C; Gandhi : Satyagraha; trusteeship		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
September	GE-1/CC-1A; Hobbes, Locke and Rousseau: Concept of Sovereignty		GE-3;CC-1C; Gandhi : Satyagraha; trusteeship		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
October	GE-1/CC-1A; Hobbes, Locke and Rousseau: Concept of Sovereignty		GE-3;CC-1C; Gandhi : Satyagraha; trusteeship		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
November	GE-1/CC-1A; Hobbes, Locke and Rousseau: Concept of Sovereignty		GE-3;CC-1C; Gandhi : Satyagraha; trusteeship		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
December	GE-1/CC-1A; Hobbes, Locke and Rousseau: Concept of Sovereignty		GE-3;CC-1C; Gandhi : Satyagraha; trusteeship		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
	Sem-II (G)		Sem-IV (G)			
January	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D; Union Executive: President and Prime Minister:		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
February	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Union Executive: President and Prime Minister		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
March	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Union Executive: President and Prime Minister		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
April	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
May	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	
June	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Regional Co-operation : SAARC - objectives, problems and prospects.	

DEPARTMENT OF POLITICAL SCIENCE

TEACHING PLAN OF Sudip Mondal

Political Science (Honours) (2018-19)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-3 (H)	No. of Lecture
July	CC-1; Marx and Engels: Dialectical and Historical Materialism; Lenin: Imperialism		CC-5; Legislatures in UK and USA: Composition and Functions.		Paper-VIII; Early Indian Ideas on State and Government:	
August	CC-1; Marx and Engels: Dialectical and Historical Materialism; Lenin: Imperialism		CC-5; Legislatures in UK and USA: Composition and Functions		Paper-VIII; Kautilya's Concept of "Dandaniti" and the Theory of "Saptanga"	
September	CC-1; Marx and Engels: Dialectical and Historical Materialism; Lenin: Imperialism		CC-5; Legislatures in UK and USA: Composition and Functions		Paper-VIII; Main Features of Medieval Political Thought	
October	CC-1; J.S. Mill and Isaiah Berlin: concept of Liberty		CC-5; Judiciary in UK, USA and France		Paper-VIII; Rammohun Roy: Perception of British Colonial Rule and Role as a "Modernizer"	
November	CC-1; J.S. Mill and Isaiah Berlin: concept of Liberty		CC-5; Judiciary in UK, USA and France		Paper-VIII; Bankimchandra and Vivekananda: Views on Nationalism and Social Regeneration	
December	CC-1; J.S. Mill and Isaiah Berlin: concept of Liberty		CC-5; Judiciary in UK, USA and France		Paper-VIII; Gandhi: Non-Violence and Satyagraha	
	Sem-II (H)		Sem-IV (H)			
January	CC-3; Rabindranath Tagore ; State, Society and Nation.		SEC-2; Constitution – fundamental rights,		Paper-VIII; Tagore: State, Society and Nation	
February	CC-3; Rabindranath Tagore ; State, Society and Nation		SEC-2; Fundamental duties, other constitutional rights		Paper-VIII; Savarkar: Concept of Hindutva	
March	CC-3; Rabindranath Tagore ; State, Society and Nation		SEC-2; Laws relating to dowry, sexual harassment and violence against women – laws relating to consumer rights and cyber crimes		Paper-VIII; Syed Ahmed Khan and M.A. Jinnah: Religion-Nationalism Interface	
April	CC-3; Rabindranath Tagore ; State, Society and Nation		SEC-2; Anti-terrorist laws: Implication for security and human rights		Paper-VIII; Jawaharlal Nehru, Subhas Chandra Bose and Jay Prakash Narayan: Socialist Ideas;	
May	CC-3; B.R. Ambedkar : Social Justice		SEC-2; System of courts/ tribunals and their jurisdiction in India – criminal and civil courts, writ jurisdiction, specialized courts such as juvenile courts, Mahila courts and tribunals		Paper-VIII; M.N. Roy: Radical Humanism	
June	CC-3; B.R. Ambedkar : Social Justice		SEC-2; Alternate dispute such as lokadalats, non-formal mechanisms		Paper-VIII; Ambedkar: Concept of Social Justice	

DEPARTMENT OF POLITICAL SCIENCE

TEACHING PLAN OF Sudip Mondal

Political Science (General) (2018-19)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-3 (G)	No. of Lecture
July	GE-1/CC-1A; Machiavelli: Concept of statecraft and power politics		GE-3/CC-1C; Ambedkar : Social Justice.		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
August	GE-1/CC-1A; Machiavelli: Concept of statecraft and power politics		GE-3/CC-1C; Ambedkar : Social Justice.		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
September	GE-1/CC-1A; Machiavelli: Concept of statecraft and power politics		GE-3/CC-1C; Ambedkar : Social Justice.		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
October	GE-1/CC-1A; Machiavelli: Concept of statecraft and power politics		GE-3/CC-1C; Ambedkar : Social Justice.		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
November	GE-1/CC-1A; Machiavelli: Concept of statecraft and power politics		GE-3/CC-1C; Ambedkar : Social Justice.		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
December	GE-1/CC-1A; Machiavelli: Concept of statecraft and power politics		GE-3/CC-1C; Ambedkar : Social Justice.		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
	Sem-II (G)		Sem-IV (G)			
January	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D; Union Executive: President and Prime Minister:		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
February	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Union Executive: President and Prime Minister		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
March	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Union Executive: President and Prime Minister		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
April	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
May	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	
June	GE-2/CC-1B; Liberalism and Neo-Liberalism		GE-4/CC-1D Powers and functions; Governor and Chief Minister		Paper-IV; Globalization : role of the IMF, World Bank and WTO with special reference to India	

DEPARTMENT OF POLITICAL SCIENCE

TEACHING PLAN OF Subrata Kumar Gupta

Political Science (Honours) (2018-19)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-3 (H)	No. of Lecture
July	CC-1; Ancient Greek Political Thought: Plato – Justice; Aristotle: Concept of the State		CC-5: Transition from Comparative Government to Comparative Politics - Scope and Objectives of Comparative Politics.		Paper-V Nature and Scope of International Relations: Realist, Systems and International Society Approaches.	
August	CC-1 Medieval Political Thought: Main features.		CC-5: Conventions and the Rule of Law in UK ; Bill of Rights in the USA.		Paper-V; National Power: Concepts and Elements.	
September	CC-1 Renaissance and Machiavelli: Concept of Power and Secularization of Politics.		CC-5; Unitary Systems: UK and France; Federal Systems: USA		Paper-V Balance of Power and Collective Security.	
October	CC-1; Hobbes: Concept of Sovereignty;		CC-5; Parliamentary and Presidential Systems: UK and USA and China		Paper-V Origin and End of the Cold War	
November	CC-1; Locke: Foundations of Liberalism; Rousseau: General Will		CC-5; Party System in UK and USA.		Paper-V Post Cold War global issues: (a) Globalization (b) Human Rights (c) Terrorism	
December	CC-1; Rousseau: General Will		CC-5; Party System in France, Nigeria and Mexico.		Paper-V Disarmament: PTBT, NPT and CTBT	
January	Sem-II (H) CC-3; Ancient Indian Political Thought : Features.		Sem-IV (H) CC-9; Political Sociology and Sociology of Politics: Nature and Scope		Paper-V Regional Cooperation: SAARC and ASEAN – Goals and Functioning	
February	CC-3; Kautilya's theory of Saptanga and the concept of 'Dandaniti'.		CC-9; Political Culture: Meaning, Components and Types; Political Socialization: Meaning, Role and Agencies		Paper-V Foreign Policy; Concepts, Determinants and Objectives	
March	CC-3; Main features of medieval Muslim Political Thought.		CC-9; Political Participation: Meaning and Components Concepts of Power and Authority; Types of Authority		Paper-V Diplomacy; Concepts, Determinants and Objectives	
April	CC-3; Raja Rammohun Roy : perception of British Colonial Rule and their role as Modernizers.		CC-9; Feminism: Meaning, Significance and Different Schools		Paper-V United Nations: its Emergence; General Assembly and Security Council;	
May	CC-3; Bankim Chandra Chattopadhyay, Vivekananda : Nationalism.		CC-9; Environment and Politics; Environment Movements: An Overview; Eco-Feminism Religion and Politics; Concept of Secularism		Paper-V Secretariat; Secretary General; International Court of Justice: Composition and Functions	
June	CC-3; Mohandas Karamchand Gandhi : Satyagraha; trusteeship		CC-9; State and Civil Society: Media, Society and Politics		Paper-V Indian Foreign Policy: Basic Tenets; India's relations with neighbours: (a) Sino-Indian ; (b) Indo-Pakistan; (c) Indo-Bangladesh; (d) Indo-US Relations	

DEPARTMENT OF POLITICAL SCIENCE

TEACHING PLAN OF Subrata Kumar Gupta

Political Science (General) (2018-19)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-3 (G)	No. of Lecture
July	GE-1/CC-1A: Ancient Greek Political Thought: Main Features		GE-3/CC-1C Ancient Indian Political Thought : Features ;		Paper-IV Secularism and Communalism.	
August	GE-1/CC-1A Ancient Greek Political Thought: Main Features		GE-3/CC-1C Kautilya's theory of Saptanga and the concept of 'Dandaniti'.		Paper-IV Caste and Politics in India	
September	GE-1/CC-1A Ancient Greek Political Thought: Main Features		GE-3/CC-1C Main features of medieval Muslim Political Thought		Paper-IV Politics of reservation	
October	GE-1/CC-1A Medieval Political Thought: Main features		GE-3/CC-1C RammohunRoy : perception of British Colonial Rule and their role as Modernizers..		Paper-IV Human rights in India	
November	GE-1/CC-1A Medieval Political Thought: Main features		GE-3/CC-1C Bankim Chandra; Nationalism.		Paper-IV Violence against women and children : remedial measures.	
December	GE-1/CC-1A Medieval Political Thought: Main features		GE-3/CC-1C Vivekananda : Nationalism.		Paper-IV Environment and Politics in India	
January	Sem-II (H)		Sem-IV (H)			
	CC-3; Ancient Indian Political Thought : Features.		CC-9; Political Sociology and Sociology of Politics: Nature and Scope		Paper-IV Political Corruption in India	
February	CC-3; Kautilya's theory of Saptanga and the concept of 'Dandaniti'.		CC-9; Political Culture: Meaning, Components and Types; Political Socialization: Meaning, Role and Agencies		Paper-IV Role of media and civil society.	
March	CC-3; Main features of medieval Muslim Political Thought.		CC-9; Political Participation: Meaning and Components		Paper-IV Right to Information.	
April	CC-3; Raja Rammohun Roy : perception of British Colonial Rule and their role as Modernizers.		CC-9; Concepts of Power and Authority; Types of Authority		Paper-IV Gender and politics	
May	CC-3; Bankim Chandra Chattopadhyay, Vivekananda : Nationalism.		CC-9; Feminism: Meaning, Significance and Different Schools		Paper-IV State of women's empowerment in India	
June	CC-3; Mohandas Karamchand Gandhi : Satyagraha; trusteeship		CC-9; Environment and Politics; Environment Movements: An Overview; Eco-Feminism		Paper-IV India's foreign policy - basic tenets	

DEPARTMENT OF CHEMISTRY
TEACHING PLAN OF DR. TRIJIT BHATTACHARYYA

Chemistry (Honours) (2018- 2019) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part III (H)	No. of Lecture
Jul	Theory: CC1: Bonding and Physical properties: electronic displacement	6	Theory CC7: Chemistry of alkenes Practical CC7: Qualitative Analysis of Single Solid Organic Compounds part 1	6	Theory Paper X: Methodology in Organic Synthesis part I	8
	Practical CC1: Separation of Binary mixture	4		2	Practical CC12: TLC separation of a mixture containing 2/3 amino acids 2. TLC separation of a mixture of dyes (fluorescein and methylene blue)	2
Aug	Theory: CC1: General Treatment of reaction Mechanism Practical CC1: Separation of Binary mixture	4 2	Theory CC7: : Chemistry of alkynes Practical CC: Qualitative Analysis of Single Solid Organic Compounds Part 2	4 2	Theory Paper X: Methodology in Organic Synthesis part II Practical CC12: Paper chromatographic separation of a mixture containing 2/3 amino acids	7 4
	Theory: CC1: Stereochemistry: symmetry elements, point group and projection formula Practical CC1: Determination of boiling point of liquid	4 2	Theory CC7: Carbonyl and Related Compounds Part1 Practical CC7: Melting point of the given compound Preparation of one derivative of the given sample Part1	6 2	Theory Paper X: Pericyclic Reaction Part I Practical CC12: Column chromatographic separation of mixture of dyes	8 2
Oct	Theory: CC1: Stereochemistry: Optical activity and absolute configuration Practical CC1: Separation of Binary mixture	7 2	Theory CC7: Carbonyl and Related Compounds Part II Practical CC7: Preparation of one derivative of the given sample Part 2	6 2	Theory PaperX: Spectroscopy Part I Practical CC12: Spectroscopic Analysis of Organic Compounds: Part 1	8 2
	Theory: CC1: Reactive Intermediates Practical CC1: Practical Revision	7 2	Theory CC7: Organic Name reactions Practical CC7: Detection of unknown organic sample	7 2	Theory PaperX: Spectroscopy Part II Practical CC12: Spectroscopic Analysis of Organic Compounds: Part 2	8 4
Dec	Theory: CC1: Organic chemistry Special classes + doubt clearing+ discussions Practical CC1: Organic Chemistry Practice classes	4 2	Theory CC6: Mechanism of hydrolysis of ester and related compounds Practical CC7: Revision	3 1	Theory PaperX: Spectroscopy Part III Nucleic Acids Part I Practical CC12: Revision	3 1
	Sem-II (H)		Sem-IV (H)		Sem-VI (H)	
Jan	Theory CC3: Stereochemistry II Concept of prostereoisomerism:	6	Theory CC10 The Logic of Organic Synthesis: Retrosynthetic analysis	5	Theory Paper X Nucleic Acids Part II Green Chemistry	2
	Practical CC3: Nitration of acetanilide,	2	Practical CC10 1. Estimation of glucose by titration using Fehling's solution	2	Practical	5 2

					DSE-3: Benzoin condensation using Thiamine Hydrochloride as a catalyst	
Feb	Theory CC3: Chirality arising out of stereoaxis	5	Theory CC10: The Logic of Organic Synthesis: Strategy of ring synthesis	5	Theory Paper X: Dyes	3
	Practical CC3: Acetylation of phenols/aromatic amines	2	Practical CC10: 3. Estimation of aromatic amine (aniline) by bromination (Bromate-Bromide) method	2	Practical DSE-3: Photoreduction of benzophenone to benzopinacol in the presence of sunlight.	4
Mar	Theory CC3: Conformation.	5	Theory CC10: Organic Spectroscopy, IR spectra	4	Theory	4
	Practical CC3: 1. Side chain oxidation of toluene and p-nitrotoluene	2	Practical CC10: Estimation of formaldehyde (Formalin)	2	Practical DSE-3: Preparation of propene by two methods can be studied. Other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy.	
Apr	Theory CC3: Nucleophilic substitution reactions Part 1	6	Theory CC10: Organic Spectroscopy, NMR spectra, Part 1	6	Theory	3
	Practical CC3: 1. Diazo coupling reactions of aromatic amines	2	Practical CC10 7. Estimation of urea (hypobromite method)	2	Practical DSE-3: Revision	
May	Theory CC3: Nucleophilic substitution reactions Part 2	6	Theory CC10: Organic Spectroscopy: NMR Spectra PartII	6	Theory	4
	Practical CC3: 1. Selective reduction of m-dinitrobenzene to m-nitroaniline	2	Practical CC10: Revision	2	Practical DSE-3: Revision	
June	Theory CC3: Stereoselectivity and Stereospecificity, doubt clearing	2	Theory CC10: Application Of Spectroscopy and Doubt clearing	2	Theory	6
	Practical CC3: Practical revision	2	Practical CC10: Practical Revision	1	Practical DSE-3: Revision	

Debabrata Saha

Head of the Department

Department of Chemistry,

Suri Vidyasagar College

DEPARTMENT OF CHEMISTRY

TEACHING PLAN OF PROF PANKAJ ROY Chemistry (Honours) (2018-19) (July 2018 – June 2019)

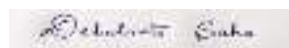
Month	Sem-I (H)	No. of Lectures	Sem-III (H)	No. of Lectures	Old III(H)	No. of Lectures
Jul	Theory: CC2: Kinetic Theory of gases:	6	Theory CC5: <i>Transport Processes:</i> Fick's law: .	6	Theory Conductance,	6
	Practical CC2: Determination of pH of unknown solution.	2	Practical CC5; Study of saponification reaction conductometrically.	4	Practical : Potentiometric titrations of an acid or a base .	4
Aug	Theory: CC2: Maxwell's distribution of speed and energy.	8	Theory CC5: Viscosity.	8	Theory Kohlrausch's law, Walden's rule, ion conductance; conductance measurement	8
	Practical: CC2: Determination of the reaction rate constant .	2	Practical CC5: Study of viscosity of unknown liquid.	4	Practical: Viscosity coefficient of a liquid/solution by Ostwald viscometer	4
Sept	Theory: CC2: Kinetic energy distribution.	8	Theory: CC5: Conductance and transport number.	8	Theory: transport number, ion atmosphere, asymmetry and electrophoretic effects,	8

	Practical : CC2: Determination of the reaction rate constant.	4	Practical : CC5: Conductometric titration.	6	Wien effect and Debye-Falkenhagen effect, Practical : Equilibrium constant of the reaction $KI + I_2 = KI_3$ by partition method	4
Oct	Theory: CC2: Chemical kinetics; Rate law,order. Practical : CC2: Determination of solubility product.	6 2	Theory : CC5: Conductance,Kohlrausch's law. Practical : CC5: Verification of Ostwald's dilution law.	4 2	Theory : Debye-Hückel theory Practical : Solubility/solubility product.	6 4
Nov	Theory: CC2: Enzyme catalysis reaction. Practical : CC2: Study of kinetics ofhydrolysis.	4 4	Theory : CC5: Nernst's distribution law; Practical : CC5: 1. Determination of partition coefficient .	6 4	Theory: Nernst equation Practical: Solubility/solubility product.	4 4
Dec	Theory: CC2: Special classes + doubt clearing+ discussions	4	Theory : CC5: Special classes + doubt clearing+ discussions	4	Theory : Properties of solids Practical: Conductometric titrations of an acid or a base	8 6

	Practical CC2: Practice classes	2	CC5: Practice classes	4	(acid may be monobasic/dibasic, and similarly for the base)	
Jan	Sem-II (H)		Sem-IV (H)		III(H)	
			Theory : CC8: <i>Application of Thermodynamics – II</i> :Colligative properties: Raoult's law; Practical : CC8: Determination of solubility of sparingly soluble salt.	4 4	Theory : Unit cell, Bravais lattice, Practical : Potentiometric titrations	8 4
Feb			Theory : CC8: <i>Application of Thermodynamics – II</i> Colligativeproperties; Practical : CC8: Determination of solubility of sparingly soluble salt in water.	10 4	Theory : Surface phenomenon; Adsorption: Practical : Surface tension of a liquid/solution by drop-number method	8 4

Mar			Theory : CC8: <i>Application of Thermodynamics – II</i> ;Phase rule : Practical: CC8; Study of phenol-water phase diagram.	8 4	Theory : Symmetry and group Practical : Practice	6 4
Apr			Theory : CC8: <i>Application of Thermodynamics – II</i> ;Phase rule ;Phase diagram for water, CO ₂ , Sulphur. Practical : CC8; Effect of ionic strength.	6 4	Theory : Symmetry and group;Determination of molecular point groups Practical : Practice	6 4
May			Theory : CC8: <i>Application of Thermodynamics – II</i> ;Binary solutions: Liquid-liquid phase diagram.	6	Theory Special classes	4 Exam

			Practical : CC8; Determination of Ksp for AgCl.	4		
June			Theory : CC8: Special classes	4	Special classes	Exam



Head of the Department,
Department of Chemistry,
Suri Vidyasagar College

TEACHING PLAN OF DEBABRATA SAHA
Chemistry (Honours) 2018-19 (July 2018-June 2019)

Month	SEM-I (H)	Sem-III(H)	PART-III(H) [PAPER-IX(A&B)]
Jul	No Inorganic Core Course for SEM-I Honours. No Classes.	CC-6 MODULE-1B UNIT-I & II Covalent bond: Polarizing power and polarizability, ionic potential, Fajan's rules. Lewis structures, formal charge. Valence Bond Theory. The hydrogen molecule (Heitler-London approach), directional character of covalent bonds, hybridizations, equivalent and non-equivalent hybrid orbitals.	MODULE-02 UNIT-I Fundamentals, energy profile of reactions. UNIT-II Measurement of reaction rates, rate laws and mechanism and factors affecting them, activation parameters.
Aug		CC-6 MODULE-1B UNIT-III Bent's rule, Dipole moments, VSEPR theory, shapes of molecules and ions containing lone pairs and bond pairs (examples from main groups chemistry) and multiple bonding (σ and π bond approach).	MODULE-02 UNIT-III Substitution reactions in octahedral cobalt (III) and square planar platinum (II) complexes. UNIT-IV Cis/Trans effect and applications, spectator ligand, nucleophilicity parameter, mechanistic switchover along group and across period.
Sept		CC-6 MODULE-2B UNIT-I Metallic Bond: Qualitative idea of valence bond and band theories. Semiconductors and insulators, defects in solids stoichiometric and non-stoichiometric.	MODULE-04 UNIT-I Definition, nomenclature, classification; 18-electron rule – application/exception, EAN. UNIT-II Preparation, properties, structure, bonding, reactivities and applications of alkyls and aryls of Li, Al, Hg, Sn, Ti.
Oct		CC-6 MODULE-2C UNIT-I Weak Chemical Forces: van der Waals forces, ion-dipole forces, dipole-dipole interactions, induced dipole interactions, Instantaneous dipole-induced dipole interactions. Repulsive forces.	MODULE-04 UNIT-III A brief account of metal-ethylenic complexes and homogeneous hydrogenation, some simple fluxional molecules. UNIT-IV Coordinative unsaturation: oxidative addition, reductive elimination and insertion reactions
Nov		CC-6 MODULE-02 UNIT-II Intermolecular forces: Hydrogen bonding (theories of hydrogen bonding, valence bond treatment), receptor-guest interactions, Halogen bonds. Effects of chemical force, melting and boiling points.	MODULE-05 UNIT-I Carbonyl complexes: synthesis of mono-, di- and polynuclear aggregates; substitution, reduction, oxidation, reaction on metal bound CO as functional group; $\nu(\text{CO})$ stretching frequency as diagnostic tool in the identification of ligational motifs (bridging/terminal/metalloligand), structure, bonding, π -acidity of CO; effect of co-ligands on $\nu(\text{CO})$, basicity of bound CO, probing reactivity of bound CO.
Dec		CC-6 MODULE-03 UNIT-I Nuclear stability and nuclear binding energy. Nuclear forces: meson exchange theory. Nuclear models (elementary idea): Concept of nuclear quantum number, magic numbers.	MODULE-05 UNIT-II Nitrosyl complexes: synthesis of mixed ligand compounds of different nuclearities; reaction on metal bound NO as functional group; $\nu(\text{NO})$ as marker in proposing different oxidation state (NO^+ , NO, NO^-) of free and bound NO, linear and bent NO and reactivity: electrophilicity and nucleophilicity. UNIT-III Cyclopentadienyl, benzene, acetylacetonate, cyanide, N_2 and O_2 complexes: organometallic view, hapticity, quasi-aromaticity, super-aromaticity, electrophilic/nucleophilic reactions; $\nu(\text{C}=\text{C})$, $\nu(\text{C}=\text{O})$, $\nu(\text{C}\equiv\text{N})$, $\nu(\text{N}=\text{N})$ and $\nu(\text{O}=\text{O})$ as marker of hapticity and reactivity.

	SEM-II(H)	SEM-IV (H)	
Jan	CC-3 MODULE-02 UNIT-I & II Modern IUPAC Periodic table, Effective nuclear charge, screening effects and penetration, Slater's rules.	CC-9 MODULE-02 UNIT-I Relative stability of different oxidation states, diagonal relationship and anomalous behaviour of first member of each group. Allotropy and catenation.	MODULE-08 UNIT-I Significant figures, precision and accuracy, errors – systematic and random, mean, variance, standard deviation, different forms of standard deviations, sample and universal standard deviations. UNIT-II Qualitative idea about different frequency distribution, normal distribution, mathematical expression for normal distribution, calculation of area under normal distribution curve by numerical integration, relation between probability and area. UNIT-III Propagation of errors, general and specific cases, functions involving multiplication, division, exponential and logarithmic calculations.
Feb	CC-3 MODULE-02 UNIT-III & IV Atomic radii, ionic radii (Pauling's univalent), covalent radii, lanthanide contraction. Ionization potential, electron affinity and electronegativity (Pauling's, Mulliken's and Allred-Rochow's scales) and factors influencing these properties, group electronegativities.	CC-9 MODULE-02 UNIT-II Study of the following compounds with emphasis on structure, bonding, preparation, properties and uses. Beryllium hydrides and halides. Boric acid and borates.	MODULE-08 UNIT-IV The t-distribution and application, confidence limit, significance testing, least-squares analysis, sensitivity and detection limit. MODULE-9A UNIT-I Acid-base reaction: polyprotic acids, mixture of monoprotic acids, reactions in non-aqueous solvents, levelling effect, titration in basic solvents and in glacial acetic acid.
Mar	CC-3 MODULE-02; UNIT-V Group trends and periodic trends in these properties in respect of s-, p- and d-block elements. Secondary periodicity, Relativistic Effect, Inert pair effect. MODULE-03; UNIT-I Acid-Base concept: Arrhenius concept, theory of solvent system (in H ₂ O, NH ₃ , SO ₂ and HF), Bronsted-Lowry's concept, relative strength of acids, Pauling's rule.	CC-9 MODULE-02 UNIT-III & IV Boron nitrides, borohydrides (diborane) and graphitic compounds, silanes. Oxides and oxoacids of nitrogen, phosphorus, sulphur and chlorine. Peroxo acids of sulphur.	MODULE-9A UNIT-II Redox reaction: Redox titrations: feasibility, indicator, different types like chromometry, permanganometry, iodometry and iodimetry. UNIT-III Complexometric reaction: different multidentate ligands as complexometric titrants, applications of EDTA, metal ion indicator, typical examples of EDTA titration, masking/demasking agent. UNIT-IV Precipitation reaction: a few typical examples like Vohlard titration, use of adsorption indicators.
Apr	CC-3 MODULE-03; UNIT-II & III Lux-Flood concept, Lewis concept, group characteristics of Lewis acids, solvent levelling and differentiating effects. Thermodynamic acidity parameters, Drago-Wayland equation. Superacids, Gas phase acidity and proton affinity	CC-9 MODULE-02 UNIT-V&VI Sulphur-nitrogen compounds, Basic properties of halides and polyhalides, interhalogen compounds, polyhalides, pseudohalides, fluorocarbons and chlorofluorocarbons.	MODULE-9C UNIT-I Spectrophotometric analysis; Principle and terminology, Lambert-Beer's law and its limitations. UNIT-II Colorimetric determination of single analyte, spectrophotometric determination of multicomponent analytes, atomic absorption/emission spectrometry: principles and instrumentations, estimation of sodium and potassium in water samples.
May	CC-3 MODULE-03; UNIT-IV .HSAB principle. Acid-base equilibria in aqueous solution (Proton transfer equilibria in water), pH, buffer. Acid-base neutralization curves; indicator, choice of indicators.	CC-9 MODULE-03 UNIT-I Noble Gases: Occurrence and uses, rationalization of inertness of noble gases, Clathrates; preparation, structures (VSEPR theory) and properties of XeF ₂ , XeF ₄ and XeF ₆ ; Nature of bonding in noble gas compounds (Valence bond treatment and MO treatment for XeF ₂ and XeF ₄). Xenon-oxygen	MODULE-10 UNIT-I Methodologies in separational chemistry; Basic principle of solvent extraction, distribution ratio, extraction equilibria and effect of pH, Craig, counter-current extraction: basic principle, simple applications. UNIT-II TLC/column chromatography: R _f -value and its significance, elution, migration rate, column efficiency, column resolution, band broadening; ion-exchange separation: basic principle, exchange capacity. UNIT-III Elementary idea on GC and HPLC.
Jun	Special class, questions -answers discussions and evaluation.	Special class, questions -answers discussions and evaluation.	Special class, questions -answers discussions and evaluation.

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SURI VIDYASAGAR COLLEGE

Department of Chemistry

Teaching Plan of Dr. Sandip Mondal for the Honours Course (2018-2019)

Month	SEM - I	SEM - III	SEM – V	PART - III
Jul	-	Theory Chemical Bonding-I CC-6: Ionic bond Practical Estimation of Cu(II)	-	PAPER-VIA <u>CHT 31b</u> ,Unit-II Organometallic Compounds
Aug	-	Theory Chemical Bonding-I CC-6: Ionic bond Practical Estimation of Vitamin C. Estimation of arsenite by iodimetric method	-	PAPER-VIA <u>CHT 31b</u> ,Unit-II Organometallic Compounds and catalyst
Sept	-	Theory Chemical Bonding-II CC-6: Other Types of Bonding: Molecular orbital concept of bonding. Practical Estimation of Cu in brass.	-	PAPER-VIA <u>CHT 31a</u> ,Unit-II Chemistry of d-block elements PAPER-VIA <u>CHT 31b</u> ,Unit-II Organometallic Compounds
Oct	-	Theory Chemical Bonding-II CC-6: Other Types of Bonding: Molecular orbital concept of bonding Practical Estimation of Cr and Mn in Steel.	-	PAPER-VIA <u>CHT 31a</u> ,Unit-II Chemistry of f-block elements
Nov	-	Theory Chemical Bonding-II CC-6: Other Types of Bonding: Metallic bonding Practical Repetition	-	PAPER-VIB <u>CHT 31c</u> ,Unit-I Electrochemical and spectral analysis, and analytical separation
Dec	-	Theory Chemical Bonding-II CC-6: Other Types of Bonding: Weak Chemical Forces: Practical Repetition	-	PAPER-VIB <u>CHT 31c</u> ,Unit-I Electrochemical and spectral analysis, and analytical separation
	SEM - II	SEM - IV	SEM – VI	
Jan	Theory CC-3: Extra nuclear Structure of atom Practical Estimation of Fe(II) using standardized KMnO ₄ solution and Estimation of oxalic acid and sodium oxalate in a given mixture	Theory CC-9: Inorganic Chemistry III:- General Principles of – Metallurgy- Practical Complexometric titration: Zn(II)	-	PAPER-VIB <u>CHT 31d</u> ,Unit-I Gravimetric and titrimetric methods of analysis

Feb	Theory CC-3: Extra nuclear Structure of atom Practical 3. Estimation of Fe(II) and Fe(III) in a given mixture using K ₂ Cr ₂ O ₇ solution.	Theory CC-9: Inorganic Chemistry III: General Principles of Metallurgy Practical Zn(II) in a Zn(II) and Cu(II) mixture	-	PAPER-VIB CHT 31d, Unit-I Gravimetric and titrimetric methods of analysis
Mar	Theory CC-3: Extra nuclear Structure of atom and numerical problem solve Practical 4. Estimation of Fe(III) and Mn(II) in a mixture using standardized KMnO ₄ solution	Theory CC-9: Inorganic Chemistry III: Coordination Chemistry-I Practical Ca(II) and Mg(II) in a mixture and Hardness of water	-	Special/Remedial class, questions -answer discussions and numerical problem solve
Apr	Theory CC-3: Redox Reactions and precipitation reactions Practical Estimation of Fe(III) and Cu(II) in a mixture using K ₂ Cr ₂ O ₇ .	Theory CC-9: Inorganic Chemistry III: Coordination Chemistry-I Practical Inorganic preparations 1. [Cu(CH ₃ CN) ₄]PF ₆ /ClO ₄ and Potassium dioxalatodiaquachromate(III)	-	Final Exam.
May	Theory CC-3: Redox Reactions and precipitation reactions Practical Estimation of Fe(III) and Cr(III) in a mixture using K ₂ Cr ₂ O ₇ .	Theory CC-9: Inorganic Chemistry –II: Noble Gases Practical Tetraamminecarbonatocobalt (III) ion and Potassium tris(oxalate)ferrate(III)	-	-
June	Theory CC-3: Redox Reactions and precipitation reactions and numerical problem solve Practical Repetition	Theory CC-9: Inorganic Chemistry –II: Inorganic Polymers Practical Tris-(ethylenediamine) nickel(II) chloride and [Mn(acac) ₃] and Fe(acac) ₃ (acac= acetylacetonate).	-	

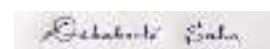
Debabrata Saha

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Suri Vidyasagar College

DEPARTMENT OF CHEMISTRY
TEACHING PLAN OF ISHANI SINHA
CHEMISTRY (Honours) (2018-19) (July 2018– June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	3 rd Year (H)	No. of Lecture
Jul	CC1: Theory: Valence Bond Theory: Bonding and Physical Properties of organic molecules Practical: Identification of solid single organic compound	4	CC-7: Theory: Electrophilic Aromatic Substitution Practical: Qualitative Analysis of Single solid compound Th: SEC 1	8	Paper X : Theory: Unit 1: Dyes: Phenolphthalein, Methyl Orange, Malachite Green, Alizarin Unit 2: Medicinalchemistry :Pharmacokinetics	3
		2		2		2
Aug	CC1: Theory: Molecular Orbital Theory of some organic molecules Practical: Identification of solid single organic compound	4	CC7: Theory: Nucleophilic Aromatic Substitution Practical: Qualitative Analysis of Single Solid compound	4	Paper X : Theory : Unit 2: Medicinal Chem: Synthesis and uses of Drugs- Paracetamol, Aspirin, Phenacetin, Sulphanilamide, Sulphaguanidine, Chloroquin	6
		2		2		
Sept	CC1: Theory: Physical Properties of organic molecules (acidity, basicity, dipole moment etc) Practical: Identification of solid single organic compound	6	CC7: Theory: Organometallics Practical: Melting point determination	8	Paper X : Unit 3: Heterocyclic Compound: Furan, Pyrrole, Thiophene, Pyridine	6
		2		2		
Oct	CC1: Theory: Mechanistic classification of Reaction Practical: Identification of liquid single organic compound	7	CC7: Theory: Nucleophilic addition to alpha,beta unsaturated carbonyl system <i>Practical: Preparation of Derivative</i>	8	Paper X: Unit 3: Heterocyclic Compound: Quinoline, Isoquinoline	6
		2		2		
Nov	CC1: Theory: Reactive Intermediate <i>Practical: Revision</i>	7	CC7: Theory: Nucleophilic addition to alpha, beta unsaturated carbonyl system Practical: Detection of unknown solid compound	7	Paper X: Unit 3: Heterocyclic Compound: Indole Unit 4: Amino Acid: Essential and non essential amino acids	2
		3		3		4
Dec	CC1: Theory: Special Classes and Doubt Clearing Discussion Practical: Revision	5	CC7 : Theory : Organometallics Revision Practical: Revision	4	Paper X: Unit 4: Amino acid rest part(isoelectric point etc)	4
		3		2		
Jan	Sem-II (H)		Sem-IV (H)		3 rd Year (H)	

	CC3: Theory: Reaction Kinetics, Organic Acid and Bases Practical: Hydrolysis of amide/ester	6 2	CC10: Theory: Nitrogen Compounds Practical: Estimation of Vitamin C (reduced) SEC-2 : Pharmaceutical Chemistry Synthesis and uses of Drugs-Part1	8 2 4	Paper X : Unit 4: Amino acid: Doubt Clearing Discussion Unit 5: Carbohydrates Part 1	3 4
Feb	CC3: Theory: Reaction Thermodynamics Practical: Condensation: Synthesis of 7-hydroxy-4-methyl coumarin	7 2	CC10: Theory: Rearrangement to electron deficient carbon and oxygen Practical: Estimation of Phenol by bromination (bromate/ bromide method) <i>SEC-2 Pharmaceutical Chemistry Part 2</i>	6 2 4	Paper: X: Unit 5: Carbohydrates Part 2 and discussion	5
Mar	CC3: Theory: Tautomerism Practical: Benzoylation of Phenol/ aromatic amine	4 2	CC10: Theory: Aromatic Rearrangement Practical : Estimation of Acetic acid in commercial vinegar SEC2: Fermentation	5 2 3	Paper: X : Unit 6: Alkaloids and Terpenoids (part 1)	5
Apr	CC3: Theory: Free Radical Substitution Practical: Bromination of Acetanilide	6 2	CC10: Theory: Migration from N atom to ring carbon Rearrangement by green approach Practical: Estimation of saponification value of oil/fat SEC2: Fermentation part 2	5 3 3	Paper: X : Unit 6: Alkaloids and Terpenoids (part 2)	4
May	CC3: Theory: Elimination Reaction Practical: Green multicomponent coupling synthesis; Selective reduction of m-dinitrobenzene to m-nitroaniline	8 4	CC10: Theory: Organic Spectroscopy: UV spectra Practical: Revision	6 3	Paper: X: Revision of Heterocyclic Compound and doubt Clearing classes	4
June	CC 3: Theory : Doubt Clearing Discussion Practical: Revision	4 2	CC10: Theory: Asymmetric Synthesis Practical: Revision	4 2	Paper: X : Revision of Carbohydrates and doubt Clearing Discussion	4



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DEPARTMENT OF CHEMISTRY

TEACHING PLAN OF PROF TRIJIT BHATTACHARYYA Chemistry (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lectures	Sem-III (G)	No. of Lectures		
Jul	Theory CC1A/GE1: Stereochemistry Part 1	4	TheoryCC1C/GE3: Alcohol, Diols, Rearrangement reaction	4		
Aug	Theory CC1A/GE1: Stereochemistry Part 2		TheoryCC1C/GE3: Ethers	4		
Sept	Theory CC1A/GE1: Inductive Effect, Resonance, Hyperconjugation	4	; TheoryCC1C/GE3: Carbonyl compounds Part 1	4		
Oct	Theory CC1A/GE1: Aliphatic Hydrocarbons	4	TheoryCC1C/GE3: Carbonyl compounds Part 2	4		
Nov	Theory CC1A/GE1: Nucleophilic Substitution Reaction	4	TheoryCC1C/GE3: Carbonyl compounds Part 3	4		

Dec	Theory CC1A/GE1: Elimination Reaction	3	TheoryCC1C/GE3: Dobt clearing, and revision	2 2		
Jan	Sem-II (G)		Sem-IV (G)			
	Theory : CC-1B (Theo) : Comparative study of p-block elements B-Al-Ga-In-Tl	3	Theory : CC-1D: Chromatographic methods	3		
Feb	Theory : CC-1B (Theo) Comparative study of p-block elements C-Si-Ge-Sn-Pb	4	Theory : CC-1D : Volumetric analysis of NaHCO ₃ and Na ₂ CO ₃ by acidimetry	4		
Mar	Theory : CC-1B (Theo) Comparative study of p-block elements N-P-As-Sb-Bi	4	Theory : CC-1D Environmental Chemistry: The Atmosphere,Structure and composition .	4		
Apr	Theory : CC-1B (Theo)		Theory :	2		

	Comparative study of p-block elements O-S-Se-Te	4	CC-1D: <i>Environmental Chemistry: The Atmosphere, Pollutants</i>			
May	Theory : CC-1B: Comparative study of p-block elements F-Cl-Br-I	3	Theory : CC-1D <i>Environmental Chemistry: The Atmosphere, problem of ozone layer depletion</i>	3		
June	Theory : CC-1B: Special classes .	2	Theory : CC-1D: <i>Environmental Chemistry: The Atmosphere pollution control measures</i>	1		

Debabrata Bala

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DEPARTMENT OF CHEMISTRY

TEACHING PLAN OF PROF PANKAJ ROY Chemistry (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lectures	Sem-III (G)	No. of Lectures	Old III(G)	No. of Lectures
Jul			Theory:CC-1C: Chemical Energetics ;thermodynamics;state and path functions; Practical : Measurement of pH of different solutions	4 4	Theory Accuracy and precision in analysis. Practical: Titration of Na ₂ CO ₃ + NaHCO ₃ mixture vs HCl	4 4
Aug			Theory:CC-1C: Chemical Energetics ;thermodynamics; Practical : Measurement of pH of different solutions	4 4	Theory Principles of acid-base titration, use of indicators and indicator constant. Practical: To find the total hardness of water by EDTA titration	4 4
Sept			Theory:CC-1C: Chemical Energetics ;thermodynamics;Heats of reaction; Practical : Preparation of buffer solutions and find the pH	4 4	Theory: estimation of mixture of strong and weak acids, qualitative discussion of salt hydrolysis (no derivation) Practical: To find the pH of an unknown solution by comparing colour.	4 4
Oct			Theory:CC-1C: Chemical Energetics ;thermodynamics;Laws of thermochemistry; Practical : Study of the solubility of benzoic acid in water	3 2	Theory : Single electrode potential and emf of a chemical cell, principles of redox titration, Practical: To find the total hardness of water	3 2
Nov			Theory:CC-1C:	5	Theory: iodometry, iodimetry, use of K ₂ Cr ₂ O ₇ and KMnO ₄ as	3

			Chemical Energetics ;thermodynamic s;second law of thermodynamics; Practical : Repeation	2	oxidant (acid, neutral and alkaline media) Practical: Repeation	
Dec			Theory:CC-1C: Special classes: Practical Practice.	2 2	Theory : Colloidal State Practical: Estimation of saponification equivalent of a supplied ester/oil	4 4
	Sem-II (G)		Sem-IV (G)		III(G)	
Jan	Theory : CC-1B (Theo) : Kinetic Theory of Gases and Real gases . Practical : Surface tension measurement	3 2	Theory : CC-1D: <i>Solutions</i> ;Ideal solutions and Raoult's law Practical : CC-1D: Distribution Law;Study of the equilibrium	3 2	Theory : General classification of colloids, general methods of preparation of lyophobic colloids general properties of colloids, ideas of coagulation, Practical: Estimation of saponification equivalent of a supplied ester/oil	4 3
Feb	Theory : CC-1B (Theo) Surface tension, Viscosity Practical : Study of the variation of surface tension of a detergent solution with concentration	4 2	Theory : CC-1D :Solutions; Distillation of solutions; curves of ideal and non-ideal solutions; Practical : CC-1D: potentiometric titration:	4 4	Theory : Macromolecular Chemistry Introduction, definition of macromolecules, natural and synthetic polymers, Practical: Titration of ferrous iron by KMnO4/K2Cr2O7	3 3
Mar	Theory : CC-1B (Theo) Chemical Kinetics ;Order and molecularity; .Diffe rent types of reactions. Practical :	5 2	Theory : <i>Solutions</i> ;solvent extraction Phase rule ;phase equilibrium; CC-1D: Practical: CC-1D; potentiometric titration: .	4 4	Theory : simple idea of polymer structure: homopolymer (linear, branched, cross-linked) and copolymer. Practical: Titration of ferric iron by KMnO4/K2Cr2O7 using SnCl2 reduction	4

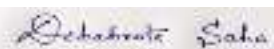
	Study of the variation of viscosity.					
Apr	Theory : CC-1B (Theo) Chemical Kinetics ;Collision theory;Transition State theory Practical : Study the kinetics Iodide-persulphate reaction	4 2	Theory : CC-1D: Phase rule ;thermodynamic derivation; Practical : CC-1D; Determination of dissociation constant	4 4	Theory : Number and weight average molecular weights of polymers – significance, structure and use of natural rubber, synthetic rubber. Practical: Titration of ferrous iron by $\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7$	4 4
May	Theory : CC-1B: Temperature dependence of rate constant; Practical : Acid hydrolysis of methyl acetate with hydrochloric acid	3 2	Theory : CC-1D: Phase Equilibria; Phase diagrams Practical : CC-1D: Determination of dissociation constant	3 2	Theory: Special classes. Practical: Special classes.	4 2
June	Theory : CC-1B: Special classes . Practical : Practice.	2	Theory : CC-1D: Special classes. Practical : Special classes.	1 1		Exam

Lakshmi Sati

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Month	SEM I(G)	SEM-III(G)	PART-III PAPER-IV
Jul	MODULE-02 (Chemical Periodicity) UNIT-I Classification of elements on the basis of electronic configuration: general characteristics of s-, p-, d- and f-block elements.	NO CLASSES	MODULE-01 UNIT-I (a) Accuracy and precision in analysis, types of errors, data analysis and curve fitting (linear $Y = mX + C$ type), numerical problems, mean, mode and variant.
Aug	MODULE-02 (Chemical Periodicity) UNIT-II Positions of hydrogen and noble gases. Atomic and ionic radii, ionization potential, electron affinity, and electronegativity.	NO CLASSES	MODULE-01 UNIT-II (b) Principles of acid-base titration, use of indicators and indicator constant, titration of $\text{Na}_2\text{CO}_3 + \text{NaHCO}_3$ mixture vs HCl using different indicators, estimation of mixture of strong and weak acids, qualitative discussion of salt hydrolysis (no derivation).
Sept	MODULE-02 (Chemical Periodicity) UNIT-III Periodic and group-wise variation of above properties in respect of s- and p- block elements.	NO CLASSES	MODULE-01 UNIT-III (c) Single electrode potential and emf of a chemical cell, principles of redox titration, use of redox potentials, iodometry, use of $\text{K}_2\text{Cr}_2\text{O}_7$ and KMnO_4 as oxidant (acid, neutral and alkaline media).
Oct	MODULE-04 (Redox reactions) UNIT-I Balancing of equations by oxidation number and ion-electron method oxidimetry and reductimetry.	NO CLASSES	Problem solving + discussions and evaluation.
Nov	Special classes + doubt clearing + discussions	NO CLASSES	MODULE-04 UNIT-I Medicinal Chemistry: Antipyretics and analgesics like paracetamol and aspirin, sulpha-drugs like sulphadiazine.
Dec	Doubt clearing + discussions + evaluation.	NO CLASSES	MODULE-04 UNIT-II Antibiotics like penicillin and chloramphenicol, ofloxacin; antiamoebic like metronidazole, anticancer drugs, drugs used for AIDS. (detailed structures are not needed, only the nature and function of the drugs)
Jan	SEM-II (G)	SEM-IV(G)	Tutorial + Evaluation
	MODULE-5B UNIT-III Covalent bonding: VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements.	NO CLASSES	
Feb	MODULE-5C UNIT-IV Concept of resonance and resonating structures in various inorganic and organic compounds.	NO CLASSES	MODULE-05 UNIT-I Elementary idea on nano materials.
Mar	MODULE-5D UNIT-V MO Approach: Rules for the LCAO method, bonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, nonbonding combination of orbitals.	NO CLASSES	MODULE-05 UNIT-II Basic chemical strategy for making nanomaterials. Nanoclusters, Nanowires and Carbon Nanotubes. Applications.
Apr	MODULE-5D UNIT-VI MO treatment of homonuclear diatomic molecules of 1st and 2nd periods. (including idea of s- p mixing) and heteronuclear diatomic molecules such as CO, NO and NO^+ . Comparison of VB and MO approaches.	NO CLASSES	Special Classes
May	Special classes + doubt clearing +	NO CLASSES	Special Classes

TEACHING PLAN OF DEBABRATA SAHA
Chemistry (General) 2018-19 (July 2018-June 2019)

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Head of the Department,
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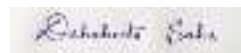
SURI VIDYASAGAR COLLEGE

Department of Chemistry

Teaching Plan of Dr. Sandip Mondal for the General Course (2018-2019)

Month	SEM - I	SEM - III	Part-III (G)
Jul	Practical CC-1A: Inorganic Chemistry Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture Estimation of oxalic acid by titrating it with KMnO ₄ .	Theory CC-1C: Physical Chemistry Ionic Equilibria Practical Measurement of pH of different solutions like aerated drinks, fruit juices, shampoos and soaps (use dilute solutions of soaps and shampoos to prevent damage to the glass electrode) using pHmeter and compare it with the indicator method	Theory Soil Chemistry Practical Titration of Na ₂ CO ₃ + NaHCO ₃ mixture vs HCl using phenolphthalein and methyl orange indicators
Aug	Practical CC-1A: Inorganic Chemistry Estimation of water of crystallization in Mohr's salt by titrating with KMnO ₄ . Estimation of Fe (II) ions by titrating it with K ₂ Cr ₂ O ₇ using internal indicator.	Theory CC-1C: Physical Chemistry Ionic Equilibria Practical Preparation of buffer solutions and find the pH of an unknown buffer solution by colour matching method (using following buffers) a. Sodium acetate-acetic acid b. Ammonium chloride-ammonium hydroxide	Theory Soil Chemistry Practical To find the total hardness of water by EDTA titration
Sept	Practical CC-1A: Inorganic and Organic Chemistry Estimation of Cu (II) ions iodometrically using Na ₂ S ₂ O ₃ Detection of special elements (N, Cl, and S) in organic compounds	Theory CC-1C: Physical Chemistry Ionic Equilibria Practical Study of the solubility of benzoic acid in water	Theory Redox titration Practical To find the pH of an unknown solution by comparing colour of a series of (HCl solutions + 1 drop of methyl orange) and a similar series of (NaOH solutions + 1 drop of phenolphthalein)
Oct	Practical CC-1A: Organic Chemistry Solubility and Classification (solvents: H ₂ O, dil. HCl, dil. NaOH)	Theory CC-1C: Physical Chemistry Chemical Equilibria Practical <i>Identification of a pure organic compound by chemical test</i> Solid compounds: oxalic acid, succinic acid, resorcinol, urea, glucose, benzoic acid and salicylic acid.	Theory Redox titration Practical (d) Estimation of saponification equivalent of a supplied ester/oil (e) Titration of ferrous iron by KMnO ₄ /K ₂ Cr ₂ O ₇
Nov	Practical CC-1A: Organic Chemistry Detection of functional groups: Aromatic-NO ₂ , Aromatic -NH ₂ , -COOH, carbonyl (no distinction of -CHO and >C=O needed), -OH (phenolic) in solid organic compounds. Experiments 1 to 3 with unknown (at least 6) solid samples containing not more than two of the above type of functional groups should be done.	Theory CC-1C: Physical Chemistry Chemical Equilibria Practical <i>Identification of a pure organic compound by chemical test</i> 1. Solid compounds: oxalic acid, succinic acid, resorcinol, urea, glucose, benzoic acid and salicylic acid.	Theory Acid-base titration Practical Titration of ferric iron by KMnO ₄ /K ₂ Cr ₂ O ₇ using SnCl ₂ reduction
Dec	Practical CC-1A: Organic Chemistry Detection of functional groups: Aromatic-NO ₂ , Aromatic -NH ₂ , -COOH, carbonyl (no distinction of -CHO and >C=O needed), -OH (phenolic) in solid organic compounds. Experiments 1 to 3 with unknown (at least 6) solid samples containing not more than two of the above type of functional groups should be done.	Theory CC-1C: Physical Chemistry Chemical Equilibria Practical Liquid Compounds: acetone, aniline and nitrobenzene	Theory Acid-base titration Practical Practical practice
	SEM - II	SEM - IV	

Jan		Theory CC-1D: Analytical and Environmental Chemistry Gravimetric Analysis	Theory Numerical Problems Practical Practical practice
Feb		Theory CC-1D: Analytical and Environmental Chemistry Gravimetric Analysis	Theory Numerical Problems Practical Practical practice
Mar		Theory CC-1D: Analytical and Environmental Chemistry Volumetric Analysis	Theory Numerical Problems Practical Practical practice
Apr		Theory CC-1D: Analytical and Environmental Chemistry Volumetric Analysis	
May		Theory CC-1D: Analytical and Environmental Chemistry Chromatography	
June		Theory CC-1D: Analytical and Environmental Chemistry Chromatography	



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DEPARTMENT OF CHEMISTRY

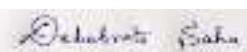
TEACHING PLAN OF Mrs. Ishani Sinha
Chemistry (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-3 Gen	No. of Lecture
Jul	Theory: CC1A/GE1: Homolytic and Heterolytic fission of bonds, Structure of organic molecules on the basis of VBT, Nucleophile, Electrophile, Reactive Intermediate: Carbonation, Carbanion, Free Radicals. Practical CC1A/ GE1: Lassaigne Test: Detection of Special Elements	6	Theory CC1C/GE3: Aromatic hydrocarbons: Benzene, preparation from phenol, decarboxylation, acetylene, benzene sulphonic acid. Reaction: General Mechanism of aromatic electrophilic substitution. Practical CC1C/GE3: Identification of pure organic compounds: oxalic acid, succinic acid	7	Theory: Chemistry of selected biomolecules: Structure and important functions of d/l sucrose, starch, cellulose Practical: Total hardness of water	3
		2		2		2
Aug	Theory: CC1A/ GE 1: Solubility Test of solid organic compounds.	6	Theory CC1C/GE3: Nitration, Halogenation, Sulphonation, Friedel Craft Alkylation, acetylation and side chain oxidation of aromatic hydrocarbons. Practical CC1C/GE3: Identification of pure organic compounds: Salicylic Acid, Benzoic Acid	5	Theory: Amino acids: Classification, essential amino acids (Glycine, Alanine, Methionine, Tryptophan) Practical: Titration of Na ₂ CO ₃ +NaHCO ₃ mixture vs HCl using Phenolphthalein indicator	4
		2		2		2
Sept	Theory: CC1A/GE1: Substitution and Elimination Reaction: SN1, SN2, E1, E2, Saytzeff and Hoffmann Elimination Alkanes. Preparation: Catalytic hydrogenation, Wurtz Reaction, Kolbe Synthesis, From Grignard Reagent. Practical CC1A/GE1: Detection of functional group: -COOH, phenolic -OH, carbonyl group.	6	Theory CC1C/GE3: Aryl Halides, Preparation from Phenol, Sandmeyer Reaction, Nucleophilic Aromatic Substitution, Effect of Nitro group Practical CC1C/GE3: Identification of pure organic compounds: Resorcinol, Urea	4	Theory: Proteins: Peptide bond, haemoglobin, denaturation of protein, enzymes Practical .	4
		2		2		
		2		2		
Oct	Theory: CC1A/ GE1: Reaction of alkanes: General Mechanism for free radical substitution and Halogenation; Alkene. Preparation: Dehydration of Alcohol, Dehydrohalogenation. Cis Alkene and Trans Alkene. Practical CC1A/GE1: Detection of functional group: Ar -NO ₂ and Ar -NH ₂ group	6	Theory CC1C/GE3 : Grignard Reagent, Preparation, Concept of Umpolung, Reformatsky reaction Practical CC1C/GE3 : Identification of pure organic compounds: Glucose, Acetone	4	Theory: Pyrrole, Pyridine, Pyrimidine, Purine Practical: Practice classes	4
		2		2		
		2		2		

Nov	<p>Theory: CC1A/GE1: Alkene. Cis addition, Trans addition, Markownikoff's Addition and anti Markownikoff's Addition, hydration, ozonolysis, oxymercuration, demercuration, hydroboration, oxidation. CC1A/GE1: Detection of unknown organic sample</p>	4 2	<p>Theory CC1C/GE3 : Reimer Tiemann Reaction, Houben Hoesch Reaction, Schotten Baumann Reaction, Fries and Claisen Rearrangements, Problems with examples</p> <p>Practical CC1C/GE3 :Identification of pure organic compounds: Aniline , Nitrobenzene</p>	5 2 2	<p>Theory: Nucleotide, Nucleoside, DNA, RNA</p>	3
Dec	<p>Theory: CC1A/GE1: Organic chemistry Alkyne. Preparation and conversion into higher alkynes. Formation of metal acetylides, addition of Br₂ and alkaline KMnO₄ Practical CC1A/GE1: Organic Chemistry Practice classes</p>	4 2	<p>Theory Revision and discussion of previous lessons Practical CC1C/GE3 :Unknown Samples</p>	3 1 1	<p>Theory: Antipyretics: Paracetamol, Aspirin Sulpha drugs: sulphadiazine</p> <p>Practical</p>	3
Jan	Sem-II (G)		Sem-IV (G)		Sem-VI (G)	
	<p>Theory CC1B/GE2: Practical CC1B/GE2:</p>		<p>Theory CC1D/GE4:Environmental Chemistry: Hydrosphere : Environmental Role of Water</p> <p>Practical CC1D/GE4: Estimation of total hardness of water by titration with EDTA.</p>	4 2 2	<p>Theory: Antibiotic: Penicillin, Chloramphenicol Antiamoebic: Metronidazole</p> <p>Practical: Practice classes</p>	3 2
Feb	<p>Theory CC1B/GE2: Practical CC1b/GE2 :</p>		<p>Theory CC1D/GE 2- Waste Water Management</p> <p>Practical CC1D/GE4: 3. Acid Catalysed Hydrolysis of Ester</p>	3 2	<p>Theory: Practical:</p>	

Mar	Theory CC1b/GE2 : Practical CC1b/ GE 2:		Theory CC1D/GE4: BOD, COD , DO and Hardness parameters of water etc. Practical CC1D/GE4: Determination of strength of H2O2	4 2	Theory: Practical:	
Apr	Theory CC1b/GE2 : Practical CC1b/ GE 2:		Theory <u>SEC 2 : Drugs and Pharmaceutical Chemistry: Drug discovery and synthesis, use and adverse effects of analgesic, antipyretic and anti inflammatory drugs.</u> Practical CC1D/GE4: Revision.	5 2	Theory: Practical:	

May	Theory CC1b/GE2 : Practical CC1b/GE2 :		Theory SEC 2 : Synthesis, use and adverse effects of antibiotic, anti bacterial and anti fungal drugs. Practical CC1D/GE4 : Revision	5 2	Theory Practical	
June	Theory CC1b/GE2 : Practical CC1b/ GE2 :		Theory SEC 2 : Synthesis, use and adverse effects of antiviral and CNS depressant drugs, HIV related drugs. Practical CC1D/GE4 : Practical Revision	4 3	Theory Practical	



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DEPARTMENT OF ENGLISH

**TEACHING PLAN OF NABANITA ROY
ENGLISH (Honours) (2018-19) (July 2018 – June 2019)**

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	3 rd Year (H)	No. of Lecture
Jul	CC1: Indian Classical Literature Unit 4: <i>Abhijnana Shakuntalam</i>	8	CC5: American Literature Unit 4: <i>The Glass Menagerie</i> CC7: British Poetry and Drama Unit 3: <i>The Rape of the Lock</i>	9 9	Paper V: Victorian Period Unit-II: Browning	6
Aug	CC1: Indian Classical Literature Unit 4: <i>Abhijnana Shakuntalam</i>	8	CC5: American Literature Unit 4: <i>The Glass Menagerie</i> CC7: British Poetry and Drama Unit 3: <i>The Rape of the Lock</i>	9 9	Paper V: Victorian Period Unit-II: Browning	6
Sept	CC1: Indian Classical Literature Unit 4: <i>Abhijnana Shakuntalam</i>	6	CC5: American Literature Unit 4: <i>The Glass Menagerie</i> CC7: British Poetry and Drama Unit 3: <i>The Rape of the Lock</i>	8 8	Paper V: Victorian Period Unit-II: E.B. Browning	6
Oct	CC2: European Classical Literature Unit 3: <i>Metamorphoses</i>	6	CC6: Popular Literature Unit 3: <i>The Wonderful Wizard of Oz</i>	8	Paper V: Victorian Period Unit-II: E.B. Browning	6
Nov	CC2: European Classical Literature Unit 3: <i>Metamorphoses</i>	6	CC6: Popular Literature Unit 3: <i>The Wonderful Wizard of Oz</i>	8	Paper VI: Modern Period I Unit-I: History of Modern Period	6
Dec	CC2: European Classical Literature Unit 3: <i>Metamorphoses</i>	6	CC6: Popular Literature Unit 3: <i>The Wonderful Wizard of Oz</i> SEC1: Creative Writing Unit 3: 'What is Creative Writing'	8 3	Paper VI: Modern Period I Unit-I: History of Modern Period	6
Jan	Sem-II (H)		Sem-IV (H)		3 rd Year (H)	

	CC3: Indian Writing in English Unit 2: <i>Clear Light of Day</i>	8	CC9: British Romantic Literature Unit 4 (c) : 'Ode to a Nightingale' & 'To Autumn'	6	Paper VII: Modern Period II Unit-III: Theoretical Terms	8
Feb	CC3: Indian Writing in English Unit 2: <i>Clear Light of Day</i>	8	CC9: British Romantic Literature Unit 4 (c) : 'Ode to a Nightingale' & 'To Autumn'	6	Paper VII: Modern Period II Unit-III: Theoretical Terms	8
Mar	CC3: Indian Writing in English Unit 2: <i>Clear Light of Day</i>	8	CC10: British Literature Unit 2 (a): 'The Lady of Shallot'	5	Paper VII: Modern Period II Unit-III: Theoretical Terms	5
Apr	CC4: British Poetry, Drama & Rhetoric and Prosody Unit 4: <i>Twelfth Night</i>	8	CC10: British Literature Unit 2 (b): 'My Last Duchess'	4	Paper VIII: Indian English Literature Unit-IV: Untouchable	5
May	CC4: British Poetry, Drama & Rhetoric and Prosody Unit 4: <i>Twelfth Night</i>	8	SEC2: Film Studies Unit 1: 'Response and Review'	4	Paper VIII: Indian English Literature Unit-IV: Untouchable	5
June	CC4: British Poetry, Drama & Rhetoric and Prosody Unit 1: 'Rhetoric' Unit 4: <i>Twelfth Night</i>	8 7	SEC2: Film Studies Unit 1: 'Response and Review'	4	Paper VIII: Indian English Literature Unit-IV: Untouchable	5

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DEPARTMENT OF ENGLISH

TEACHING PLAN OF PROF SAURAV CHAKRABARTI
English (Honours) (2018-19) (July 2018– June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	3 rd Year (H)	No. of Lecture
Jul	Theory: CC1: Indian Classical Literature Introduction to Bharata's Natyashastra	4	CC5: American Literature Unit 3: Poetry Introduction i) Prologue	4+ 5	Paper V: Victorian Period Unit: III: Hard Times	12
	Unit 2: Mricchakatika (Introduction and text)	4				
Aug			CC5: American Literature Unit 3: Poetry ii) Crow Testament iii) Passage to India	5+5	Paper V: Victorian Period Unit: III: Hard Times	6
Sept	CC1: Mricchakatika (continued)	8	CC6: Popular Literature Unit 4: Tintin in Tibet (Introduction and text)	10	Paper V: Victorian Period Unit: III: Hard Times	12
Oct	CC1: Mricchakatika (completed)	8	CC6: Popular Literature Unit 4: Tintin in Tibet	10	Paper VI: Modern Period I	

			(continued)		Unit IV: Portrait of the Artist as a Young Man	6
Nov	CC2: Classical European Literature Unit4: Pot of Gold Introduction and text	4+ 4	CC6: Popular Literature Unit 4: Tintin in Tibet (completed) SEC1: Creative Writing Unit 2	5 5	Paper VI: Modern Period I Unit IV: Portrait of the Artist as a Young Man	8
Dec	CC2: Pot of Gold (continued) CC2: Pot of Gold (completed)	8 8	Revision	5	Paper VI: Modern Period I Unit IV: Portrait of the Artist as a Young Man	6
	Sem-II (H)		Sem-IV (H)		3rd Year (H)	
Jan	CC3: Indian Writing in English Unit 3: Poetry (Introduction) i)The Night of the Scorpion	2+ 4	CC8: 18 th C British Literature CC8: Unit 4 Gulliver's Travels (Introduction and Text)	4+6 2 2	Paper VII: Modern Period II Unit II: The Room	16

Feb					Paper VII: Modern Period II Unit II: The Room	8
Mar	CC3: Unit 3 (Poetry) ii) Freedom to the Slave	6	CC8: 18th C British Literature Unit 4: Gulliver's Travels (continued and completed)	10	Paper VII: Modern Period II Unit II: The Room	8
Apr	CC3: Unit 3 (Poetry) iii) Introduction (Kamala Das)	6	CC9: British Romantic Literature i) Ozymandias ii) Ode to the West Wind	5+ 5	Paper VII: Modern Period II Unit II: The Room	9
	CC3: Unit 3 (Poetry) iv) A Poem for Mother	6	CC9: British Romantic Literature iii) Childe Harold's Pilgrimage	10	Paper VIII: Indian English Literature	8

May	Revision	4	CC9: British Romantic Literature iv) Childe Harold's Pilgrimage (completed) CC10: 19th C British Literature Unit4: Goblin Market	6 4	Unit: History of Indian Writing	10
June			SEC 2: Film Studies Unit 2: Cinematic Techniques and Devices Revision	5 5	Paper VIII: Indian English Literature Unit: History of Indian Writing	10

Head of the Department,
 Department of English,
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DEPARTMENT OF GEOGRAPHY
TEACHING PLAN OF CHAITALI GORAI
 Geography (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Sem-V (H)	No. of Lecture
Jul	Practical CC2 (Practical) Cartographic Techniques and Geological map study 3. Construction and Interpretation of Relief Profiles (Superimposed, Projected and Composite), Preparation of Relative Relief Map, Slope map (Wentworth), and Stream Ordering (Strahler) on a Drainage Basin.	6	Theory CC-5. Climatology Unit 1: Elements of the Atmosphere 1. Nature, composition and layering of the atmosphere, 2. Insolation: controlling factors, Heat budget of the atmosphere.	2 3	PAPER – V: NATURE OF GEOGRAPHY 1.0 DEVELOPMENT OF GEOGRAPHY 1.1 Definition, Scope and Content of Geography 1.2 Development of Geography in the Ancient and Mediaeval Periods (up to 19th Century)	3 3
Aug	Practical CC2 (Practical) Cartographic Techniques and Geological map study 3. Construction and Interpretation of Relief Profiles (Superimposed, Projected and Composite), Preparation of Relative Relief Map, Slope map (Wentworth), and Stream Ordering (Strahler) on a Drainage Basin.	5	Theory CC-5. Climatology Unit 1: Elements of the Atmosphere 4. Greenhouse effect and importance of ozone layer	5	PAPER – V: NATURE OF GEOGRAPHY 1.3 Development of Modern Scientific Geography in the 19th Century with particular reference to the Contributions of Humboldt and Ritter 1.4 Development of Geography in the 20th Century (upto 1970)	3 3
Sept	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 7. Glacial and fluvio-glacial processes and landforms	4	Theory CC-5. Climatology Unit 2: Atmospheric Phenomena, Climate Change and Climatic Classification 1. Condensation: Processes and forms, Mechanism of precipitation: Bergeron-Findeisen theory, collision and coalescence, Forms of	2	PAPER – V: NATURE OF GEOGRAPHY 2.0 DEVELOPMENT OF SCHOOLS OF THOUGHT IN MODERN GEOGRAPHY 2.1 German School 2.2 French School	3 3

			precipitation, 2. Air mass: Typology, origin, characteristics and modification.	3		
Oct	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 7. Glacial and fluvio- glacial processes and landforms	4	Theory CC-5. Climatology Unit 2: Atmospheric Phenomena, Climate Change and Climatic Classification 3. Fronts: warm and cold; frontogenesis and frontolysis, 4. Weather: stability and instability; barotropic and baroclinic conditions.	2 3	<u>PAPER - V;</u> <u>NATURE OF</u> <u>GEOGRAPHY</u> 2.3 American School 2.4 Indian School	3 3
Nov	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 8. Aeolian and fluvio- aeolian processes and landforms. Practice classes	6	Theory CC-5. Climatology Unit 2: Atmospheric Phenomena, Climate Change and Climatic Classification 6. Tropical and mid- latitude cyclones. Practice classes	7	<u>PAPER - V;</u> <u>NATURE OF</u> <u>GEOGRAPHY</u> 3.0 CONCEPTS AND TRENDS IN GEOGRAPHY 3.1 Concepts of Determinism, Possibilism and Neo-Determinism 3.2 Concepts of Empiricism and Positivism	5 4
Dec	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 8. Aeolian and fluvio- aeolian processes and landforms. Special class	5	Theory CC-5. Climatology Unit 2: Atmospheric Phenomena, Climate Change and Climatic Classification 7. Evidences and causes of climate change 8. Climatic classification after Köppen, Thornthwaite (1948) Special class	2 3 5	<u>PAPER - V;</u> <u>NATURE OF</u> <u>GEOGRAPHY</u> 3.3 Approaches to Geographic Studies: Systematic vs Regional and Ecological 3.4 Critique of Quantitative Revolution in Geography	5 4
	Sem-II (H)		Sem-IV (H)		Part-III (H)	
Jan	Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Elasticities 1. Evolution of human societies: Hunting and gathering, Pastoral nomadism, Subsistence farming, Industrial and urban societies CC4 (Theory) –	5	Theory CC 9: ECONOMIC GEOGRAPHY Unit 1 1. Meaning and Approaches to Economic Geography 2. Concepts in Economic Geography; Goods; Services; Production; Consumption	3 2	<u>PAPER - V;</u> <u>NATURE OF</u> <u>GEOGRAPHY</u> 4.0 APPROACHES TO REGIONAL STUDIES 4.1 Concepts and Types of Region 4.2 Bases and Methods of Regionalisation	4 4

	<p>Cartograms, Survey and Thematic Mapping 3. Concept, utility, and interpretation of :Climograph, Hythergraph and Ergograph</p> <p>Practical CC4 (Practical) – Cartograms, Survey and Thematic Mapping 1. Diagrammatic representation of data: Star and Age-sex pyramid diagram, pie diagram</p>	2				
Feb	<p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping 3. Concept, utility, and interpretation of :Climograph, Hythergraph and Ergograph</p> <p>Practical CC4 (Practical) – Cartograms, Survey and Thematic Mapping 1. Diagrammatic representation of data: Star and Age-sex pyramid diagram, pie diagram</p>	6	<p>Theory CC 9: ECONOMIC GEOGRAPHY Unit 1 3. Factors Influencing Location of Economic Activity and Forces of Agglomeration 4. Determining Factors of Transport Cost</p>	3	<p>PAPER – V: <u>NATURE OF GEOGRAPHY</u> 4.3 Scale and Hierarchy of Region 4.4 Region and Regionalism</p>	4 4
Mar	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 3. Population growth and distribution, population composition; demographic transition model</p> <p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping 4. Preparation and</p>	2	<p>CC 9: ECONOMIC GEOGRAPHY Unit 2 1. Concept and Classification of Economic Activities 2. Location Theories: Von Thünen and Alfred Weber</p>	3	<p>PAPER – V: <u>NATURE OF GEOGRAPHY</u> 5.0 ENVIRONMENT AND DEVELOPMENT 5.1 Relationship among Population Growth, Economic Development and Environmental Conservation</p>	7

	interpretation of demographic charts and diagrams (Age-Sex Pyramid)					
Apr	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 3. Population growth and distribution, population composition; demographic transition model</p> <p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping 4. Preparation and interpretation of demographic charts and diagrams (Age-Sex Pyramid)</p>	4 4	<p>CC 9: ECONOMIC GEOGRAPHY Unit 2 3. Primary Activities: Subsistence and Commercial Agriculture; Forestry; Fishing 4. Secondary Activities: Manufacturing (Iron and Steel in India and Japan, Petrochemical in India and USA)</p>	3 2	<p><u>PAPER – V:</u> <u>NATURE OF GEOGRAPHY</u> 5.2 Environmental Issues Related to Urban and Industrial Expansion</p>	7
May	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 4. Population-Resource regions</p>	4	<p>CC 9: ECONOMIC GEOGRAPHY Unit 2 5. Tertiary Activities: Types of Trade and Services 6. Agricultural Systems: Tea Plantation in India and Mixed Farming in Europe Practice classes</p>	3 2 5	<p><u>PAPER – V:</u> <u>NATURE OF GEOGRAPHY</u> 5.3 Environmental issues of Large Dams</p>	7
June	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 4. Population-Resource regions</p> <p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping 6. Basic concepts of</p>	4 5	<p>CC 9: ECONOMIC GEOGRAPHY Unit 2 7. Highways: Roles in Economic Development of India since 1990s 8. International Trade Blocs: WTO and OPEC Practice classes</p>	3 2 5	<p><u>PAPER – V:</u> <u>NATURE OF GEOGRAPHY</u> 5.4 Sustainable Development</p>	8

surveying and survey equipments: Abneys Level, Clinometer Practice classes						
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DEPARTMENT OF GEOGRAPHY
TEACHING PLAN OF HEMANTA SUTRADHAR
Geography (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	CC-2: Cartographic Techniques and Geological map study 7. Types of rocks and minerals. Characteristics of Granite, Basalt, Dolerite, Pegmatite, Gneiss, Shale, Sandstone, Slate, Marble, Quartzite, Quartz, Feldspar, Mica, Limestone, Calcite, Bauxite, Magnetite, Hematite, Galena	4	Theory CC7: GEOGRAPHY OF INDIA Unit 1: Geography of India 2. Climate, soil and vegetation: Characteristics and classification	5	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 1.0 RESOURCE 1.1 Resource: Concept and Classification, Economic and Environmental Approaches of Resource Utilisation 1.2 Different sources of Energy Resources, their Relative Importance, Production and Consumption	5
	Practical CC2 (Practical) Cartographic Techniques and Geological map study 4. Geological Map (Problems related to Horizontal, Uniclinal, Folded and Faulted structure); Drawing of Geological section and Interpretation of the Map.	5				4
Aug	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 2. Models of landscape evolution: Views of Davis, Penck, and Hack	3	Theory CC7: GEOGRAPHY OF INDIA Unit 1: Geography of India 3. Population: Distribution, growth, structure and policy 4. Distribution of population by race, caste, religion, language, tribes	2	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 1.0 RESOURCE 1.3 Problems of Resource Depletion - Global Scenario (Forest, Water, Fossil Fuels), 1.4 Necessity and Methods of Resource Conservation; Expanding Oceanic Resource Horizon.	6
	CC-2: Cartographic Techniques and Geological map study 7. Types of rocks and minerals. Characteristics of Granite, Basalt, Dolerite, Pegmatite, Gneiss, Shale, Sandstone, Slate, Marble, Quartzite, Quartz, Feldspar, Mica, Limestone, Calcite, Bauxite, Magnetite,	2				3

	Hematite, Galena					
	Practical CC2 : Cartographic Techniques and Geological map study 4. Geological Map (Problems related to Horizontal, Uniclinal, Folded and Faulted structure); Drawing of Geological section and Interpretation of the Map.	2				
Sept	Theory: CC-1, GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 3. Slope Development: Concept of Wood CC-2: Cartographic Techniques and Geological map study 8. Concept of Bedding Plane, Unconformity and Non-conformity, thickness of Bed, Dip, Throw, Hade, heave	4 3	Theory CC7: GEOGRAPHY OF INDIA Unit 1: Geography of India 5. Agricultural regions, Green revolution and its consequences 6. Mineral and power resources distribution and utilisation of iron ore, coal, petroleum	2 3	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 2.0 ECONOMIC ACTIVITY 2.1 Agricultural Systems: Plantation Agriculture and Mixed Farming 2.2 Models of Economic Activities: Von-Thunen, Weber, Losch	6 3
Oct	Theory: CC-2: Cartographic Techniques and Geological map study 8. Concept of Bedding Plane, Unconformity and Non-conformity, thickness of Bed, Dip, Throw, Hade, heave	5	Theory CC7: GEOGRAPHY OF INDIA Unit 1: Geography of India 8. Regionalisation of India: Views of Spate and Bhatt.	5	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 2.0 ECONOMIC ACTIVITY 2.3 Industrial Regions: Great Lakes, Mumbai-Pune, Asansol-Durgapur 2.4 International Trade with Special Reference to WTO, EEC and SAARC	6 6
Nov	Theory: CC-1, GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 4. Development of river network and landforms on uniclinal and folded structures	3	Theory CC7: GEOGRAPHY OF INDIA Unit 2: Geography of West Bengal 1. Physical perspectives: Physiographic divisions, forest and water resources 2. Population: Growth,	2 3	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 3.0 SOCIETY AND CULTURE 3.1 Nature and Content of Social Geography, Evolution of Social Geography	5

	Practice classes	5	distribution and human development Practice classes	5	3.2 Races and Ethnicity: Major Racial Groups of the World	5
Dec	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 4. Development of river network and landforms on uniclinal and folded structures Special class	2 5	Theory CC7: GEOGRAPHY OF INDIA Unit 2: Geography of West Bengal 3. Resources: Mining, agriculture and industries 4. Regional Development: Darjeeling Hills and Sundarban Special class	2 3 5	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 3.0 SOCIETY AND CULTURE 3.3 Concept of Culture and Its Components; Innovation, Diffusion and Convergence of Culture 3.4 Cultural Realms of the World and their Characteristics	6 5
	Sem-II (H)		Sem-IV (H)		Part-III (H)	
Jan	CC4 (Theory) – Cartograms, Survey and Thematic Mapping 5. Concepts of Bearing: magnetic and true, whole-circle and reduced Practical CC4 (Practical) – Cartograms, Survey and Thematic Mapping 3. Contouring by Dumpy Level and Prismatic Compass	5 5	Theory CC-10. ENVIRONMENTAL GEOGRAPHY 1. Geographers' Approach to Environmental Studies 2. Changes in Perception of Environment in different stages of Human Civilization Practical CC-10: ENVIRONMENTAL GEOGRAPHY 1. Preparation of questionnaire for perception survey on environmental problems	5 5 5	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 4.0 SETTLEMENT 4.1 Concept of Rural and Urban Settlement, Problems of Definition and Classification of Urban Settlement 4.2 Types and Patterns of Rural Settlement	5 5
Feb	Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 6. Social morphology and rural house types in India CC4 (Theory) – Cartograms, Survey and Thematic Mapping 5. Concepts of Bearing:	5	Theory CC-10. ENVIRONMENTAL GEOGRAPHY 3. Ecosystem: Concept, Structure and Functions Practical CC-10: ENVIRONMENTAL GEOGRAPHY 2. Environmental Impact Assessment: Leopold	5 5	PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 4.0 SETTLEMENT 4.3 Theories of Urban Structure Propounded by E.W. Burgess, Harris Ullman and Homer Hoyt 4.4 Functional Hierarchy of Urban	4 7

	<p>magnetic and true, whole-circle and reduced</p> <p>Practical CC4 (Practical) – Cartograms, Survey and Thematic Mapping 3. Contouring by Dumpy Level and Prismatic Compass</p>	3 3	Matrix		Settlement with Special Reference to Christaller's Central Place Theory	
Mar	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 7. Types and patterns of rural settlements</p> <p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping 7. Basic concepts of surveying and survey equipments: Prismatic Compass, Dumpy Level, Transit Theodolite</p> <p>Practical CC4 (Practical) – Cartograms, Survey and Thematic Mapping 4. Determination of Height of objects using Transit Theodolite (Accessible and Inaccessible bases)</p>	2 2	<p>Theory CC-10, ENVIRONMENTAL GEOGRAPHY 4. Environmental Degradation and Pollution: Water and Air</p> <p>Practical CC-10: ENVIRONMENTAL GEOGRAPHY 3. Quality assessment of soil using field kit: pH and NPK</p>	5 5	<p>PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 5.0 POPULATION 5.1 Determinants and Dynamics of Population Growth</p>	7
Apr	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 7. Types and patterns of rural settlements</p> <p>Practical CC4 (Practical) – Cartograms, Survey and Thematic Mapping 4. Determination of Height of objects using Transit Theodolite (Accessible and Inaccessible bases)</p>	4 4	<p>Theory CC-10, ENVIRONMENTAL GEOGRAPHY 5. Environmental Issues related to Agriculture 6. Urban Environmental issues related to Waste Management</p> <p>Practical CC-10: ENVIRONMENTAL GEOGRAPHY 4. Interpretation of air quality using CPCB / WBPCB data</p>	5 5	<p>PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 5.0 POPULATION 5.2 Growth of World Population; Demographic Transition Model</p>	8

May	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 8. Functional Classification of urban settlements</p>	3	<p>Theory CC-10. ENVIRONMENTAL GEOGRAPHY 7. Concept and Issues related to Bio-diversity</p>	5	<p>PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 5.0 POPULATION 5.3 Migration: Types and Impact on Place of Origin and Destination</p>	8
	<p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping</p> <p>7. Basic concepts of surveying and survey equipments: Prismatic Compass, Dumpy Level, Transit Theodolite</p>	2	Practice classes	7		
	Practice classes	5				
June	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Ekistics 8. Functional Classification of urban settlements</p>	2	<p>Theory CC-10. ENVIRONMENTAL GEOGRAPHY 8. Environmental Programs and Policies on Forest and Wetland: National and Global</p>	5	<p>PAPER - VI ECONOMIC AND SOCIAL GEOGRAPHY 5.0 POPULATION 5.4 Population Policy: India and China</p>	7
	<p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping</p> <p>7. Basic concepts of surveying and survey equipments: Prismatic Compass, Dumpy Level, Transit Theodolite</p>	3	Special class	5		
	Special class	5				

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DEPARTMENT OF GEOGRAPHY
TEACHING PLAN OF RANAHT GHOSH
Geography (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Sem-V (H)	No. of Lecture
Jul	CC1 Theory: Geotectonics and Geomorphology Unit 1: 1. Earth's tectonic and structural evolution with reference to geological time scale CC2 (Theory): 1. Maps: Classification and Types, Components of a Map	5	CC 6 (Theory): Unit 1 1. Importance and significance of Statistics in Geography. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio), sources of data CC 6 (Practical): 1. Construction of data matrix with each row representing an aerial unit (districts / blocks / mouzas / towns) and corresponding columns of relevant attributes. SEC 1 1. Numbering Systems; Binary Arithmetic	5	<u>PAPER - VII</u> <u>GEOGRAPHY OF INDIA</u> 1.0 INDIA: PHYSICAL ASPECTS 1.1 Geology and Structure with Special Reference to Himalayan Structure and Evolution of the Peninsular India 1.2 Drainage Systems: Evolution and Characteristics of Peninsular and Extra-Peninsular Rivers	7
			3	5		7
			7	7		
Aug	CC1 Theory: Geotectonics and Geomorphology Unit 1: 2. Earth's interior with special reference to seismology. CC2 (Theory): 1. Maps: Classification and Types, Components of a Map	5	CC 6 (Theory): Unit 1 2. Collection of data and formation of statistical tables Unit 2 1. Central tendency: Mean, median, mode, partition values SEC 1 1. Numbering Systems; Binary Arithmetic 2. Data Computation, Storing and Formatting in Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation, Moving Averages, Derivation of Correlation, Covariance and regression; Selection of technique and interpretation.	5	<u>PAPER - VII</u> <u>GEOGRAPHY OF INDIA</u> 1.0 INDIA: PHYSICAL ASPECTS 1.3 Climatic Characteristics: Seasonality, Unevenness and Unreliability of Rainfall, Drought and Floods 1.4 Classification and Characteristics of Soils, Causes and Consequences of Deforestation	7
			2	5		7
			3	4		7
Sept	CC1 Theory: Geotectonics and Geomorphology Unit 1.4. Plate		CC 6 (Practical): 2. Based on the above, a frequency table, measures of central tendency and	5	<u>PAPER - VII</u> <u>GEOGRAPHY OF INDIA</u> 2.0 ECONOMIC	

	<p>Tectonics: Processes at constructive, conservative, destructive boundaries and hotspots; resulting landforms</p> <p>CC2 (Theory): 2. Concept of Scales: Plain, Comparative, Diagonal and Vernier</p>	5	<p>dispersion would be computed and interpreted.</p> <p>SEC 1 2. Data Computation, Storing and Formatting in Spreadsheets: Computation of Rank, Mean, Median, Mode, Standard Deviation, Moving Averages, Derivation of Correlation, Covariance and regression; Selection of technique and interpretation.</p> <p>3. Preparation of Annotated Diagrams and its interpretation: Scatter diagram and Histogram</p>	5	<p>ASPECTS 2.1 Agricultural Policy and Development since Independence 2.2 Agro-Climatic Regions in India and Impact of Green Revolution</p>	6
Oct	<p>CC1 Theory: Geotectonics and Geomorphology Unit 1: 4. Plate Tectonics: Processes at constructive, conservative, destructive boundaries and hotspots; resulting landforms</p> <p>CC2 (Practical): 1. Construction of Scales: Plain, Comparative, Diagonal and Vernier</p>	3	<p>CC 6 (Theory): Unit 1 3. Sampling: Need, types, and significance and methods of random sampling</p> <p>CC 6 (Practical): 3. Histograms and frequency curve would be prepared on the dataset.</p> <p>SEC 1 3. Preparation of Annotated Diagrams and its interpretation: Scatter diagram and Histogram</p>	5	<p>PAPER - VII <u>GEOGRAPHY OF INDIA</u> 2.0 ECONOMIC ASPECTS 2.3 Industrial Policy and Development since Independence 2.4 Recent Trends of Industrialization with Special Reference to SEZs</p>	7
	<p>CC2 (Theory): 2. Concept of Scales: Plain, Comparative, Diagonal and Vernier</p> <p>3. Coordinate Systems: Polar and Rectangular. Concept of Geoid and Spheroid. Map Projections: Classification, Properties and Uses. Concept and Significance of UTM Projection</p> <p>CC2 (Practical): 2. Construction of Projections: Polar Zenithal Stereographic, Simple Conic with two Standard Parallels, Bonne's</p>	5	<p>CC 6 (Theory): Unit 1 4. Distribution: frequency, cumulative frequency</p> <p>Unit 2 3. Association and correlation: Rank correlation, product moment correlation</p> <p>SEC 1 3. Preparation of Annotated Diagrams and its interpretation: Scatter diagram and Histogram</p> <p>4. Internet Surfing: Generation and extraction of information</p> <p>Special class</p>	5		7
Nov		2		5	<p>PAPER - VII <u>GEOGRAPHY OF INDIA</u> 3.0 SOCIO - CULTURAL ASPECTS 3.1 Population Growth and Human Development since Independence 3.2 Languages Groups: Characteristics and Spatial Distribution</p>	8
		5		3		7
		2		4		
				5		

	and Mercator's Special class	5				
Dec	CC2 (Practical): 2. Construction of Projections: Polar Zenithal Stereographic, Simple Conic with two Standard Parallels, Bonne's and Mercator's Practice classes	8	CC 6 (Theory): Unit 2 4. Linear Regression and time series analysis CC 6 (Practical): 4. Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted and residual from regression would be mapped with a short interpretation.	7 7	PAPER - VII GEOGRAPHY OF INDIA 3.0 SOCIO - CULTURAL ASPECTS 3.3 Caste and Social Morphology in Rural India 3.4 Characteristics and Recent Trends of Urbanisation	5 5
	Sem-II (H)		Sem-IV (H)		Part-III (H)	
Jan	CC3 (Theory): Unit 1 1. Nature, scope and recent trends of Human Geography CC4 (Theory) 1. Concepts of Cartograms and Thematic Maps	4 4	CC8 (Theory): Unit 1 1. Concept and Classification of Regions 2. Types of Planning: Principles and Techniques of Regional Planning	7 7	PAPER - VII GEOGRAPHY OF INDIA 4.0 WEST BENGAL 4.1 Physiographic Region of West Bengal 4.2 Problems of Flood and Drought and their Management	7 7
Feb	CC3 (Theory): Unit 1 1. Nature, scope and recent trends of Human Geography 2. Evolution of humans, concept of race and ethnicity; Major Racial Groups of the world CC4 (Theory) 1. Concepts of Cartograms and Thematic Maps 2. Concept and utility of Isopleths and Choropleth,	1 3 1 3	CC8 (Theory): Unit 2 1. Development: Meaning, Growth versus Development 2. Models for Regional Development: Growth Pole (Perroux) and Core Periphery (Hirschman)	6 7	PAPER - VII GEOGRAPHY OF INDIA 4.0 WEST BENGAL 4.3 Regional Problems of Darjeeling Hill Region and Sundarbans 4.4 Population Growth and Human Development	6 6
Mar	CC4 (Theory) 2. Concept and utility of Isopleths and Choropleth,	4	CC8 (Theory): Unit 1 3. Need for Regional Planning; Multilevel	7	PAPER - VII GEOGRAPHY OF INDIA 5.0 REGIONAL	

	8. Interpretation of Land use and land cover maps	4	Planning in India 4. Metropolitan Concept: Metropolis, Metropolitan Area, Metropolitan Region	7	ASPECTS 5.1 Bases and Schemes of Regionalization of India into Geographical Regions	8
Apr	CC3 (Theory): Unit 1 3. Space, society and cultural regions (language and religion)	3	CC8 (Theory): Unit 2 3. Model for Regional Development in India: Growth Foci (R.P.Misra) 4. Concept of Regional Inequality and Disparity	7	PAPER - VII GEOGRAPHY OF INDIA 5.9 REGIONAL ASPECTS 5.2 Chotanagpur Plateau	8
	CC4 (Theory) 8. Interpretation of Land use and land cover maps	3		7		
May	CC3 (Theory): Unit 1 3. Space, society and cultural regions (language and religion)	1	CC8 (Theory): Unit 2 5. Human Development: Significance, Indicators and Measurement 6. Status of Regional Imbalances in India	7	PAPER - VII GEOGRAPHY OF INDIA 5.0 REGIONAL ASPECTS 5.3 West Bengal Delta	8
	4. Concept of Culture, Cultural Diffusion, Convergence, Cultural Realms of the world	2		7		
	CC4 (Theory) 8. Interpretation of Land use and land cover maps	1				
	CC4 (Practical) 2. Representation of data on map by proportional circles, dots and spheres, isolines and Choropleth method.	2				
June	CC4 (Practical) 2. Representation of data on map by proportional circles, dots and spheres, isolines and Choropleth method. Practice classes	6	CC8 (Theory): Unit 2 7. Strategies for Regional Development in India 8.NITI Aayog and its Functions	7 7	PAPER - VII GEOGRAPHY OF INDIA 5.0 REGIONAL ASPECTS 5.4 Malabar Coast	9

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DEPARTMENT OF GEOGRAPHY
TEACHING PLAN OF SABYASACHI DAI
Geography (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 1. Degradational processes: Weathering, mass wasting and resultant landforms	6	Theory CC7: GEOGRAPHY OF INDIA Unit 1: Geography of India 1. Geology and physiographic divisions	6	PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT 1.0 ANALYSIS OF GEOLOGICAL MAPS	3
					1.1 Construction of Geological Section of Horizontal, Uniclinal, Folded and Faulted Structures Along with Igneous Intrusions and Line of Unconformity 1.2 Succession and Relation with Rock Groups	3
Aug	Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 6. Karst landforms: Surface and sub-surface	5	Theory CC-5. Climatology Unit 1: Elements of the Atmosphere 3. Temperature: horizontal and vertical distribution. Inversion of temperature: types, causes and consequences.	5	PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT 1.0 ANALYSIS OF GEOLOGICAL MAPS	4
					1.3 Topography and its Relation with Underlying Structures 1.4 Interpretation of Geological History	4
Sept	CCI Theory: Geotectonics and Geomorphology Unit 1:3. Concept of Isostasy: Theories of Airy and Pratt	5	CC 6 (Theory): Unit 2 2. Measures of dispersion range, mean deviation, standard deviation, coefficient of variation	5	PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT 2.0 ANALYSIS OF CLIMATIC DATA AND MAPS 2.1 Rainfall Dispersion Diagram 2.2 Construction of	3 2

					Station Model (Indian Context)	
Oct	<p>Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 3. Slope Development: Concept of Wood</p>	4	<p>Theory CC7: GEOGRAPHY OF INDIA Unit 1: Geography of India</p> <p>7. Industrial development since independence.</p>	5	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u> 2.0 ANALYSIS OF CLIMATIC DATA AND MAPS 2.3 Preparation of Synoptic Chart and Interpretation (Indian Context) 2.4 Interpretation of Daily Weather Maps Prepared by Indian Meteorological Department</p>	4 3
Nov	<p>Theory: CC-1. GEOTECTONICS AND GEOMORPHOLOGY Unit 2: Geomorphology 5. Types of rocks, mineralogical composition of igneous rocks; Landforms on igneous rocks with special reference to Granite and Basalt</p>	6	<p>Theory CC-5. Climatology Unit 2: Atmospheric Phenomena, Climate Change and Climatic Classification 5. Circulation in the atmosphere: Planetary winds, jet stream and monsoons</p>	7	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u> 3.0 COMPUTER APPLICATION, REMOTE SENSING AND GIS 3.1 Data Entry; Arrangement into Ascending and Descending Order; Cartograms Using Excel: Bar, Pie, Line Graph and Doughnut Chart</p>	9
Dec	<p>CC2 (Theory): 4. Concept of Generating Globe, Grids: Angular and Linear Systems of Measurement</p>	5	<p>SEC 1 4. Internet Surfing; Generation and extraction of information Practice classes</p>	7	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u> 3.0 COMPUTER APPLICATION, REMOTE SENSING AND GIS 3.2 Calculation of Central Tendency and Standard Deviation Using Formula</p>	8
	Sem-II (H)		Sem-IV (H)		Part-III (H)	

Jan	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Eldstics</p> <p>5. Human, population and environment relations with special reference to development- environment conflict</p>	6	<p>SEC -2 (Practical)</p> <p>1. Concept of Probability and Normal Distribution and their Geographical Applications, Skewness (Pearson's Method)</p> <p>2. Differences between Spatial and non-Spatial data, Nearest Neighbour Analysis</p>	3 2	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u></p> <p>3.0 COMPUTER APPLICATION, REMOTE SENSING AND GIS</p> <p>3.3 Bivariate Techniques: Scatter Diagram and Fitting of Trend Lines</p>	6
Feb	<p>Theory CC3 (Theory) – Human Geography Unit 2: Society, Demography and Eldstics</p> <p>2. Human - environment relations with special referenc to Arctic and hot desert regions</p>	6	<p>SEC -2 (Practical)</p> <p>1. Concept of Probability and Normal Distribution and their Geographical Applications, Skewness (Pearson's Method)</p> <p>2. Differences between Spatial and non-Spatial data, Nearest Neighbour Analysis</p>	3 2	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u></p> <p>3.0 COMPUTER APPLICATION, REMOTE SENSING AND GIS</p> <p>3.4 Basic Concepts of Remote Sensing, GIS and GPS</p>	6
Mar	<p>CC3 (Theory): Unit 1</p> <p>2. Evolution of humans, concept of race and ethnicity; Major Racial Groups of the world</p> <p>3. Space, society and cultural regions (language and religion)</p>	4 2	<p>SEC -2 (Practical)</p> <p>2. Differences between Spatial and non-Spatial data, Nearest Neighbour Analysis</p>	5	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u></p> <p>3.0 COMPUTER APPLICATION, REMOTE SENSING AND GIS</p> <p>3.5 Location of a Place Using GPS; Georeferencing of Scanned Maps and Images (Using Software)</p>	8
Apr	<p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping</p> <p>7. Basic concepts of surveying and survey equipments: Prismatic Compass, Dumpy Level, Transit Theodolite</p>	5	<p>SEC -2 (Practical)</p> <p>3. Correlation and Regression Analysis, t- test, Spearman's Rank Correlation, Product Moment Correlation; Linear Regression</p> <p>4. Time Series Analysis; Smoothing time series by Least Square and/or Moving Average</p>	4 3	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u></p> <p>3.0 COMPUTER APPLICATION, REMOTE SENSING AND</p>	

			Method		GIS 3.6 Principles of Preparing and Interpretation of Standard FCC of Images; Digital Classification and Extraction of Physiographic and Cultural Features (Using Software)	8
May	<p>CC4 (Theory) – Cartograms, Survey and Thematic Mapping</p> <p>6. Basic concepts of surveying and survey equipments: Abneys Level, Clinometer Practice classes</p>	6	<p>SEC -2 (Practical)</p> <p>3. Correlation and Regression Analysis, t-test, Spearman's Rank Correlation, Product Moment Correlation; Linear Regression</p> <p>4. Time Series Analysis; Smoothing time series by Least Square and/or Moving Average Method</p>	4 5	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u></p> <p>4.0 FIELD REPORT ON EITHER A RURAL MOUZA OR AT LEAST ONE WARD OF AN URBAN AREA TO BE CONDUCTED DURING FIELD EXCURSION</p>	10
June	<p>CC3 (Theory): Unit 1</p> <p>4. Concept of Culture, Cultural Diffusion. Convergence, Cultural Realms of the world</p>	6	<p>SEC -2 (Practical)</p> <p>4. Time Series Analysis; Smoothing time series by Least Square and/or Moving Average Method Practice classes</p>	7	<p><u>PAPER-VIII (PRACTICAL) APPLIED GEOGRAPHICAL TECHNIQUES AND FIELD REPORT</u></p> <p>4.0 FIELD REPORT ON EITHER A RURAL MOUZA OR AT LEAST ONE WARD OF AN URBAN AREA TO BE CONDUCTED DURING FIELD EXCURSION</p>	9

For

Sabyasachi Das

Department of Geography,
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Charalati Ghoshal

Head of the Department,
Department of Geography,
Suri Vidyasagar College

DEPARTMENT OF MICROBIOLOGY

TEACHING PLAN OF AMRITA CHATTERJEE
Microbiology (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (II)	No. of Lecture	Sem-III (II)	No. of Lecture	Sem-V (II)	No. of Lecture			
Jul	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 3: Microscopy	6	Theory Unit 3: Chemoheterotrophic Metabolism - Aerobic Respiration	6	Paper VII: Genetics of Microorganisms & Medical Microbiology Group A: Microbial Genetics & Gene Manipulation 3: Genetic recombination in bacteria	7			
	Practical CC1: Introduction to Microbiology and Microbial Diversity Microbiology Laboratory Management and Bio-safety		Practical CC5: Microbial Physiology & Metabolism Effect of salt on growth of <i>E. coli</i>				2	Practical 7: Cultivation of edible mushroom	3
Aug	Theory: CC2: Bacteriology Unit 1: Cell Organization	6	Theory Unit 3: Chemoheterotrophic Metabolism - Aerobic Respiration CC7: Molecular Biology Unit 1: Structures of DNA and RNA	4	Theory Paper VII: Genetics of Microorganisms & Medical Microbiology Group A: Microbial Genetics & Gene Manipulation 5: Replication of plant and animal viruses	8			
	Practical CC1: Introduction to Microbiology and Microbial Diversity Sterilization of glassware using Hot Air Oven		Practical CC6: Cell Biology Identification and study of cancer cells by photomicrographs				2	Practical 7: Cultivation of edible mushroom	3
Sept	Theory: CC2: Bacteriology Unit 1: Cell Organization	2	Theory CC6: Cell Biology Unit 3: Protein Sorting and Transport	6	Theory Paper- VIII (Ecology & Application of Microorganisms) Group A: Environmental Microbiology 2: Waste as Resources 8: Rhizosphere, Phytoplankton	5			
	CC1: Introduction to Microbiology and Microbial Diversity Unit 4: Physiology		Practical CC7: Molecular Biology Study of different types of DNA and RNA using micrographs and model				2	Practical Paper X 1: Isolation of mutants of bacteria by UV exposure	3
	Practical CC1: Introduction to Microbiology and Microbial Diversity Sterilization of heat sensitive material by filtration		Theory SEC1: Microbial Diagnosis in Health Clinics. Unit 2: Collection of Clinical Samples				2		
Oct	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 4: Physiology	2	Theory CC6: Cell Biology Unit 3: Protein Sorting and Transport	2	Theory Paper- VIII (Ecology & Application of Microorganisms) Group A: Environmental Microbiology 8: Rhizosphere, Phytoplankton	3			
	Practical CC2: Bacteriology Simple staining		CC5: Microbial Physiology & Metabolism Unit 6: Nitrogen Metabolism - an overview				2		
			Practical CC5: Microbial Physiology & Metabolism Demonstration of alcoholic fermentation				2	Practical 10: Production of alcohol by Yeast and estimation of alcohol	3

Nov	Theory: CC2: Bacteriology Unit 4 Control of Microorganisms Practical CC2: Bacteriology Negative staining	6	Theory CC5: Microbial Physiology & Metabolism Unit 6 Nitrogen Metabolism - an overview Practical CC7: Molecular Biology Study of semi-conservative replication of DNA through micrographs Theory SEC1: Microbial Diagnosis in Health Clinics Unit 5: Kits for Rapid Detection of Pathogen	4	Theory (Paper VII (Genetics of Microorganisms & Medical Microbiology) Group B: Microbial Pathogenicity & Immunity 1. Predominant Normal Microbial Flora of Human Body Practical 10. Production of alcohol by Yeast and estimation of alcohol	5
	Theory: CC1 & CC2: Special Classes, Doubt clearance Practical Practice Classes	4	Theory Special Classes Practical Practice Class	2	Theory Paper- VIII (Ecology & Application of Microorganisms) Group B: Food & Industrial Microbiology 2. Role of Microorganisms in spoilage of Food Practical Paper IX 4. Isolation & characterization of Bacteria & fungi from rotten food- bread & carrot	6
	Sem-II (II) Theory CC3: Biochemistry Unit 7. Nucleic Acids Practical CC3: Biochemistry Concept of pH and buffers, preparation of buffers - phosphate and acetate buffer	5	Sem-IV (II) Theory CC8: Microbial Genetics Unit 2. Plasmids Practical CC8: Microbial Genetics Demonstration of bacterial conjugation through microvisual teaching aids Theory SI:CC2: Food Fermentation Techniques Unit 2. Milk Based Fermented Foods	8	Theory Paper- VIII (Ecology & Application of Microorganisms) Group B: Food & Industrial Microbiology 3. General principle of food preservation Practical Paper IX 4. Isolation & characterization of Bacteria & fungi from rotten food- bread & carrot	6
Feb	Theory CC4: Virology Unit 1. Nature & Properties of Viruses Practical CC4: Virology Study of one step phage growth curve using isolated bacteriophages	6	Theory CC9: Environmental Microbiology Unit 1. Water potability Practical CC9: Environmental Microbiology Assessment of microbiological quality of water by MPN test Theory SEC2: Food Fermentation Techniques Unit 2. Milk Based Fermented Foods	6	Theory Paper VII (Genetics of Microorganisms & Medical Microbiology) Group B: Microbial Pathogenicity & Immunity 4. Immunity: a) Fundamental concepts of Immune System c) Types of Immunization Practical Paper IX 7. Methylene blue reduction test for milk	4
	Theory CC4: Virology Unit 2. Bacteriophages Practical CC4: Virology Study of one step phage growth curve using	4	Theory CC10: Food and Dairy Microbiology Unit 3. Microbial spoilage of various foods Practical	8	Theory Paper VII (Genetics of Microorganisms & Medical Microbiology) Group B: Microbial Pathogenicity & Immunity 4. Immunity	3
	Theory CC4: Virology Unit 2. Bacteriophages Practical CC4: Virology Study of one step phage growth curve using	2	Practical			
Mar	Theory CC4: Virology Unit 2. Bacteriophages Practical CC4: Virology Study of one step phage growth curve using	2	Practical			

	isolated bacteriophages		CC10: Food and Dairy Microbiology Isolation of spoilage microorganisms from spoiled carrot Theory SEC2: Food Fermentation Techniques Unit 3 Grain Based Fermented Foods	2	d) Types of Immunity	2
					Practical Practice class	3
Apr	Theory CC3: Biochemistry Unit 5: Enzymes Practical CC3: Biochemistry Qualitative tests for RNA (Orcinol)	6	Theory CC8: Microbial Genetics Unit 4: Phage Genetics CC9: Environmental Microbiology Unit 2: Microbial Interactions Practical CC9: Environmental Microbiology Study the presence of microbial activity by detecting enzymes (amylase) in soil Theory SEC2: Food Fermentation Techniques Unit 4 Vegetable Based Fermented Foods	6		
		2		4		
May	Theory CC3: Biochemistry Unit 5: Enzymes Practical Quantitative tests for RNA (Orcinol)	4	Theory CC9: Environmental Microbiology Unit 2: Microbial Interactions CC10: Food and Dairy Microbiology Unit 5: Food borne diseases (causative agents, foods involved, symptoms and preventive measures)	4		
		2	Practical CC10: Microbial Genetics Demonstration of bacterial transformation and transduction through audiovisual teaching aids	4		
June	Theory CC3 & CC4: Special Classes Question answer session	2	Theory CC10: Food and Dairy Microbiology Unit 5: Food borne diseases (causative agents, foods involved, symptoms and preventive measures)	2		
	Practical Practice Classes	2	Practical Practice Classes	2		

Anvita Chatterjee
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DEPARTMENT OF MICROBIOLOGY

TEACHING PLAN OF ASUTOSI MUKHERJEE
Microbiology (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (II)	No. of Lecture	Sem-III (II)	No. of Lecture	Part III (II)	No. of Lecture
Jul	<p>Theory:</p> <p>CC1: Introduction to Microbiology and Microbial Diversity</p> <p>Unit 1: History and Development of Microbiology</p>	4	<p>Theory</p> <p>CC5: Microbial Physiology and Metabolism</p> <p>Unit 2: Nutrient uptake and Transport</p> <p>Practical</p> <p>CC5: Microbial Physiology and Metabolism</p> <p>3. Effect of temperature on growth of <i>E. coli</i></p>	6	<p>Theory</p> <p>Paper-VII: Genetics of Microorganisms & Medical Microbiology</p> <p>Group A: Microbial Genetics & Gene Manipulation:</p> <p>1. Bacterial Mutation.</p>	6
Aug	<p>Theory:</p> <p>CC1: Introduction to Microbiology and Microbial Diversity</p> <p>Unit 1: History and Development of Microbiology</p> <p>CC2: Bacteriology</p> <p>Unit 4: Control of Microorganisms</p>	2	<p>Theory</p> <p>CC6: Cell Biology</p> <p>Unit 2: Nucleus (Nuclear envelope and nuclear pore complex)</p> <p>Practical</p> <p>CC6: Cell Biology</p> <p>2. Study of the structure of cell organelles through electron micrographs</p>	4	<p>Theory</p> <p>Paper-VII: Genetics of Microorganisms & Medical Microbiology</p> <p>Group A: Microbial Genetics & Gene Manipulation:</p> <p>6. Gene Regulation</p> <p>Group B: Microbial Pathogenicity & Immunity</p> <p>3. Common Microbial Diseases:</p> <p>(i) Bacterial- Typhoid, Staphylococcal Food Poisoning</p> <p>ii) Viral- AIDS</p> <p>Practical</p> <p>Paper IX (Practical)</p> <p>2. Determination of MIC of antibiotic (penicillin/ streptomycin).</p>	6
						3
						4

Sept	<p>Theory:</p> <p>CC2: Bacteriology</p> <p>Unit 4: Control of Microorganisms</p>	4	<p>Theory</p> <p>CC6: Cell Biology</p> <p>Unit 2: Nucleus (Chromatin- Molecular organization, Nucleolus)</p> <p>Theory</p> <p>CC7: Molecular Biology</p> <p>Unit 5: Translation</p>	4	<p>Theory</p> <p>Paper-VII: Genetics of Microorganisms & Medical Microbiology</p> <p>Group B: Microbial Pathogenicity & Immunity</p> <p>4. Immunity:</p> <p>(h) Ag-Ab reaction - agglutination, precipitation, opsonisation, lysis, neutralization.</p> <p>(j) Immunological techniques- ELISA</p>	3
	<p>Unit 7: Important Archaeal and Bacterial Groups (Bacteria: General characteristics and economic importance; Gram Negative Groups)</p>	4	<p>Practical</p> <p>CC7: Molecular Biology</p> <p>5. Estimation of RNA by using UV Spectrophotometer.</p>	2	<p>Practical</p> <p>Paper X (Practical)</p> <p>2. Isolation of amino acid auxotrophic mutant by replica plating technique (Penicillin enrichment technique)</p>	2
					4	
Oct	<p>Theory:</p> <p>CC2: Bacteriology</p> <p>Unit 7: Important Archaeal and Bacterial Groups (Bacteria: General characteristics and economic importance; Gram Positive Groups)</p>	4	<p>Theory</p> <p>CC7: Molecular Biology</p> <p>Unit 5: Translation</p>	4	<p>Theory</p> <p>Paper-VIII: Ecology & Application of Microorganisms</p> <p>Group A: Environmental Microbiology:</p> <p>3. Potability of water: Microbial assessment of water quality, water purification, Coliform test.</p>	5

Nov	<p>Theory:</p> <p>CC2: Bacteriology</p> <p>Unit 7: Important Archaeal and Bacterial Groups</p> <p>Cyanobacteria</p>	4	<p>Theory</p> <p>CC5: Microbial Physiology and Metabolism.</p> <p>Unit 6: Nitrogen Metabolism- an overview</p> <p>Practical</p> <p>CC5: Microbial Physiology and Metabolism.</p> <p>7 Determination of the Thermal Death Point (TDP) of <i>E. coli</i></p>	6	<p>Theory</p> <p>Paper -VIII: Ecology & Application of Microorganisms</p> <p>Group A: Environmental Microbiology</p> <p>7 Biofertilizers: Types (Rhizobium, Phosphate solubilizer, BGA & VAM), Production & application of Biofertilizers. Importance of Biofertilizers in Agriculture</p> <p>Practical</p> <p>Paper X (Practical)</p> <p>3. Isolation of Ampicillin resistant mutants by selection by gradient plate method.</p>	8
				2	4	

Dec	<p>Theory:</p> <p>CC1: Introduction to Microbiology and Microbial Diversity</p> <p>Special classes + doubt clearing + discussions</p>	4	Revision class	6	<p>Theory</p> <p>Paper -VIII: Ecology & Application of Microorganisms</p> <p>Group B: Food & Industrial Microbiology:</p> <p>6. Industrial Microbiological products Alcohol and alcoholic beverages (beer), organic acids (lactic acid), antibiotics (penicillin), amino acid (lysine), vaccine (Hep-B) & Vit B12 production.</p>	9
	<p>Practical</p> <p>Practice classes</p>	2	Question Answer Practice		<p>Practical</p> <p>Paper X (Practical)</p> <p>4. Blood grouping</p>	2
Jan	Sem-II (H)		Sem-IV (H)			
	<p>Theory</p> <p>CC3: Biochemistry</p> <p>Unit 1: Bioenergetics</p>	6	<p>Theory</p> <p>CC 9: Environmental Microbiology</p> <p>Unit 1: Microorganisms and their Habitats</p> <p>Practical</p> <p>CC 9: Environmental Microbiology</p> <p>7. Isolation of <i>Rhizobium</i> from root nodules</p>	8	<p>Theory</p> <p>Paper-VII: Genetics of Microorganisms & Medical Microbiology</p> <p>Group A: Microbial Genetics & Gene Manipulation.</p> <p>1. Bacterial Mutation:</p> <p>[REVISION CLASS]</p>	4
				2	<p>Practical</p> <p>Paper -IX (Practical)</p> <p>3. Examination of urine by culture & isolation of Human pathogen (bacteria) & determination</p>	4

Feb	Theory CC3: Biochemistry Unit 3: Lipids	6	Theory CC 9: Environmental Microbiology Unit 5: Microbial Bioremediation	8		
	Practical CC 3: Biochemistry 2. Qualitative/ Quantitative tests for Carbohydrates (DNS method)	2				
Mar	Theory CC4: Virology Unit 4: Viruses and Cancer	6	Theory CC10: Food and Dairy Microbiology Unit 3: Principles and methods of food preservation	8		
	Practical CC4: Virology 4. Isolation of Bacteriophage DNA and study of its HindIII digestion pattern	4	Practical CC 10: Food and Dairy Microbiology 2. Alkaline phosphatase test to check the efficiency of pasteurization of milk	2		

Apr	Theory CC4: Virology Unit 6: Application of Virology	6	Theory CC 8: Microbial Genetics Unit 1: Genome Organization and Mutations	6		
	Practical CC3: Biochemistry 6 Estimation of Ascorbic acid	2	Practical CC 8: Microbial Genetics 5 Study of different conformation of plasmid DNA through Agarose gel electrophoresis using DNA ladder.	4		
May	Theory CC3: Biochemistry Unit 1: Bioenergetics (Revision Class)	4	Theory CC 8: Microbial Genetics Unit 1: Genome Organization and Mutations	4		
	Question – Answer Practice and Discussions	3	Practical CC 8: Microbial Genetics 8 Demonstration of Ames test through audio visual teaching aids.	2		

<p>June</p>	<p>Special classes for theory And Practical practice classes.</p>	<p>Theory CC10: Food and Dairy Microbiology Special class</p> <p>Practical CC10 : Food and Dairy Microbiology and CC 9 : Environmental Microbiology</p> <p>[Repeat practical Class]</p>	<p>2</p> <p>2</p>		
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Asutosh Mukherjee

Signature of Teacher
 Department of Microbiology
 Suri Vidyasagar College

DEPARTMENT OF MICROBIOLOGY

TEACHING PLAN OF AMARNATH CHATTOPADHYAY
Microbiology (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 6: Protozoa	06	Theory CC5: Microbial Physiology & Metabolism Unit 1. Microbial Growth and Effect of Environment on Microbial Growth	10	Theory Paper VII: Genetics of Microorganisms & Medical Microbiology Group A. Microbial Genetics & Gene Manipulation 2. Outline of Mendelian genetics	05
	Practical CC1: Introduction to Microbiology and Microbial Diversity To study the principle and applications of instruments (autoclave, incubator, hot air oven, centrifugation, light microscope, pH meter) used in the microbiology laboratory	04	Practical CC5: Microbial Physiology & Metabolism Study of growth curve of <i>E. coli</i> by turbidometric method, standard plate count method, Direct count method by phase contrast microscopy	06	8. Molecular Bio-assay Technique	03
			Theory SECI: Microbial Diagnosis in Health Clinics Unit 3 Direct Microscopic Examination and Culture	03	Practical Paper IX 1. Antibiotic (Penicillin & streptomycin) assay by agar cup method using one Gram positive and one Gram negative bacteria	03
Aug	Theory: CC2: Bacteriology Unit 2: Bacteriological Techniques	06	Theory CC6: Cell Biology Unit 1: Unit 1: Structure and organization of Cell	08	Theory Paper VII: Genetics of Microorganisms & Medical Microbiology Group A: Microbial Genetics & Gene Manipulation 8. Molecular Bio-assay Technique	04
	Practical CC1: Introduction to Microbiology and Microbial Diversity Preparation of culture media (Nutrient Broth and Nutrient Agar) for bacterial cultivation	02	Practical CC5: Microbial Physiology & Metabolism Calculation of generation time and specific growth rate of bacteria from the graph plotted with the given data	02	Paper VIII (Ecology & Application of Microorganisms) Group B: Food & Industrial Microbiology 5. Fermenter	04
	Sterilization of media using Autoclave and assessment for sterility	03	Theory SECI: Microbial Diagnosis in Health Clinics Unit 3 Direct Microscopic Examination and Culture	03	Practical Paper IX 5. Determination of microbial population in water by filter disc method	03
Sept	Theory: CC2: Bacteriology Unit 2: Bacteriological Techniques	02	Theory CC5: Microbial Physiology & Metabolism Unit 4: Chemoheterotrophic Metabolism- Anaerobic respiration and fermentation	05	Theory Paper VIII (Ecology & Application of Microorganisms) Group B: Food & Industrial Microbiology 5. Fermenter	02
	Unit 5: Growth & Reproduction in Bacteria	04	Practical CC6: Cell Biology Study of a representative plant (epidermal cell of <i>Rhus</i> sp.) and animal cell (squamous epithelial cell) by microscopy	04	4. Milk Microbiology	06

	<p>Practical CC1: Introduction to Microbiology and Microbial Diversity Isolation and enumeration of bacteria from air, water and soil</p>	06	<p>Theory SEC1: Microbial Diagnosis in Health Clinics Unit 6: Testing for Antibiotic Sensitivity in Bacteria</p>	04	<p>Practical Paper- X 5. Isolation of plasmid, chromosomal DNA by standard method</p>	06		
Oct	<p>Theory: CC2: Bacteriology Unit 5: Growth & Reproduction in bacteria</p>	02	<p>Theory CC7: Molecular Biology Unit 2: Replication of DNA (Prokaryotes and Eukaryotes)</p>	08	<p>Theory Paper VII: Genetics of Microorganisms & Medical Microbiology Group B: Microbial Pathogenicity & Immunity 4. Immunity: b) Immune elements c) Immunoglobulins</p>	02		
	<p>Practical CC2: Bacteriology Estimation of CFU count by spread plate method/pour plate method</p>	02	<p>Practical CC6: Cell Biology Study of different stages of Mitosis from permanent slide</p>	02			03	
			<p>Theory SEC1: Microbial Diagnosis in Health Clinics Unit 4: Serological and Molecular Methods</p>	03				<p>Practical 6. Agarose Gel Electrophoresis</p>
Nov	<p>Theory: CC2: Bacteriology Unit 7: Important Archaeal And Bacterial Groups Archaea Cyanobacteria</p>	04	<p>Theory CC7: Molecular Biology Unit 2: Replication of DNA (Prokaryotes and Eukaryotes) Unit 5: Regulation of gene Expression</p>	02	<p>Theory Paper VII: Genetics of Microorganisms & Medical Microbiology Group B: Microbial Pathogenicity & Immunity 2. Mechanism of Bacterial Pathogenicity</p>	08		
	<p>CC1: Introduction to Microbiology and Microbial Diversity Special class, Doubt clearance</p>	02	<p>Practical CC7: Molecular Biology Isolation of genomic DNA from <i>E. coli</i></p>	03				
	<p>Practical CC2: Bacteriology Isolation of pure cultures of bacteria by streaking method.</p>	02	<p>Theory SEC1: Microbial Diagnosis in Health Clinics Unit 4: Serological and Molecular Methods</p>	03			03	
	<p>Preservation of bacterial cultures (slant /sub)</p>	02						
Dec	<p>Theory: CC2: Bacteriology Special Classes, Doubt clearance</p>	02	<p>Theory CC6: Cell Biology Unit 4: Cell Signaling Special classes for doubt clearance</p>	08 02	<p>Theory Paper VII: Genetics of Microorganisms & Medical Microbiology Group B: Microbial Pathogenicity & Immunity 2. Mechanism of Bacterial Pathogenicity</p>	02		
	<p>Practical CC2: Bacteriology Moldily by hanging drop method, Practice Classes</p>	02	<p>Practical CC7: Molecular Biology Resolution and visualization of DNA by Agarose Gel Electrophoresis</p>	03				
		02	<p>Theory SEC1: Microbial Diagnosis in Health Clinics Special classes for doubt clearance</p>	02			<p>Paper VIII (Ecology & Application of Microorganisms) Group A: Environmental Microbiology 1. Microbial Participation in natural</p>	05
			<p>Question Answer session</p>					

						cycles
						Practical 12. Quantitative estimation of alpha-amylase. effect of PH and temperature of alpha-amylase activity
						03
	Sem-II (H)		Sem-IV (H)			
Jan	Theory CC4: Virology Unit 3. Viral Transmissions, salient features of Viral Nucleic acids & Reproduction	04	Theory CC8: Microbial Genetics Unit 2. Plasmids	08	Theory Paper VIII (Ecology & Application of Microorganisms) Group A Environmental Microbiology	
	Practical CC4: Virology Study of TMV infection on Tomato plant induced by TMV infected tobacco extract	04	Practical CC8: Microbial Genetics Preparation of master plates and replica Plates Study of the effect of physical (UV) mutagens on bacterial cells	04 02	6. Bioremediation or Biodegradation	10
Feb	Theory CC4: Virology Unit 3. Viral Transmissions, salient features of Viral Nucleic acids & Reproduction	04	Theory SEC2: Food fermentation Techniques Unit 1 Fermented Foods.	02	Practical 12. Quantitative estimation of alpha-amylase. effect of PH and temperature of alpha-amylase activity	03
	Practical CC3: Biochemistry Qualitative/Quantitative assay of amylase	04	Theory CC9: Environmental Microbiology Unit 3: Biogeochemical Cycling	08	Theory Paper VIII (Ecology & Application of Microorganisms) Group B: Food & Industrial Microbiology	08
			Practical CC9: Environmental Microbiology Assessment of microbiological quality of water by using bacterial filter disc method	02	7. Application of Genetic engineering in Microbiology	
			Theory SEC2: Food fermentation Techniques Unit 1 Fermented Foods	02	Practical Practice Class	02
Mar	Theory CC3: Biochemistry Unit-1: Proteins	06	Theory CC10: Food and Dairy Microbiology Unit 4: Fermented foods	10		
	Practical CC3: Biochemistry Study the effect of temperature and pH on enzyme activity (amylase)	04	Practical CC10: Food and Dairy Microbiology MBRT of milk samples	04		
			Theory SEC2: Food fermentation Techniques Unit 6 Probiotic Foods	02		
Apr	Theory CC3: Biochemistry Unit 4. Proteins	04	Theory CC8: Microbial Genetics Unit 4. Phage Genetics	06		
	Practical CC4: Virology Report writing Educational tour to Institute/Industry	04	Practical CC9: Environmental Microbiology Analysis of soil - pH, moisture content, water holding capacity	04		

			Theory SEC2: Food fermentation Techniques Unit 6 Probiotic Foods Unit 5 Fermented Meat and Fish	03 03		
May	Theory CC3: Biochemistry Unit 6: Vitamins Practical Isolation and enumeration of bacteriophages (PFU) from water/sewage sample using double agar layer technique	04 04	Theory CC10: Food and Dairy Microbiology Unit 7: Rapid detection methods of food borne pathogens in foods Practical CC10: Food and Dairy Microbiology Demonstration of cultivation of edible mushroom (<i>Pleurotus</i> sp) Theory SEC2: Food fermentation Techniques Unit 5 Fermented Meat and Fish	08 02 03		
June	Theory CC3: Biochemistry & CC4: Virology Special class and Doubt Clearance Practical Practice Classes	04 04	Theory Special class and Doubt Clearance Practical Practice Classes Theory SEC2: Food fermentation Techniques Special classes	04 02 02		

Anamika Chatterjee

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**DEPARTMENT OF BOTANY
SURI VIDYASAGAR COLLEGE**

TEACHING PLAN OF DR. KALYAN KUMAR BHATTACHARYYA

(Associate Professor)

Botany (Honours) (2018-19) (July 2018 - June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory CC1: Microbiology & Phycology Unit 6: Chlorophyta and Charophyta Practical CC2: Archegoniate Oover	3 2	Theory CC7: Fossorial Botany Unit 7: Sources of oils and fats Practical CC7: Economic Botany 1. Cereals: Rice (habit sketch, study of paddy and grain, starch grains, micro-chemical tests) Theory SECI: Agricultural Botany Unit: 1 Plant physiology a) Plant water relation, stomatal regulation, mineral nutrition, N ₂ cycle.	5 2 2	Theory Paper IX: Plant physiology 1. Water relation: Role of water in plant life. Water potential and its components in plant cell, soil water absorption, variation in xylem and embolism, Transpiration types and mechanism of stomatal transpiration like roles of CO ₂ , blue light, potassium ion and abscisic acid. Antherispirants. Practical Paper XII: Plant physiology 1. Preparation of percent, normal, molar and molar solutions of any compound. 2. Determination of isotonic concentration and osmotic pressure of cell sap by plasmolytic method. Practical Paper XI: Biochemistry 1. Qualitative detection test for the following compounds: General test for carbohydrates, reducing and non-reducing sugars.	5 2 2 2
Aug	Theory CC1: Microbiology & Phycology Unit 6: Chlorophyta and Charophyta Practical CC2: Archegoniate Oover	3 2	Practical CC6: Plant systematics 2. Field visit Theory CC7: Economic Botany Unit 7: Sources of oils and fats Practical CC7: Economic Botany 2. Legumes: Soybean, Groundnut, (habit, fruit, seed structure, micro-chemical tests). Theory SECI: Agricultural Botany Unit: 1 Plant physiology a) Plant water relation, stomatal regulation, mineral nutrition, N ₂ cycle.	1 5 3 2	Theory Paper IX: Plant physiology 2. Mineral nutrition: Essential elements and their physiological roles in plant life. Mechanism of active ion uptake. 3. Organic translocation: Phloem loading and unloading mechanism, long distance transport (Pressure flow hypothesis) Practical Paper XI: Plant physiology 3. Comparison of imbibition of starchy, proteinaceous and fleshy seeds. 4. Determination of amount of water absorption, retention and transpiration. Practical Paper XI: Biochemistry 2. Specific tests for glucose, sucrose and starch	3 3 2 1 2
Sept	Theory CC1: Microbiology		Theory CC7: Economic Botany		Theory Paper IX: Plant	

	<p>A Physiology Unit 8: Chlorophylls and Carotenoids Practical CC7: Archaebionta <i>Pinus</i></p>	<p>4</p> <p>2</p>	<p>Unit 8: Natural Rubber Practical CC7: Economic Botany 3. Sources of sugars and starches: Sucrose (habit sketch, cane juice- micro-chemical tests), Potato/habit sketch, tuber morphology, T.S. tuber to show localization of starch grains, + its starch grains, micro-chemical tests). 4. Spices: Black pepper, Fennel and Clove (Macromorphology). Theory SEC1: Agricultural Botany Unit: 1 Plant physiology b) C₃ fixation mechanism in C₂, C₃, C₄ and CAM plants. Transport of water and photosynthate</p>	<p>3</p> <p>2</p> <p>1</p> <p>2</p>	<p>physiology 4. Photosynthesis: Definition, photosynthetic pigments, basic concept about mechanism of light and dark reaction, C₃ - C₄ - and CAM pathways of CO₂ fixation. Photorespiration - definition, sites and mechanism. Practical Paper XI: Plant physiology 5. Determination of transpiration rate and effect of environmental factors (Humidity and light). 6. Determination of the effect of KNO₃ solution on stomatal opening. Practical Paper XI: Biochemistry 3. General tests for protein.</p>	<p>9</p> <p>2</p> <p>2</p> <p>2</p>
Oct	<p>Theory CC1: Microbiology & Physiology Unit 7: Phaeophyta and Rhodophyta Practical CC2: Archaebionta <i>Pinus</i></p>	<p>4</p> <p>2</p>	<p>Theory CC7: Economic Botany Unit 9: Drug-yielding plants Practical CC7: Economic Botany 5. Beverages: Tea (plant specimen, tea leaves), Coffee (plant specimen, beans). Theory SEC1: Agricultural Botany Unit: 1 Plant physiology b) C₃ fixation mechanism in C₂, C₃, C₄ and CAM plants. Transport of water and photosynthate.</p>	<p>4</p> <p>2</p> <p>1</p>	<p>Theory Paper IX: Plant physiology 5. Respiration: Glycolysis, Krebs cycle, electron transport system, oxidative phosphorylation and chemiosmotic system. Practical Paper XI: Plant physiology 7. Determination of the rate of respiration of different plant parts using Ganong's respirometer or respiroscope. 8. Determination of RQ of different types of seeds using Ganong's respirometer or respiroscope. Practical Paper XI: Biochemistry 4. General tests for Calcium, magnesium, iron and phosphorus from plant ash.</p>	<p>6</p> <p>2</p> <p>1</p> <p>2</p>
Nov	<p>Theory CC1: Microbiology & Physiology Unit 7: Phaeophyta and Rhodophyta Practical CC2: Archaebionta-Gaetan</p>	<p>4</p> <p>2</p>	<p>Theory CC7: Economic Botany Unit 9: Drug-yielding plants Practical CC7: Economic Botany 6. Sources of oils and fats: Coconut, T.S. nut (photograph), Mustard-plant specimen, seeds; tests for fats in crushed seeds. Theory SEC1: Agricultural Botany Unit: 1 Plant physiology c) Plant development Phytohormones: IAA, GA, Cytokinin, ABA, Ethylene; their role and regulation in plant system d) Physiology of flowering and seed development</p>	<p>4</p> <p>2</p> <p>2</p>	<p>Theory Paper IX: Plant physiology 6. Nitrogen metabolism, nitrate reduction, (nitrate reductase, nitrite reductase), nitrogen fixing organisms (free living, symbiotic and associative symbiotic organisms). Mechanism of nitrogen fixation - asymbiotic, symbiotic with special reference to nitrogenase and leghaemoglobin; nitrogen cycle. Practical</p>	<p>4</p>

					<p>Paper XI: Plant physiology</p> <p>9. Determination of the effect of CO₂ concentration on the rate of photosynthesis using molar solution of bicarbonate and by measurement of volume of O₂ liberation.</p> <p>10. Determination of viability of seeds by TTC (TZ) test.</p> <p>Practical Paper XI: Biochemistry 5. General tests for organic acids - oxalic, citric, tartaric and malic.</p>	2
						2
						2
Dec	<p>Theory CC1: Microbiology & Physiology Doubt clearing class Practical CC2: Archegoniate <i>Gnetum</i></p>	2	<p>Theory CC7: Economic Botany Unit 11: Fibers Practical CC7: Economic Botany 7. Essential oil-yielding plants: Habit sketch of <i>Rosaceae</i> and <i>Eucalyptus</i> specimens/photographs.</p> <p>Theory SEC1: Agricultural Botany Unit: I Plant physiology c) Plant development Phytohormones: IAA, GA, Cytokinin, ABA, Ethylene, their role and regulation in plant system d) Physiology of flowering and seed development.</p>	4	<p>Theory Paper IX: Plant physiology 7. Growth physiology: Concept of growth and development, factors affecting growth. Phytohormones - types and chemical nature of Auxins, Gibberellins, Cytokinins, Abscisic acid and Ethylene; physiological roles; bioassay of IAA and GA3; an idea about immunoassay and radio immunoassay (RIA) of phytohormones.</p> <p>Practical Paper XI: Plant physiology Revision Practical Class</p> <p>Practical Field visit to familiarize students with ecology of different sites.</p>	8
						2
						1
Jan	<p>Sem-II (H)</p> <p>Theory CC3: Mycology and Phytopathology Unit 5: Allied Fungi</p> <p>Practical CC3: Mycology and Phytopathology 2 Identification</p>	No. of Lecture	<p>Sem-IV (H)</p> <p>Theory CC9: Biomolecules and Cell Biology Unit 1: Biomolecules</p> <p>Practical CC9: Biomolecules and Cell Biology Unit 1: Qualitative tests for carbohydrates, reducing sugars, non-reducing sugars, lipids and proteins.</p>	No. of Lecture	<p>Theory Paper IX: Plant physiology 8. Concept of photoperiodism and vernalization. Phytochrome - chemical nature, photobiological properties and role in flowering.</p> <p>Practical Paper XI: Plant physiology Revision Practical Class</p>	5
		3		6		2
		2		2		2
Feb	<p>Theory CC3: Mycology and Phytopathology Unit 6: Oomycota</p>	4	<p>Theory CC9: Biomolecules and Cell Biology Unit 1: Biomolecules Practical CC9: Biomolecules and Cell Biology Unit 2: Study of plant cell structure with the help of epidermal peel mount of <i>Onion/Rhoso/Crinan</i>.</p>	6	<p>Theory Paper IX: Plant physiology 9. Seed physiology: Concept of dormancy, quiescence and germination. Dormancy - types, causes, significance, breaking of dormancy. Germination - a basic concept.</p> <p>Practical Paper XI: Biochemistry Revision Practical Class</p>	3
						2

Mar	Theory CC3: Mycology and Phytopathology Unit 7: Symbiotic associations	4	Theory CC9: Biomolecules and Cell Biology Unit 1: Biomolecules Practical CC9: Biomolecules and Cell Biology Unit 3: Demonstration of the phenomenon of protoplasmic streaming in Hydrilla leaf.	6 2	Theory Paper IX: Biochemistry Doubt clearing class	2
Apr	Theory CC3: Mycology and Phytopathology Unit 8: Applied Mycology	5	Theory CC9: Biomolecules and Cell Biology Unit 1: Biomolecules Unit 2: Bioregeneretics Practical CC9: Biomolecules and Cell Biology Unit 4: Measurement of cell size by the technique of micrometry	2 4 2	Theory Paper IX: Plant physiology Doubt clearing class	2
May	Theory CC3: Mycology and Phytopathology Unit 8: Applied Mycology Practical CC3: Mycology and Phytopathology 2 Identification	5 1	Theory CC9: Biomolecules and Cell Biology Unit 3: Enzymes Practical CC9: Biomolecules and Cell Biology Unit 6: Study the phenomenon of plasmolysis and deplasmolysis.	6 2	Theory Paper IX: Plant physiology Doubt clearing class	2
June	Theory CC3: Mycology and Phytopathology Doubt clearing class Practical CC3: Mycology and Phytopathology 2 Identification	2 1	Theory CC9: Biomolecules and Cell Biology Doubt clearing class Practical CC9: Biomolecules and Cell Biology Unit 7: Study the effect of organic solvent and temperature on membrane permeability.	2 2	Theory Paper IX: Biochemistry Doubt clearing class	2

B. S. M. C.



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(Assistant Professor)
Botany (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (II)	No. of Lecture	Sem-III (II)	No. of Lecture	Part-III (II)	No. of Lecture
Jul	Theory CC2: Archegoniate Unit 4: Pteridophytes- General characteristics, Classification, Early land plant	4	Practical CC5: Plant Ecology and Phytogeography 1. Study of instruments used to measure microclimatic variables: Soil thermometer, maximum and minimum thermometer, anemometer, psychrometer/hygrometer, rain gauge and lux meter 2. Determination of pH of various soil and water samples (pH meter, universal indicator and pH paper) Theory CC6: Plant systematics Unit 6: Phylogeny of Angiosperms	2 2 2	Theory Paper VII: Economic Botany & Pharmacognosy- 1. Method of cultivation, processing and utilities of the products of the following: Rice, Tea and Jute. Theory Paper VII: Palynology and Reproductive Biology- 1. Microsporangium; Spore/pollen morphology with reference to polarity, size, shape, symmetry, aperture and sculpture. Practical Paper X: B. Microbiology 1. Aseptic method	6 3 2
Aug	Theory CC2: Archegoniate Unit 5: Type Studies- Pteridophytes- Lycopodium, Selaginella	4	Practical CC5: Plant Ecology and Phytogeography 3. Analysis for carbonates, chlorides, nitrates, sulphates, organic matter and base deficiency from two soil samples by rapid field tests. 4. Determination of organic matter of different soil samples by Walkley & Black rapid titration method. Theory CC6: Plant systematics Unit 6: Phylogeny of Angiosperms	2 2 2	Theory Paper VII: Economic Botany & Pharmacognosy- 2. Morphological nature and major uses of the economically important parts of the following products: Cotton (fibre), Sal (wood), Sugarcane (sugar), Mustard (oil) and Coconut (oil). Theory Paper VII: Palynology and Reproductive Biology- 2. Organization of orthotropous ovule, types of ovules; megasporogenesis. Practical Paper X: B. Microbiology 2. Microscopic examination of bacteria from natural habitats: eum and root nodules of leguminous plants.	5 2 2
Sept	Theory CC2: Archegoniate Unit 5: Type Studies- Pteridophytes- Equisetum, Pteris	4	Practical CC5: Plant Ecology and Phytogeography 5. Determination of dissolved oxygen of water samples from polluted and unpolluted sources. Theory CC6: Plant systematics Unit 6: Phylogeny of Angiosperms Practical CC6: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families. Dicotyledons: Malvaceae	2 2 2	Theory Paper VII: Economic Botany & Pharmacognosy- 3. A brief idea about pharmacognosy; definition of drugs, folk medicine, active principles; Pharmacy, Pharmacognosy, Pharmacopoeia and adulteration. Theory Paper VII: Palynology and Reproductive Biology- 3. Pollination: Types and contrivances. Practical Paper X: B. Microbiology	5 2

Oct	Theory CC2: Archegoniate Unit 5: Type Studies- Pteridophytes- Mimosa, Apocary, Apocary	4	Theory CC6: Plant systematics Unit 6: Phylogeny of Angiosperms Practical CC6: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families Dicotyledons: Fabaceae Euphorbiaceae	2 4	3. Differential staining Gram staining. Theory Paper VII: Economic Botany & Pharmacognosy- 4. Study of the following drug plants (Diagnostic features, active principles and uses) Rauwolfia serpentina (root), Adhatoda vasica (leaf), Strychnos nuxvomica (seed), Cinchona succinosa (bark). Theory Paper VII: Palynology and Reproductive Biology- 4. Development of male and female gametophytes (Polygonum type) Practical Paper X: C. Palynology & Reproduction Biology 1. Pollen morphological studies of Impatiens and Hibiscus pollens form prepared slides	2 5 2 2
Nov	Theory CC2: Archegoniate Unit 5: Type Studies- Pteridophytes- Heterospory, seed habit, Telome theory	4	Theory CC6: Plant systematics Unit 6: Phylogeny of Angiosperms Practical CC6: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families Dicotyledons: Apocynaceae, Asclepiadaceae	2 4	Theory Paper VII: Palynology and Reproductive Biology- 5. Fertilization. Practical Paper XI: Ecology 1. Ecological adaptations of some species: Ipomoea aquatica stem, Phyllode of Acacia acaciiformis, Merion leaf and Vanda root	3 3
Dec	Theory CC2: Archegoniate Unit 5: Type Studies- Pteridophytes- Stellar evolution, Ecological & Economic importance	4	Theory CC6: Plant systematics Unit 6: Phylogeny of Angiosperms Practical CC6: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families Dicotyledons: Solanaceae 2. Field visit	2 2 1	Theory Paper VII: Palynology and Reproductive Biology- 6. Endosperm: Types, development of free nuclear type Practical Paper XI: Ecology 2. Quadrat method (minimum size of quadrat, species area curve method and minimum number of quadrats). Practical Field visit to familiarize students with ecology of different sites.	4 3 1
Jan	Sem-II (H)	No. of Lecture	Sem-IV (H)	No. of Lecture	Theory Paper VII: Palynology and Reproductive Biology- 7. Development of typical dicot embryo (Crucifer- type) Practical Paper XI: Pharmacognosy 1. Identification of plant drug materials (on the basis of salient organoleptic and microscopic features of fresh and powder materials). a) Adhatoda (leaf)	2 2
	Theory CC4: Morphology & Anatomy of Angiosperms Unit 1: Introduction and scope of Plant Anatomy Unit 2: Structure and Development of Plant Body CC4: Morphology & Anatomy of Angiosperms	1 3	Theory CC8: Palaeobotany & Palynology Unit 1: Introduction, importance of Palaeobotany Practical CC8: Palaeobotany & Palynology Unit 2: Pollen morphological studies of Impatiens and Hibiscus pollens form prepared slides	5 2		

	1. Study of anatomical details through permanent slides, temporary stain mounts/macerations/museum specimens with the help of suitable examples.	2				
Feb	Theory CC4: Morphology & Anatomy of Angiosperms Unit 3: Tissues Practical CC4: Morphology & Anatomy of Angiosperms 1. Study of anatomical details through permanent slides/temporary stain mounts/macerations/museum specimens with the help of suitable examples	5 2	Theory CC8: Palaeobotany & Palynology Unit 2: Definition of fossil, process of fossilization, types of fossils on the basis of their preservation; concept of Form Genus Practical CC8: Palaeobotany & Palynology Unit 2: Pollen morphological studies of Impatiens and Hibiscus pollens form prepared slides	15 2	NIL	NIL
Mar	Theory CC4: Morphology & Anatomy of Angiosperms Unit 3: Tissues Practical CC4: Morphology & Anatomy of Angiosperms 2. Study of the secondary structures of stem of the following genera: Bignonia, Dracaena (Cordylina), Boerhaavia and Strychnos.	5 2	Theory CC8: Palaeobotany & Palynology Unit 5: Microsporogenesis; Sperm/pollen morphology with reference to polarity, size, shape, symmetry, aperture and sculpture	15	NIL	NIL
Apr	Theory CC4: Morphology & Anatomy of Angiosperms Unit 4: Apical meristems Practical CC4: Morphology & Anatomy of Angiosperms 2. Study of the secondary structures of stem of the following genera: Bignonia, Dracaena (Cordylina), Boerhaavia and Strychnos.	5 2	Theory CC8: Palaeobotany & Palynology Unit 6: Organization of orthostepous ovule, types of ovules; megasporogenesis.	10	NIL	NIL
May	Theory CC4: Morphology & Anatomy of Angiosperms Unit 4: Apical meristems Practical CC4: Morphology & Anatomy of Angiosperms 3. Xylem: Tracheary elements-tracheids, vessel elements,	5 2	Theory CC8: Palaeobotany & Palynology Unit 7: Pollination: Types and contrivances.	10	NIL	NIL

	thickenings, perforation plates, xylem fibres (from permanent slides)					
June	Theory CC4: Morphology & Anatomy of Angiosperms Unit 4: Apical meristems Practical CC4: Morphology & Anatomy of Angiosperms 3. Xylem: Tracheary elements-tracheids, vessel elements, thickenings, perforation plates, xylem fibres. (from permanent slides)	4 2	Theory CC3: Palaeobotany & Palynology Doubt clearing class Practical CC3: Palaeobotany & Palynology Revise Practical Class	2 2	NIL	NIL

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TEACHING PLAN OF DR. SANDIPAN CHATTERJEE

(Assistant Professor)

Botany (Honours) (2018-19) (July 2018 - June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory: CC1: Microbiology & Physiology Unit 1: Introduction to microbial world Practical CC1: Microbiology & Physiology Aseptic method	3 1	Theory CC5: Plant Ecology and Phytogeography Unit 5: Ecosystem Practical CC6: Plant systematics Monocotyledons: Liliaceae Theory SECI: Agricultural Botany Unit: 2 Organic farming a) Microbes used as bio fertilizer	8 2 2	Theory Paper VII: Microbiology 1. Bacterial structure and function. Capsule, flagella, pili, cell wall (chemical composition and characteristics), plasma membrane, ribosomes, cytoplasmic inclusions (PIRB, Volutin). Plasmids and bacterial chromosome, endospore.	4
Aug	Theory: CC1: Microbiology & Physiology Unit 2: Viruses Practical CC1: Microbiology & Physiology Temporary preparation of <i>Neuroc. Synnema</i> .	4 2	Theory CC5: Plant Ecology and Phytogeography Unit 6: Population ecology Practical CC6: Plant systematics Monocotyledons: Poaceae. Theory SECI: Agricultural Botany Unit: 2 Organic farming b) Cyanobacteria isolation and mass multiplication	4 2 2	Theory Paper VII: Microbiology 2. Principles and modern approaches of bacterial Taxonomy, brief outline of Prokaryotic classification (Bergey's Manual of systematic Bacteriology, 2nd edition, 2001). Concept of Bacteria and Archaea.	4
Sept	Theory: CC1: Microbiology & Physiology Unit 2: Viruses Practical CC1: Microbiology & Physiology Aseptic method Temporary preparation of <i>Zygnema, Oedogonium</i>	4 2	Theory CC5: Plant Ecology and Phytogeography Unit 7: Plant communities Practical CC6: Plant systematics Monocotyledons: Liliaceae. Theory SECI: Agricultural Botany Unit: 2 Organic farming c) Mycorrhizal association in Agriculture	8 2 2	Theory Paper VII: Microbiology 3. Economic importance of microorganisms i) Agricultural Microbiology (Biofertilizer, biopesticides), ii) Industrial Microbiology (in fermentation and Pharmaceuticals), iii) Medical Microbiology (air borne - Influenza; Water borne - Cholera; Food borne - Botulism; Brief idea about epidemiology, causal organism and control).	4
Oct	Theory: CC1: Microbiology & Physiology Unit 3: Bacteria Practical CC1: Microbiology & Physiology Aseptic method Temporary preparation of <i>Chara and Functheria</i>	7 2	Theory CC5: Plant Ecology and Phytogeography Unit 8: Functional aspects of ecosystem Practical CC6: Plant systematics Monocotyledons: Liliaceae Theory SECI: Agricultural Botany Unit: 2 Organic farming Special class	8 2 2	Theory Paper VII: Microbiology 4. Brief idea about genetic recombination in bacteria; Transformation, Conjugation and Transduction.	4
Nov	Theory: CC1: Microbiology & Physiology Unit 3: Bacteria Practical CC1: Microbiology & Physiology Practice classes	7 2	Theory CC6: Plant systematics Unit 3: Botanical nomenclature Practical CC6: Plant systematics Monocotyledons: Poaceae. Theory SECI: Agricultural Botany Unit: 2 Organic farming Dust clearing session	7 2 2	Theory Paper VII: Microbiology 5. Viruses: General concept, nature of viruses, structure of TMV, T2 and HFV; Viral multiplication - Lytic and Lysogenic cycles.	4
Dec	Theory: CC1: Microbiology & Physiology Special classes + doubt clearing discussions	4	Theory CC6: Plant systematics Unit 3: Botanical nomenclature Practical CC6: Plant systematics	3	Theory Paper VIII: Microbiology 6. Brief idea about Pinn and Vault.	2

	Practical CC1: Microbiology & Phycology Practice classes	2	2. Field visit Theory SEC1: Agricultural Botany Unit 2 Organic Farming Question Answer session	1 1	Practical Field visit to familiarise students with ecology of different sites	1
	Sem-II (II)	No. of Lectures	Sem-IV (II)	No. of Lecture	Theory Paper VII: Microbiology Doubt clearing class	2
Jan	Theory CC3: Mycology and Phytopathology Unit 1: Introduction to true fungi Practical CC3: Mycology and Phytopathology 1 Study of the following genera and their identification: <i>Rhizopus</i>	6 2	Theory CC10: Molecular Biology Unit 1: Nucleic acids: Carriers of genetic information Unit 2: The Structures of DNA and RNA / Genetic Material Practical CC10: Molecular Biology Unit 1: Preparation of LB medium and raising <i>E. coli</i> . Theory SEC2: Biofertilizers Unit 1: General account about the microbes used as biofertilizer - <i>Rhizobium</i> -isolation, Identification, mass multiplication, carrier-based inoculants, Actinorrhizal symbiosis.	4 5 2 2		
Feb	Theory CC3: Mycology and Phytopathology Unit 2: Cryptomycota and Zygomycota Practical CC3: Mycology and Phytopathology 1 Study of the following genera and their identification: <i>Talaromyces</i>	5 2	Theory CC10: Molecular Biology Unit 2: The Structures of DNA and RNA / Genetic Material Unit 3: The replication of DNA Practical CC10: Molecular Biology Unit 2: Study of genomic DNA from <i>E. coli</i> through photographs Theory SEC2: Biofertilizers Unit 1: General account about the microbes used as biofertilizer - <i>Rhizobium</i> -isolation, Identification, mass multiplication, carrier based inoculants, Actinorrhizal symbiosis.	5 5 2 2	Theory Paper VII: Microbiology Doubt clearing class	2
Mar	Theory CC3: Mycology and Phytopathology Unit 3: Ascomycota Practical CC3: Mycology and Phytopathology 1 Study of the following genera and their identification: <i>Alternaria</i>	4 2	Theory CC10: Molecular Biology Unit 3: The replication of DNA Unit 6: Processing and modification of RNA Practical CC10: Molecular Biology Unit 3: Study of DNA replication mechanisms through photographs (Rolling circle, Theta replication and semi-discontinuous replication). Theory SEC2: Biofertilizers Unit 2: <i>Aspergillum</i> : isolation and mass multiplication - carrier based inoculant, associative effect of different microorganisms. <i>Azotobacter</i> : classification, characteristics - crop response to <i>Azotobacter</i> inoculum, maintenance and mass multiplication	5 4 2 4	NIL	NIL
Apr	Theory CC3: Mycology and Phytopathology Unit 3: Ascomycota Practical CC3: Mycology and Phytopathology 1 Study of the following genera and their	4 2	Theory CC10: Molecular Biology Unit 6: Processing and modification of RNA Unit 7: Translation Practical CC10: Molecular Biology Unit 4: Study of structures of prokaryotic RNA polymerase and	4 4 2	NIL	NIL

	Identification: <i>Ascomycota</i>		eukaryotic RNA polymerase II through photoreceptors Theory SEC2: Biofertilizers Unit 2: <i>Ascomycota</i> isolation and mass multiplication - carrier based inoculant, associative effect of different microorganisms, <i>Ascomycota</i> : classification, characteristics - crop response to <i>Ascomycota</i> inoculum, maintenance and mass multiplication	4		
May	Theory CC3: Mycology and Phytopathology Unit 4: Basidiomycota Practical CC3: Mycology and Phytopathology Study of the following genera and their identification: <i>Ascomycota</i>	6	Theory CC10: Molecular Biology Unit 7: Translation Practical CC10: Molecular Biology Repeat practical Class	4	NIL	NIL
		2	Theory SEC2: Biofertilizers Unit 5: Organic farming	3		
June	Theory CC3: Mycology and Phytopathology Unit 4: Basidiomycota Practical CC3: Mycology and Phytopathology Study of the following genera and their identification: <i>Ascomycota</i>	2	Theory CC10: Molecular Biology Special class Practical CC10: Molecular Biology Repeat practical Class	2	NIL	NIL
		2	Theory SEC2: Biofertilizers Unit 5: Organic farming	3		

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TEACHING PLAN OF DR. ANIRBAN PAUL
(Assistant Professor)
Botany (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	<p>Theory CC1: Microbiology & Phycology Unit 4: Algae- General character, range of thallus structure, cellular organization CC2: Archegoniate Unit: Gymnosperms- General characteristics</p>	<p>2</p> <p>2</p>	<p>Theory CC6: Plant systematics Unit 1: Significance of Plant systematics Practical CC6: Plant systematics 2. Field visit 3. Herbarium Preparation Theory SEC1: Agricultural Botany Unit 3 Plant breeding, Tissue culture and Biotechnology a) Mass selection and pure line selection, heterosis breeding</p>	<p>6</p> <p>2</p> <p>3</p>	<p>Theory Paper VIII: Cell Biology & Biotechnology 1. Cell structure, Ultrastructure and functions of Plasma membrane, Mitochondrion, Chloroplast, Nuclear envelope with nuclear pore complex, Golgi apparatus, Endoplasmic reticulum and Ribosome. 2. Nucleic acid: DNA and RNA - Types, Physical and Chemical structures of B-DNA and t-RNA.</p> <p>Theory Paper VIII: Genetics & Plant Breeding 1. Mendelism and Chromosomal basis of inheritance.</p> <p>Practical Paper XI: Cell Biology, Genetics & Plant Breeding 1. Study of mitotic cell division and chromosome complement in <i>Allium cepa</i> by aceto-orcein squash technique.</p>	<p>4</p> <p>4</p> <p>2</p> <p>2</p>
Aug	<p>Theory CC1: Microbiology & Phycology Unit 4: Algae- Endosymbiotic theory, Fréchet's classification (1935) CC2: Archegoniate Unit: Gymnosperms- Classifications of Stewart & Rothwell (1993)</p>	<p>1</p> <p>2</p>	<p>Theory CC6: Plant systematics Unit 1: Significance of Plant systematics Practical CC6: Plant systematics 2. Field visit 3. Herbarium Preparation Theory SEC1: Agricultural Botany Unit 3 Plant breeding, Tissue culture and Biotechnology b) Marker assisted breeding for agronomic crops</p>	<p>6</p> <p>2</p> <p>2</p>	<p>Theory Paper VIII: Cell Biology & Biotechnology 3. Replication of DNA - Mechanism and evidence of semi-conservative replication in prokaryotes. 4. Transcription of DNA: Mechanism in Prokaryotes; Nuclear mRNA processing in Eukaryotes (Capping, Polyadenylation or tailing and Splicing). Application of Plant tissue culture.</p> <p>Theory Paper VIII: Genetics & Plant Breeding 2. Modified Mendelian Ratios: Lethal gene, Epistasis and Complementary gene interaction.</p> <p>Practical Paper XI: Cell Biology, Genetics & Plant Breeding 1. Study of mitotic cell division and chromosome complement in <i>Allium cepa</i> by aceto-orcein squash technique.</p>	<p>5</p> <p>3</p> <p>6</p> <p>2</p>

Sept	<p>Theory CC1: Microbiology & Phycology Unit 4: Algae- Evolutionary classification of Lee (2008) CC2: Archegoniate Unit6: Gymnosperms- <i>Pinus</i> sp.</p>	<p>1</p> <p>4</p>	<p>Theory CC6: Plant systematics Unit 2: Taxonomic hierarchy Practical CC6: Plant systematics 2. Field visit 3. Herbarium Preparation Theory SEC1: Agricultural Botany Unit 3 Plant breeding, Tissue culture and Biotechnology c) Micro propagation techniques, different organ culture</p>	<p>6</p> <p>2</p> <p>2</p>	<p>Theory Paper VIII: Cell Biology & Biotechnology 5. Translation: Mechanism in Prokaryotes 6. Genetic code: Definition, salient features and deciphering the genetic code Theory Paper VIII: Genetics & Plant Breeding 3. Basic concept of Linkage: General idea of Crossing over including molecular mechanism (Holliday Model). Practical Paper XI: Cell Biology, Genetics & Plant Breeding 2. Determination of mitotic index in <i>Allium cepa</i> root tip by aceto-orcein squash technique.</p>	<p>2</p> <p>2</p> <p>3</p> <p>2</p>
Oct	<p>Theory CC1: Microbiology & Phycology Unit 4: Algae- Contributions of Phycologist CC2: Archegoniate Unit6: Gymnosperms- <i>Pinus</i> sp.</p>	<p>1</p> <p>4</p>	<p>Practical CC6: Plant systematics 2. Field visit 3. Herbarium Preparation Theory CC7: Economic Botany Unit 1: Origin of Cultivated Plants Theory SEC1: Agricultural Botany Unit 3 Plant breeding, Tissue culture and Biotechnology d) Agrobacterium mediated transformation, Biolistics</p>	<p>2</p> <p>3</p> <p>2</p>	<p>Theory Paper VIII: Cell Biology & Biotechnology 7. Gene regulation in Prokaryotes: Lac operon (negative and positive control). 8. Eukaryotic chromosome structure: Ultrastructure of chromatin and its organization into chromosomes. Concept of euchromatin and heterochromatin. Theory Paper VIII: Genetics & Plant Breeding 4. Structural changes of chromosome (Deletion, Duplication, Translocation and Inversion) with their meiotic behavior and genetic consequences. Practical Paper XI: Cell Biology, Genetics & Plant Breeding 7. Determination of mitotic index in <i>Allium cepa</i> root tip by aceto-orcein squash technique.</p>	<p>3</p> <p>2</p> <p>3</p> <p>2</p>
Nov	<p>Theory CC1: Microbiology & Phycology Unit 4: Algae- Roll of algae in environment, agriculture, biotechnology & industry CC2: Archegoniate Unit6: Gymnosperms- <i>Conium</i> sp.</p>	<p>1</p> <p>4</p>	<p>Practical CC6: Plant systematics 2. Field visit 3. Herbarium Preparation Theory CC7: Economic Botany Unit 1: Origin of Cultivated Plants Theory SEC1: Agricultural Botany Unit 3 Plant breeding, Tissue culture and Biotechnology e) GMO, transgenic plant, patent.</p>	<p>2</p> <p>3</p> <p>2</p>	<p>Theory Paper VIII: Cell Biology & Biotechnology 9. Cell cycle and its regulation (MPF only), phases and events of Mitosis and Meiosis with their significance. 10. Brief idea: Transposable elements, Gene amplification (PCR), Transgenic plant (Bt cotton). Theory</p>	<p>4</p> <p>3</p>

					<p>Paper VIII: Genetics & Plant Breeding</p> <p>5. Numerical changes of chromosome (Euploidy and Aneuploidy) and their applications.</p> <p>Practical</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>3. Study of meiotic division in <i>Allium cepa</i> and <i>Rhizo spathacea</i> / <i>discolor</i> by aceto carmine staining technique</p>	2
Dec	<p>Theory</p> <p>CC2: Archegoniate</p> <p>Unit6 Gymnosperms- Ecological and economic importance</p>	2	<p>Theory</p> <p>CC6: Plant systematics</p> <p>Doubt clearing session</p> <p>Theory</p> <p>CC7: Economic Botany</p> <p>Unit 10: Timber plants</p> <p>Theory</p> <p>SEC1: Agricultural Botany</p> <p>Unit-3 Plant breeding, Tissue culture and Biotechnology</p> <p>0) Molecular markers used in Agriculture</p>	1	<p>Theory</p> <p>Paper VIII: Cell Biology & Biotechnology</p> <p>11 Recombinant DNA Technology: Basic concepts, Tools - Restriction enzymes (types with examples), Lygase; Vectors (Plasmid and Bacteriophage)</p> <p>12. Plant tissue culture: General techniques, concept of Basal medium, Micropropagation,</p> <p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>6. Gene mutation- types, physical & chemical mutagens and their effects.</p> <p>Practical</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>3. Study of meiotic division in <i>Allium cepa</i> and <i>Rhizo spathacea</i> / <i>discolor</i> by aceto carmine staining technique.</p> <p>Practical</p> <p>Field visit to familiarize students with ecology of different sites</p>	3
				2	<p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>6. Gene mutation- types, physical & chemical mutagens and their effects.</p> <p>Practical</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>3. Study of meiotic division in <i>Allium cepa</i> and <i>Rhizo spathacea</i> / <i>discolor</i> by aceto carmine staining technique.</p> <p>Practical</p> <p>Field visit to familiarize students with ecology of different sites</p>	4
					<p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>6. Gene mutation- types, physical & chemical mutagens and their effects.</p> <p>Practical</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>3. Study of meiotic division in <i>Allium cepa</i> and <i>Rhizo spathacea</i> / <i>discolor</i> by aceto carmine staining technique.</p> <p>Practical</p> <p>Field visit to familiarize students with ecology of different sites</p>	2
					<p>Theory</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>3. Study of meiotic division in <i>Allium cepa</i> and <i>Rhizo spathacea</i> / <i>discolor</i> by aceto carmine staining technique.</p> <p>Practical</p> <p>Field visit to familiarize students with ecology of different sites</p>	2
					<p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>6. Gene mutation- types, physical & chemical mutagens and their effects.</p> <p>Practical</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>3. Study of meiotic division in <i>Allium cepa</i> and <i>Rhizo spathacea</i> / <i>discolor</i> by aceto carmine staining technique.</p> <p>Practical</p> <p>Field visit to familiarize students with ecology of different sites</p>	1
Jan	Sem-II (II)	No. of Lecture	Sem-IV (II)	No. of Lecture	<p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>7. Aims and methods of Plant breeding: Introduction, Acclimatization, Domestication, Selection and Hybridization</p> <p>Practical</p> <p>Paper XI: Cell Biology, Genetics & Plant Breeding</p> <p>4. Testing of goodness of fit with Mendelian mono- and dihybrid ratios</p>	4
	<p>Theory</p> <p>Core Course III: Mycology and Phytopathology</p> <p>Unit 9. Phytopathology</p> <p>Phytopathology terms + Koch's postulate</p> <p>Practical</p> <p>Core Course III: Mycology and Phytopathology</p> <p>Plant disease Identification + Study Tour</p>	1	<p>Theory</p> <p>CC9: Biomolecules and Cell Biology</p> <p>Unit 4: The cell</p> <p>Practical</p> <p>CC9: Biomolecules and Cell Biology</p> <p>Unit 5: Cytochemical staining of DNA- Feulgen and cell wall in the epidermal peel of onion using Periodic Schiff's (PAS) staining technique</p>	4		2
					<p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>8. Heterosis: Objectives, genetic basis and</p>	2
Feb	<p>Theory</p> <p>Core Course III: Mycology and Phytopathology</p> <p>Unit 9.</p>		<p>Theory</p> <p>CC9: Biomolecules and Cell Biology</p> <p>Unit 5: Cell wall & plasma membrane</p>	4	<p>Theory</p> <p>Paper VIII: Genetics & Plant Breeding</p> <p>8. Heterosis: Objectives, genetic basis and</p>	4

	Phytopathology: Symptom, distribution & types of disease Practical Core Course III: Mycology and Phytopathology Study of the following diseases: White rust, Rust of <i>Azadirachta</i> & leafy rust of wheat	2 3	Unit 6: Cell organelles Nucleus + Chromosome Practical CC9: Biomolecules and Cell Biology Unit 6: Study different stages of mitosis of <i>Allium cepa</i>	4 2	applications Practical Paper XI: Cell Biology, Genetics & Plant Breeding 4. Testing of goodness of fit with Mendelian mono- and dihybrid ratios	2
Mar	Theory Core Course III: Mycology and Phytopathology Unit 9: Phytopathology Host defense mechanism + Prevention-control Practical Core Course III: Mycology and Phytopathology Citrus Canker + Angular leaf spot of cotton + TMV + Vein clearing (From Herbarium)	2 3	Theory CC9: Biomolecules and Cell Biology Unit 6: Cell organelles Practical CC9: Biomolecules and Cell Biology Unit 8: Study different stages of mitosis of <i>Allium cepa</i>	4 2	Theory Paper VIII: Genetics & Plant Breeding 9. Biometry: Frequency distribution - mean, median, mode, class range, standard deviation and standard error. Probability: product law, Sum law, conditional probability, Chi-square test of goodness of fit	4
Apr	Theory Core Course III: Mycology and Phytopathology Unit 9: Phytopathology Citrus canker + bacterial blight of rice + TMV + Late blight of potato (Disease cycle & control) Practical Core Course III: Mycology and Phytopathology Early & Late blight of potato + Black stem rust of wheat + White rust of crucifers (From Herbarium)	3 2	Theory CC9: Biomolecules and Cell Biology Unit 6: Cell organelles Practical CC9: Biomolecules and Cell Biology Unit 8: Study different stages of mitosis of <i>Allium cepa</i>	4 2	Theory Paper VIII: Cell Biology, Genetics & Plant Breeding Doubt clearing class	2
May	Theory Core Course III: Mycology and Phytopathology Unit 9: Phytopathology Leaf spot of rice + Black stem rust of wheat + Loose and covered rust of wheat + White rust of crucifer (Disease cycle & control) Practical Core Course III: Mycology and Phytopathology mycorrhizae (photographic)	4 1	Theory CC9: Biomolecules and Cell Biology Unit 7: Cell division & cell cycle Practical CC9: Biomolecules and Cell Biology Unit 8: Study different stages of mitosis of <i>Allium cepa</i>	6 2	NIL	NIL
June	Theory and Practical Theory Core Course III: Mycology and Phytopathology Unit 2: Microbiology Special classes + doubt clearing + discussions	1	Theory and Practical: Special classes + doubt clearing + discussions	2	NIL	NIL

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Head
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TEACHING PLAN OF SHAMIM ALAM
(Assistant Professor)
Botany (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (II)	No. of Lecture	Sem-III (II)	No. of Lecture	Part-III (II)	No. of Lecture
Jul	CC1: Microbiology & Physiology Unit 5: Cyanophyta and Xanthophyta Practical CC1: Microbiology & Physiology Staining & Bacteria from cord & root nodules	2	Theory CC5: Plant Ecology and Phytogeography Unit 6: Phytogeography Practical CC5: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families: Dicotyledons: Scrophulariaceae, Lamnaceae	11	Theory Paper VII: Ecology 1. Ecology: Autecology and Synecology (definition only)	3
		2		2		
Aug	CC1: Microbiology & Physiology Unit 5: Cyanophyta and Xanthophyta Practical CC1: Microbiology & Physiology Identification of Algae	2	Theory CC6: Plant systematics Unit 4: Systems of classification CC6: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families: Dicotyledons: Verbenaceae, Acanthaceae	12	Theory Paper VII: Ecology 2. Environment: Climatic, edaphic and biotic factors.	3
		2		2		
Sept	Theory CC1: Microbiology & Physiology Unit 5: Cyanophyta and Xanthophyta Practical CC2: Archegoniate Marchantia	2	Theory CC6: Plant systematics Unit 5: Biometrics, numerical taxonomy and cladistics Practical CC6: Plant systematics 1. Study of vegetative and floral characters from the locally available plants of the following families: Dicotyledons: Rubiaceae, Asteraceae	10	Theory Paper VII: Ecology 3. Ecosystem: Definition, concept of ecological pyramids and energy flow.	4
		2		2		
Oct	Theory CC1: Microbiology & Physiology Doubt clearing class Practical CC2: Archegoniate <i>Anthoceros</i>	2	Theory CC7: Economic Botany Unit 2: Cereals Unit 3: Legumes Practical CC7: Economic Botany 8. Rubber: specimen, photograph/model of tapping, samples of rubber products.	6	Theory Paper VII: Ecology 4. Ecological succession (Hydrosera, Xerocera).	4
		2		2		
Nov	Theory CC1: Microbiology & Physiology Doubt clearing class Practical CC2: Archegoniate <i>Fellia</i>	2	Theory CC7: Economic Botany Unit 4: Sources of sugars and starches Unit 5: Spices Practical CC7: Economic Botany 9. Drug-yielding plants: Organoleptic study of specimens of <i>Andropogon</i> and <i>Catharanthus</i> . 10. Woods: <i>Tectona</i> , <i>Plants</i> . Specimen, Section of young stem.	4	Theory Paper VII: Ecology 5. Morphological, anatomical and physiological adaptations of xerophytes, hydrophytes, halophytes and epiphytes.	4
		2		2		
Dec	Theory CC1: Microbiology & Physiology Doubt clearing class Practical CC2: Archegoniate <i>Fanaria</i>	2	Theory CC7: Economic Botany Unit 6: Beverages Practical CC7: Economic Botany 11. Fiber-yielding plants: Jute	4	Theory Paper VII: Ecology 6. Biodiversity (a brief idea) and its conservation (in-situ, ex-situ conservation and cryopreservation).	4
		2		2	Practical Field visit to familiarize students with ecology of different sites	1

Jan	Sem-II (II)	No. of Lecture	Sem-IV (II)	No. of Lecture	Theory Paper VII: Ecology 7. Pollution, Definition and types with special reference to air and water pollution	4
	Theory CC4: Morphology & Anatomy of Angiosperms Unit 5: Vascular Cambium and Wood Practical CC4: Morphology & Anatomy of Angiosperms 4. Phloem: Sieve tubes-sieve plates; companion cells; phloem fibres, (from permanent slides)	4 2	Theory CC8: Palaeobotany & Palynology Unit 3: Stratigraphy Practical CC8: Palaeobotany & Palynology Unit 1: Study (including mode of preservation) of the following: <i>Lepidodendron</i> , (stem in T. S.) Theory SEC2: Biofertilizers Unit 3: Cyanobacteria	5 2 2		
Feb	Theory CC4: Morphology & Anatomy of Angiosperms Unit 5: Vascular Cambium and Wood Practical CC4: Morphology & Anatomy of Angiosperms 4. Phloem: Sieve tubes-sieve plates; companion cells; phloem fibres, (from permanent slides)	4 2	Theory CC8: Palaeobotany & Palynology Unit 3: Stratigraphy Practical CC8: Palaeobotany & Palynology Unit 1: Study (including mode of preservation) of the following: <i>Calamites</i> (stem in T. S.) Theory SEC2: Biofertilizers Unit 3: Cyanobacteria	5 2 2	Theory Paper VII: Ecology Doubt clearing class	2
Mar	Theory CC4: Morphology & Anatomy of Angiosperms Unit 5: Vascular Cambium and Wood Practical CC4: Morphology & Anatomy of Angiosperms 5. Epidermal system: cell types, stomata types; trichomes: non-glandular and glandular, lenticels	4 2	Theory CC8: Palaeobotany & Palynology Unit 3: Stratigraphy Practical CC8: Palaeobotany & Palynology <i>Bucklandia</i> (stem, specimen) Theory SEC2: Biofertilizers Unit 4: Mycorrhizal association	5 2 2	Theory Paper VII: Ecology Doubt clearing class	2
Apr	Theory CC4: Morphology & Anatomy of Angiosperms Unit 5: Vascular Cambium and Wood Unit 6: Adaptive and Protective Systems Practical CC4: Morphology & Anatomy of Angiosperms 5. Epidermal system: cell types, stomata types; trichomes: non-glandular and glandular, lenticels	2 2 2	Theory CC8: Palaeobotany & Palynology Unit 4: Geologic Time Scale Practical CC8: Palaeobotany & Palynology Unit 1: Study (including mode of preservation) of the following: <i>Glossopitys</i> (leaf, specimen) Theory SEC2: Biofertilizers Unit 4: Mycorrhizal association	3 2 2	NIL	NIL
May	Theory CC4: Morphology & Anatomy of Angiosperms Unit 6: Adaptive and Protective Systems Practical CC4: Morphology	3	Theory CC8: Palaeobotany & Palynology Unit 4: Geologic Time Scale Practical CC8: Palaeobotany & Palynology Unit 1: Study (including mode of preservation) of the following:	5 2	NIL	NIL

	& Anatomy of Angiosperms 6. Root: monocot, dicot, secondary growth (from permanent slides).	2	<i>Lyginopteris</i> (stem in T. S.) Theory SEC2: Biofertilizers Unit 4: Mycorrhizal association	2		
June	Theory CC4: Morphology & Anatomy of Angiosperms Unit 6: Adaptive and Protective Systems Practical CC4: Morphology & Anatomy of Angiosperms 6. Root: monocot, dicot, secondary growth (from permanent slides).	3	Theory CC8: Palaeobotany & Palynology Doubt clearing class Practical CC8: Palaeobotany & Palynology Unit 1: Study (including mode of preservation) of the following: <i>Vertebraria</i> (root, specimen)	2	NIL	NIL
		2	Theory SEC2: Biofertilizers Unit 4: Mycorrhizal association	2		

[Signature]



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TEACHING PLAN OF MS. MOUSUMI MUKHERJEE

(Part-Time Teacher)

Botany (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part-III (H)	No. of Lecture
Jul	Theory CC2: Archegoniate Unit 1: Introduction-archegoniate; Transition and adaptation to land habit, Alternation of generations Practical CC2: Archegoniate <i>Lycopodium</i>	4 2	Theory CC5: Plant Ecology and Phytogeography Unit 1: Introduction Practical CC5: Plant Ecology and Phytogeography 6. Ecological adaptations of some species: <i>Ipomoea aquatica</i> stem, Phyllode of <i>Acraecium ruficaliformis</i>	4 2	NIL	NIL
Aug	Theory CC2: Archegoniate Unit 2: Bryophytes-General characteristics & Classification [upto order] of Schuster (1968), Adaptations to land habit, Range of thallus organization Practical CC2: Archegoniate <i>Selaginella</i>	6 2	Theory CC5: Plant Ecology and Phytogeography Unit 1: Introduction Unit 2: Soil Practical CC5: Plant Ecology and Phytogeography 6. Ecological adaptations of some species: <i>Neurium</i> leaf and <i>Fanda</i> root	2 2 2	NIL	NIL
Sept	Theory CC2: Archegoniate Unit 3: Type Studies- Bryophytes- <i>Riccia</i> , <i>Marchantia</i> Practical CC2: Archegoniate <i>Equisetum</i>	4 2	Theory CC5: Plant Ecology and Phytogeography Unit 2: Soil Practical CC5: Plant Ecology and Phytogeography 7. Determination of minimal quadrat size for the study of herbaceous vegetation in the college campus, by species area curve method (species to be listed).	4 2	NIL	NIL
Oct	Theory CC2: Archegoniate Unit 3: Type Studies- Bryophytes- <i>Pellia</i> , <i>Anthoceros</i> Practical CC2: Archegoniate <i>Pteris</i>	4 2	Theory CC5: Plant Ecology and Phytogeography Unit 3: Water Practical CC5: Plant Ecology and Phytogeography 8. Field visit to familiarize students with ecology of different sites.	4 2	NIL	NIL
Nov	Theory CC2: Archegoniate Unit 3: Type Studies- Bryophytes- <i>Sphagnum</i> , <i>Funaria</i> Practical CC2: Archegoniate Revise Practical Class	4 2	Theory CC5: Plant Ecology and Phytogeography Unit 4: Light, temperature, wind and fire Practical CC5: Plant Ecology and Phytogeography 8. Field visit to familiarize students with ecology of different sites.	4 1	NIL	NIL
Dec	Theory CC2: Archegoniate Doubt clearing class Practical CC2: Archegoniate Revise Practical Class	2 1	Theory CC5: Plant Ecology and Phytogeography Doubt clearing class Practical CC5: Plant Ecology and Phytogeography Revise Practical Class	1 1	Field visit to familiarize students with ecology of different sites.	1
Jan	Sem-II (H)	No. of	Sem-IV (H)	No. of	NIL	NIL

		Lecture		Lecture		
	Theory CC4: Morphology & Anatomy of Angiosperms Unit 7: Leaves and Inflorescence Practical CC4: Morphology & Anatomy of Angiosperms 7. Stem: monocot, dicot - primary and secondary growth; periderm (from permanent slides)	2	Theory CC10: Molecular Biology Unit 4: Central dogma and genetic code Unit 5: Transcription Practical CC10: Molecular Biology Unit 5: Photographs establishing nucleic acid as genetic material (Messelson and Stahl's, Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments)	2 2 2		
Feb	Theory CC4: Morphology & Anatomy of Angiosperms Unit 7: Leaves and Inflorescence Practical CC4: Morphology & Anatomy of Angiosperms 7. Stem: monocot, dicot - primary and secondary growth; periderm (from permanent slides)	2 2	Theory CC10: Molecular Biology Unit 5: Transcription Practical CC10: Molecular Biology Unit 5: Photographs establishing nucleic acid as genetic material (Messelson and Stahl's, Avery et al, Griffith's, Hershey & Chase's and Fraenkel & Conrat's experiments)	4 2	NIL	NIL
Mar	Theory CC4: Morphology & Anatomy of Angiosperms Unit 8: Flower, Fruit and Seed Practical CC4: Morphology & Anatomy of Angiosperms 8. Leaf: Different variations; C4 leaves (Kranz anatomy)	2 2	Theory CC10: Molecular Biology Unit 5: Transcription Practical CC10: Molecular Biology Unit 6: Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozyme and Alternative splicing.	4 2	NIL	NIL
Apr	Theory CC4: Morphology & Anatomy of Angiosperms Unit 8: Flower, Fruit and Seed Practical CC4: Morphology & Anatomy of Angiosperms 9. Cystolith, lithocysts and Raphides.	2 2	Theory CC10: Molecular Biology Unit 5: Transcription Practical CC10: Molecular Biology Unit 6: Study of the following through photographs: Assembly of Spliceosome machinery; Splicing mechanism in group I & group II introns; Ribozyme and Alternative splicing.	4 2	NIL	NIL
May	Theory CC4: Morphology & Anatomy of Angiosperms Unit 8: Flower, Fruit and Seed Practical CC4: Morphology & Anatomy of Angiosperms 10. Types of inflorescences, placentation and fruits	2 2	Theory CC10: Molecular Biology Unit 5: Transcription Practical CC10: Molecular Biology Revise Practical Class	4 2	NIL	NIL
June	Theory CC4: Morphology		Theory CC10: Molecular Biology		NIL	NIL

	& Anatomy of Angiosperms Doubt clearing class Practical CC4: Morphology & Anatomy of Angiosperms Revise Practical Class	2 1	Doubt clearing class Practical CC10: Molecular Biology Revise Practical Class	2 1		
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Mousumi Mukherjee



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**Teaching Plan of Dr. Tanmoy Mandal for B.Sc. Plant Protection (General Course)
(2018-2019) (July 2018 – June 2019)**

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-III (G)	No. of Lecture
Jul	CC-1A Pests and Vectors Theory: Pest-Comprehensive definition. Categories of pests: Practical: Mounting, preserving and labeling of Insect Pests and Vectors.	3	CC-1C Bionomics, Plant disease and their management Theory: Bionomics and Management of major insect pests of Rice & Sugarcane.	5	Paper-IV Group-A Theory: Plant Protection Organisation in India: structural set-up; functions and service to farmers. Practical: Monitoring of key pests and key natural enemies of major crop.	5
		2	Stored grain Pests Practical: Preparation of desired strength of Pesticides	4 2		
			SEC-1 Green Pesticides Theory: Definition of green pesticides	2		
Aug	CC-1A Pests and Vectors Theory: Pathogenic, Competitive, Regular, Sporadic pest with examples and their corresponding vector. Practical: Identification of Insect Pest and diseases.	2	CC-1C Bionomics, Plant disease and their management Theory: Bionomics and Management of major insect pests of Mustard, Potato & Cauliflower.	5	Paper-IV Group-A Theory: Destructive Insects and Pests Act. Practical: Symptoms, collection and identification of common pests of major crops.	4
		2	Common bird pest Practical: Plant protection equipments; handling of rotary duster, Knapsack sprayer and seed dresser	2 2		
			SEC-1 Green Pesticides Theory: Botanical pesticides, Advantage of using botanical insecticides	4		
Sept	CC-1A Pests and Vectors	8	CC-1C Bionomics, Plant disease and	10	Paper-IV Group-A	8

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	<p>Theory: Characteristics of following pests, Protozoan, Nematodes, Mites, Insects, Molluscs, Birds and Rodents</p> <p>Practical: Permanent slide preparation.</p>	2	<p>their management</p> <p>Theory: Bionomics and Management of major insect pests of Brinjal, Jute, Gram, Mango, Tea</p> <p>Practical: Collection of insect pests and their identification, preservation</p> <p>SEC-1 Green Pesticides</p> <p>Theory: preparation of pesticides from neem</p>	2 4	<p>Theory: The Insecticide Act : registration, licensing & inspection, Bionomics and management of any one major pest of each of Jute, Mango, Citrus and Coconut</p> <p>Practical: Monitoring of key pests and key natural enemies of major crop.</p>	2
Oct	<p>CC-1A Pests and Vectors</p> <p>Theory: Locust Migration of Locust, Phase Theory of locust</p> <p>Practical: Collection of insects and other pests.</p>	2 2	<p>CC-1C Bionomics, Plant disease and their management</p> <p>Theory: Termites- Examples, Biology and management</p> <p>Practical: Study of symptoms of attack by insect pests</p> <p>SEC-1 Green Pesticides</p> <p>Theory: preparation of pesticides from tobacco</p> <p>Green pesticides, Method of utilization, mode of action</p>	2 2 4 4	<p>Paper-IV Group-A</p> <p>Theory: Characteristics of Root Knot nematode, Lifecycle and Management of Root Knot nematode</p> <p>Practical: Plant protection equipment: Calibration and use in the field.</p>	5 2
Nov	<p>CC-1A Pests and Vectors</p> <p>Theory: Origin of New Locust Cycle, nature of damage and management of locust</p> <p>Practical: Field trips for collection of specimens and surveillance.</p>	3 2	<p>CC-1C Bionomics, Plant disease and their management</p> <p>Theory: Rodents (<i>Bandicota bengalensis</i>, <i>Rattus rattus</i>) and their management</p> <p>Practical: Field trips for collection of specimens and surveillance</p> <p>SEC-1 Green Pesticides</p> <p>Theory:</p>	2 2 4	<p>Paper-IV Group-A</p> <p>Theory: Forest pests-borer and defoliators and their management.</p> <p>Practical: Symptoms, collection and identification of common forest pests.</p>	4 2

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			preparation of pesticides from Chrysanthemum			
			Green pesticides and chemical pesticides	8		
Dec	CC-1A Pests and Vectors Theory and Practical: Special classes + doubt clearing+ discussions	As per student need	CC-1C Bionomics, Plant disease and their management Theory and Practical: Special classes + doubt clearing+ discussions SEC-1 Green Pesticides Special classes + doubt clearing+ discussions	As per student need	Paper-IV Group-A Theory: Methods of pests managements- Legislation and Eradication Practical: Study tour for collection of specimens and natural enemies from different habitats.	4
	Sem-II (G)	No. of Lecture	Sem-IV (G)	No. of Lecture	Part-III (G)	No. of Lecture
Jan	CC-1B Pest Management Theory: Forecasting : Definition and need Practical: Field trips for collection of specimens and surveillance.	2 2	CC-1D Plant Defence Mechanism Theory: Resistance of Host Plant to insects. Practical: Field trips for collection of specimens and surveillance. SEC-2 Formulation and application of pesticides and their precautions Theory: Formulation of pesticides Sprayer and duster	10 2 4 4	Paper-IV Group-A Theory: Physical, Cultural, Biological, Chemical Methods of pest managements. Practical: visit to centres of Plant Protection such as central IPM Centre, Burdwan; Rice research station, Chinsurah; Department of Plant protection Visva-Bharati, BCKV, Cold storages and warehouses, nurseries	9
Feb	CC-1B Pest Management Theory: Forecasting and monitoring of some insects Practical: Permanent slide preparation.	5 2	CC-1D Plant Defence Mechanism Theory: Physiological inhibitors and feeding deterrents Practical: Study of structural defences	2 2	Paper-IV Group-A Theory: Integrated pests management- definition, genesis, phases of IMP. Practical: Monitoring of key pests and key natural enemies of major crop.	5 2

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			in plants- Trichome			
			SEC-2 Formulation and application of pesticides and their precautions Theory: Solid formulation	4		
			Sprayer -cum- duster, aerosol generator	4		
Mar	CC-1B Pest Management Theory: Major signs and damage due to animal pests Practical: Study of Symptoms of attack by type pests	3 2	CC-1D Plant Defence Mechanism Theory: Ovipositional stimulants and deterrents, feeding stimulants Practical: Plant protection equipment; parts and handling of Rotary Duster. SEC-2 Formulation and application of pesticides and their precautions Theory: Liquid formulation Soil injector, seed dressing machine	4 2 4 4	Paper-IV Group-A Theory: Appropriate IMP, methods with examples from rice and other field crops. Practical: Plant protection equipment: Calibration and use in the field. Theory and Practical: Special classes + doubt clearing+ discussions	7 2 As per student need
Apr	CC-1B Pest Management Theory: Methods of Managements Practical: Identification of common Insect pests of major crops.	10 2	CC-1D Plant Defence Mechanism Theory: Host Plant Nutrients and Insects Resistance Practical: Plant protection equipment; parts and handling of knapsack sprayer. SEC-2 Formulation and application of pesticides and their precautions Theory: Gaseous formulation	10 2 3	B.Sc. Part-III Final Examination, B.U.	
May	CC-1B Pest	10	CC-1D Plant	4		

Tanmoy Mandal

	<p>Management Theory: Integrated Pest Management.</p> <p>Practical: Preservation, Mounting and labeling of specimens</p>	2	<p>Defence Mechanism Theory: Allelochemicals decreasing nutrients bioavailability, Plant breeding for insect resistance</p> <p>Practical: Plant protection equipment; parts and handling of hand compression sprayer and seed dresser</p> <p>SEC-2 Formulation and application of pesticides and their precautions Theory: Precaution</p>	2		
June	<p>CC-1B Pest Management Theory and Practical: Special classes + doubt clearing+ discussions</p>	As per student need	<p>CC-1D Plant Defence Mechanism Theory and Practical: Special classes + doubt clearing+ discussions</p> <p>SEC-2 Formulation and application of pesticides and their precautions Special classes + doubt clearing+ discussions</p>	As per student need		

Department of Plant Protection
Suri Vidyasagar College



Tanmoy Mandal

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DEPARTMENT OF PLANT PROTECTION

TEACHING PLAN OF DR. PAPIA MANDAL (RAHA)

PLANT PROTECTION (G) (2018-2-019) (JULY 2018-JUNE 2019)

MONTH	SEM-I	NO OF LECTURE	SEM-III(GENERAL)	NO OF LECTURE	Part -III (GENERAL) Group- B	NO OF LECTURE
JULY	Theory Unit-4 Classification Of Plant Disease Brief Account Of Bacteria Fungi algae Practical:- Identification Of Plant Disease	8	Theory Unit-1 Predisposition And Epidemiological Factors	4	Theory :Symptoms, Etiology, Disease cycle and management of major plant diseases: Damping off of seedlings, Root rot and wilt of common pulses, Stem rot of jute, Mango- Anthracnose and Malformation. Practical: Seed treatment.	7 1
AUGUST	Theory-Disease Triangle, Viroids, Molecules Unit-5 Dissemination Of Plant Pathogens, Soil Borne, Seed Borne, Air Borne, Water Borne Diseases. Practical-Preparation Of Fungal Slide	8	Theory-Unit 2 Symptoms, Etiology, Disease Cycle & Management Of Major Plant Disease Of Rice, Wheat, Sugarcane, Potato, Tea Practical-Isolation Of Casual Organism	8	Theory :Symptoms, Etiology, Disease cycle and management of major plant diseases: Banana- wilt and bunchy top, Coconut nut fall, Citrus canker, Decline of citrus Practical: Soil treatment	6 1

Papia Mandal (Raha).

SEPTEMBER	THEORY-UNIT'S TRANSMISSION OF COMMON VIRUSES & THEIR COMMON VECTORS UNIT-6 SYMPTOMS MAJOR TYPES DUE TO FUNGI BACTERIA VIRUSES PRACTICAL:- INOCULATION TECHNIQUE	8	UNIT-2 DISEASE OF MUSTARD TOMATO GROUND NUT JUTE BANANA UNIT-3 SEED PATHOLOGY SEED DETERIORATION PRACTICAL:- COLLECTION OF COMMON WEEDS	8 3	Theory :Symptoms, Etiology, Disease cycle and management of major plant diseases: Foot rot complex of beetle vine, die back of rose Practical: soil treatment	5 1
OCTOBER	UNIT-7 EPIDEMIOLOGY ENDEMIC, EPIDEMIC PANDEMIC SPORADIC DISEASES. PRACTICAL:-ISOLATION OF CASUAL ORGANISM	4	UNIT-3 SEED TRANSMISSION STRATEGY AND METHODS OF MANAGEMENT PRACTICAL- STUDY TOUR	2	Theory: forest health management- Cultural, Mycorrhiza Pathogenic problem in forest trees	7
NOVEMBER	UNIT-7 MONOCYCLIC AND POLYCYCLIC DISEASE PYRAMID, STRATEGY OF MANAGEMENT (PANT)	8	UNIT-4 POST HARVEST DISEASE AND PERISHABLES LOSS DISEASE OF FRUITS, VEGETABLE (ONE)	3	Theory: soil borne plant pathogens- transmission and management. Practical: Identification	5

	PRACTICAL-REPEAT				of common diseases	2
DECEMBER	THEORY-UNIT: 7 STRATEGY OF MANAGEMENT	6	UNIT-5 WEED CLASSIFICATION EXAMPLES AND MANAGEMENT	4	Theory: methods of plant disease management- legislation, eradication, physical methods, cultural method. Practical: study tour	7 2
JANUARY	THEORY- UNIT-1 FORECASTING- DEFINITION AND NEED UNIT-4 FORECASTING OF PLANT DISEASE FORECASTING SERVICE METHODS OF FORECASTING	2 4 2	THEORY- UNIT-1 PRE INFECTIONAL DEFENCE MECHANISM	4 4	Theory: methods of plant disease management- Biological, Chemical, Genetic resistance Practical- Visit to central IPM centre Burdwan, Department of plant protection- Visva- Bharati, BCKV	7 3

FEBRUARY	THEORY-4 METHODS OF FORECASTING UNIT 5: METHODS OF MANAGEMENT LEGISLATION PHYSICAL CONTROL PRACTICALS: IDENTIFICATION OF COMMON FUNGI AND DISEASES OF MAJOR CROPS	4 6	THEORY: UNIT 3: STRUCTURAL DEFENCE: DEVELOPMENT OF CORK LAYER DEPOSITION OF GUMS FORMATION OF PYLOSES, FORMATION OF ABSCISSION LAYER PRACTICAL:	8	Theory: Fungicides- Definition, Chemical classification into major groups	5
MARCH	THEORY- UNIT 5: CULTURAL CONTROL BIOLOGICAL CONTROL PRACTICAL FIELD SURVEY	3 5	THEORY UNIT-3 CELLULAR DEFENCE MECHANISM DEFENCE THROUGH HYPER SENSITIVITY PRACTICAL: ESTIMATE OF TOTAL PHENOL FROM HEALTHY PLANT	8	Theory: Systemic and non systemic fungicides, doses, methods and area of use	7
APRIL	THEORY UNIT -5 CHEMICAL CONTROL GENETIC RESISTANCE PRACTICAL STUDY TOUR	5 5	THEORY-4 ROLE OF PHYTOLEXINS IN DEFENCE MECHANISM PRACTICAL: 'STUDY OF STRUCTURAL DEFENCE IN PLANTS	6	B.Sc. Part-III Final Examination, B.U	

MAY	THEORY - UNIT 6: INTEGRATED PEST MANAGEMENT (I-PM) DEFINITION, GENESIS APPROPRIATE I PM METHODS IN RICE WHEAT POTATO FIELDS	5 4	THEORY UNIT 5: BASIC IDEA ABOUT TOXINS OF PATHOGENS PRACTICAL- STUDY OF STRUCTURAL DEFENCE IN PLANTS	4		
JUNE	THEORY - UNIT 6: INTEGRATED PEST MANAGEMENT (IPM) APPROPRIATE I PM METHODS IN MUSTARD SUGARCANE AND PULSES PRACTICAL- REAPT	6	THEORY-ALL Syllabus	6		



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**DEPARTMENT OF BOTANY
SURI VIDYASAGAR COLLEGE**

TEACHING PLAN OF DR. KALYAN KUMAR BHATTACHARYYA
(Associate Professor)

Botany (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-III (G)	No. of Lecture
Jul	Theory CCIA/GE-1: Biodiversity Unit 2: Algae- General characteristics Practical(Generic: Zoology Hons.) CCIA/GE-1: Biodiversity	2	Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 1. Study of meristems through permanent slides and photographs.	1	Theory Paper IV Group A: Plant Breeding and Tissue Culture 1. Introduction, selection and methods of hybridization. Practical Paper IV Group B: Economic Botany and Medicinal Plants Microbiology: Simple staining of Bacteria with methylene blue/Carbol Fuchsin – Curd	2
	2. Dissection, mounting, description, drawing, labeling and identification of the following genera: a. Pteridophytes: <i>Lycopodium</i> (stem), <i>Selaginella</i> (stem)	2				
Aug	Theory CCIA/GE-1: Biodiversity Unit 2: Algae- Ecology and distribution; Range of thallus organization and reproduction Practical(Generic: Zoology Hons.) CCIA/GE-1: Biodiversity	2	Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 2. Tissues (parenchyma, collenchyma and sclerenchyma); Macerated xylary elements, Phloem (Permanent slides, photographs)	2	Theory Paper IV Group A: Plant Breeding and Tissue Culture 1. Introduction, selection and methods of hybridization. Practical Paper IV Group B: Economic Botany and Medicinal Plants Microbiology: Simple staining of Bacteria with methylene blue/Carbol Fuchsin – Curd	2
	2. Dissection, mounting, description, drawing, labeling and identification of the following genus: a. Pteridophytes: <i>Pteris</i> (leaflet)	1				
Sept	Theory CCIA/GE-1: Biodiversity Unit 2: Algae- Classification of algae Practical(Generic: Zoology Hons.) CCIA/GE-1: Biodiversity	2	Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 7. Types of ovules: anatropous, orthotropous, circisotropous, amphitropous/ campylotropous – Through Permanent Slides/Photographs	2	Theory Paper IV Group A: Plant Breeding and Tissue Culture 2. General idea about tissue culture and its application. Practical Paper IV Group B: Economic Botany and Medicinal Plants Microbiology: Simple staining of Bacteria with methylene blue/Carbol Fuchsin – Curd	3
	2. Dissection, mounting, description, drawing, labeling and identification of the following genera: a. Pteridophytes: b. Gymnosperms: Cycas leaflet, <i>Pinus</i> needle.	2				
Oct	Theory CCIA/GE-1: Biodiversity Unit 2: Algae- Morphology and life-	2	Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 8. Female gametophyte;	2	Theory Paper IV Group A: Plant Breeding and Tissue Culture 2. General idea about tissue	3

	<p>cycles of the following (Chromosomes) (Autogametes)</p> <p>Practical(Generic: Zoology Hons.) CCIA/GE-1: Biodiversity 3. Identification of all above mentioned genera as illustrated in labar from permanent slides</p>	1	<p>Polygonum (monocot) type of Embryo and Development (Permanent slides/photographs)</p>		<p>culture and its Application</p>	
Nov	<p>Theory CCIA/GE-1: Biodiversity Unit 2. Algae- Morphology and life-cycles of the following: Chara, Fucus</p> <p>Practical(Generic: Zoology Hons.) CCIA/GE-1: Biodiversity Revise Practical Class</p>	2	<p>Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology Revise Practical Class</p>	1	<p>Theory Paper IV Group A: Plant Breeding and Tissue Culture 2. General idea about tissue culture and its application.</p>	3
Dec	<p>Theory CCIA/GE-3: Biodiversity Unit 2. Algae- Morphology and life-cycles of the following: Polysiphonia, Fucus etc. importance of algae</p> <p>Practical(Generic: Zoology Hons.) CCIA/GE-1: Biodiversity Revise Practical Class</p>	2	<p>Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology Revise Practical Class</p>	1	<p>Theory Paper IV Group A: Plant Breeding and Tissue Culture 3. Vegetative Plant Propagation</p> <p>Practical Field visit to familiarize students with ecology of different sites</p>	2
	Sem-II (G)	No. of Lecture	Sem-IV (G)	No. of Lecture		
Jan	<p>Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Malvaceae, Rubiaceae,</p>	2	<p>Practical (Generic: Zoology Hons.) CCID/GE-4Plant Physiology and Metabolism: 5. To study the effect of light intensity and bicarbonate concentration on O₂ evolution in photosynthesis.</p>	2	<p>Theory Paper IV Group A: Plant Breeding and Tissue Culture 3. Vegetative Plant Propagation</p>	2
Feb	<p>Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Caraculpinaceae</p>	2	<p>Practical (Generic: Zoology Hons.) CCID/GE-4Plant Physiology and Metabolism: 6. Comparison of the rate of respiration in any two parts of a plant.</p>	2	<p>Theory Paper IV Group A: Plant Breeding and Tissue Culture Doubt clearing class</p>	2
Mar	<p>Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some</p>	1	<p>Practical (Generic: Zoology Hons.) CCID/GE-4Plant Physiology and Metabolism; Revise Practical Class</p>	1	<p>Theory Paper IV Group A: Plant Breeding and Tissue Culture Doubt clearing class</p>	2

	species: <i>Ipomoea aquatica</i> stem					
Apr	Practical (Generic: Zoology Hons.) CC1B/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species. Phyllode of <i>Acacia acrostichoides</i>	2	Practical (Generic: Zoology Hons.) CC1D/GE-4 Plant Physiology and Metabolism Revise Practical Class	1	NIL	NIL
May	Practical (Generic: Zoology Hons.) CC1B/GE-2: Plant Ecology and Taxonomy Revise Practical Class	1	Practical (Generic: Zoology Hons.) CC1D/GE-4 Plant Physiology and Metabolism Revise Practical Class	1	NIL	NIL
June	Practical (Generic: Zoology Hons.) CC1B/GE-2: Plant Ecology and Taxonomy Revise Practical Class	1	Practical (Generic: Zoology Hons.) CC1D/GE-4 Plant Physiology and Metabolism Revise Practical Class	1	NIL	NIL

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TEACHING PLAN OF DR. HEMANTA SAHA

(Assistant Professor)

Botany (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lectures	Sem-III (G)	No. of Lectures	Part-III (G)	No. of Lectures
Jul	Practical (Generic: Zoology Hons.) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: a. Algae: <i>Nostoc</i> , <i>Chlorella</i> , <i>Chara</i> .	3	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 7: Embryo and endosperm-Endosperm types Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 3. Stem: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> ; Secondary: <i>Helianthus</i> (only Permanent slides)	2 2	Theory Paper IV Group A: Microbiology 1. General structure of Bacteria (morphology and ultrastructure).	3
Aug	Practical/Generic: Zoology Hons.) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: b. Fungi: <i>Aspergillus</i> , <i>Puccinia</i> (<i>Uredosorus</i> and <i>teliosorus</i>)	3	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 7: Embryo and endosperm-structure and functions Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 4. Root: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> ; Secondary: <i>Helianthus</i> (only Permanent slides).	2 2	Theory Paper IV Group A: Microbiology 2. Economic uses of Bacteria (useful and harmful Bacteria)	3
Sept	Practical/Generic: Zoology Hons.) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: c. Bryophytes: <i>Fucus</i> , <i>Marchantia</i> and <i>Fanaria</i>	3	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 7: Embryo and endosperm-Dicot and monocot embryo Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 5. Leaf: Dicot and Monocot leaf (only Permanent slides)	2 2	Theory Paper IV Group A: Microbiology 3. Antibiotics: Definition, sources and uses.	3
Oct	Practical/Generic: Zoology Hons.) CCIA/GE-1: Biodiversity 4. Microbiology: Sterilization techniques; Simple staining of Bacteria with methylene blue/Carbol Fuchsin - Card	2	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 7: Embryo and endosperm-Embryo-endosperm relationship. Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 6. Adaptive anatomy: Xerophyte (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> stem)	2 2	Theory Paper IV Group A: Microbiology 4. General structure of Viruses, structure of TMV and T ₂ phage and multiplication (Lytic cycle, mention lysogeny).	3
Nov	Practical/Generic: Zoology Hons.) CCIA/GE-1: Biodiversity Revised Practical class	1	Theory CCIC/GE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Generic: Zoology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 9. Pollination types and seed dispersal mechanisms (including appendages, soil, caruncle). (Photographs and specimens).	1 2	Theory Paper IV Group A: Microbiology 4. General structure of Viruses, structure of TMV and T ₂ phage and multiplication (Lytic cycle, mention lysogeny).	3
Dec	Practical/Generic: Zoology Hons.) CCIA/GE-1: Biodiversity Revised Practical	1	Theory CCIC/GE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Generic: Zoology	1	Theory Paper IV Group A: Microbiology 4. General structure of Viruses, structure of TMV	3

	class		Hons.) CCIB/GE-3: Plant Anatomy and Embryology Revised Practical class	1	and T ₂ phage and multiplication (Lytic cycle, mention lysogeny). Practical Field visit to familiarize students with ecology of different sites	1
	Sem-II (G)	No. of Lecture	Sem-IV (G)	No. of Lecture	Theory Paper IV Group A: Microbiology Doubt clearing class	2
Jan	Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Papilionaceae, Apocynaceae.	4	Theory CCIB/GE-4 Plant Physiology and Metabolism: Unit 1: Plant-water relations - Importance of water Practical (Bio General) CCIB/GE-4 Plant Physiology and Metabolism: 5. To study the effect of light intensity and bicarbonate concentration on O ₂ evolution in photosynthesis. Theory SEC2: Medicinal Botany Unit 2: Conservation of endangered and endemic medicinal plants. Definition: endemic and endangered medicinal plants	2 2 2		
Feb	Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Labiatae, Solanaceae.	4	Theory CCIB/GE-4 Plant Physiology and Metabolism: Unit 1: Plant-water relations - water potential and its components Practical (Bio General) CCIB/GE-4 Plant Physiology and Metabolism: 6. Comparison of the rate of respiration in any two parts of a plant. Theory SEC2: Medicinal Botany Unit 2: Conservation of endangered and endemic medicinal plants. Red list criteria; in-situ conservation: Biosphere reserves, sacred groves	2 2 2	Theory Paper IV Group A: Microbiology Doubt clearing class	2
Mar	Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 2. Mounting of a properly dried and pressed specimen of any wild plant with herbarium label (to be submitted in the record book).	2	Theory CCIB/GE-4 Plant Physiology and Metabolism: Unit 1: Plant-water relations - Transpiration and its significance; Practical (Bio General) CCIB/GE-4 Plant Physiology and Metabolism: Revise Practical Class Theory SEC2: Medicinal Botany Unit 2: Conservation of endangered and endemic medicinal plants. National Parks; ex-situ conservation: Botanic Gardens, Ethnomedicinal plant Gardens.	2 1 2	NIL	NIL
Apr	Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: Nerium leaf	2	Theory CCIB/GE-4 Plant Physiology and Metabolism: Unit 1: Plant-water relations - Root pressure and guttation Practical (Bio General) CCIB/GE-4 Plant Physiology and Metabolism:	2	NIL	NIL

			Revise Practical Class Theory SEC2: Medicinal Botany Unit 2: Conservation of endangered and endemic medicinal plants. Propagation of Medicinal Plants. Objectives of the nursery, its classification.	1 2		
May	3. Ecological adaptations of some species: Fanda root	2	Theory CCID/GE-4 Plant Physiology and Metabolism: Unit E: Plant growth regulators - Discovery and physiological roles of auxins, gibberellins Practical (Bio General) CCID/GE-4/Plant Physiology and Metabolism: Revise Practical Class Theory SEC2: Medicinal Botany Doubt clearing class	3 1 1	NIL	NIL
June	Practical (Generic: Zoology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy Revised Practical class	1	Theory CCID/GE-4 Plant Physiology and Metabolism: Unit E: Plant growth regulators - Discovery and physiological roles of cytokinins, ABA, ethylene. Practical (Bio General) CCID/GE-4/Plant Physiology and Metabolism: Revise Practical Class Theory SEC2: Medicinal Botany Doubt clearing class	3 1 1	NIL	NIL

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TEACHING PLAN OF DR. SANDIPAN CHATTERJEE

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Botany (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lectures	Sem-III (G)	No. of Lectures	Part-III (G)	No. of Lectures
Jul	Theory CCIA/GE-1: Biodiversity Unit 3. Fungi- Introduction- General characteristics, ecology and significance Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: a. Algae: Nostoc, Chlorella, Chara.	2	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 3: Secondary Growth- Vascular cambium – structure and function, seasonal activity. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 1. Study of meristems through permanent slides and photographs. Theory SECI: Biofertilizers Unit 1: General account about the microbes used as biofertilizer – Azotobium – isolation, identification, mass multiplication, carrier based inoculants, Actinorhizal symbiosis.	4	NIL	NIL
		3	2	4		
Aug	Theory CCIA/GE-1: Biodiversity Unit 3. Fungi- range of thallus organization, cell wall composition, nutrition, reproduction and classification; True Fungi- General characteristics, ecology and significance Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: b. Fungi: Ascomycota, Puccinia (Uredinaceous and teleomorphous)	2	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 3: Secondary Growth- Secondary growth in root and stem, Wood (heartwood and sapwood). Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 2. Tissues (parenchyma, collenchyma and sclerenchyma); Macerated xylary elements, Phloem (Permanent slides, photographs) Theory SECI: Biofertilizers Unit 2: Azospirillum: isolation and mass multiplication – carrier based inoculant, associative effect of different microorganisms.	4	NIL	NIL
		2	2	4		
Sept	Theory CCIA/GE-1: Biodiversity Unit 3: Fungi- life cycle of <i>Rhizopus</i> (Zygomycota) <i>Ascomycota</i> (Ascomyc ota) Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting,	2	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 4: Adaptive and protective system-Epidermis, cuticle, stomata; Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 3. Stem: Monocot: Zea mays; Dicot: Helianthus; Secondary: Helianthus (only Permanent slides) Theory SECI: Biofertilizers Unit 2. Azotobacter:	4	NIL	NIL
		3	2	4		

	description, drawing and classification of the following genera: c. Bryophytes Eicos. Marchantia and Funaria		classification, characteristics - response to Auxin, motility, maintenance and mass multiplication				
Oct	Theory CCIA/GE-1: Biodiversity Unit 3: Fungi- life cycle of <i>Puccinia</i> , <i>Agaricus</i> (Basidiomycota), Symbiotic Associations- Lichens. General account, reproduction and significance Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 4. Microbiology: Sterilization techniques; Simple staining of Bacteria with methylene blue/Carbol Fuchsin - Card	2	Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 4: Adaptive and protective system. General account of adaptations in xerophytes and hydrophytes. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 4. Root: Monocot: Zea mays; Dicot: <i>Helianthus</i> ; Secondary: <i>Helianthus</i> (only Permanent slides) Theory SECI: Biofertilizers Unit 3: Cyanobacteria (blue green algae), Azollana, Anabaena azollae association, nitrogen fixation, factors affecting growth, blue green algae and Azolla in rice cultivation.	4	2	NIL	NIL
Nov	Theory CCIA/GE-1: Biodiversity Unit 3: Fungi- Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity Revise Practical Class	3	Theory CCIC/GE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 5. Leaf: Dicot and Monocot leaf (only Permanent slides) Theory SECI: Biofertilizers Doubt clearing class	1	1	NIL	NIL
Dec	Theory CCIA/GE-1: Biodiversity Doubt clearing class Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity Revise Practical Class	1	Theory CCIC/GE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology Revise Practical Class Theory SECI: Biofertilizers Doubt clearing class	1	1	Practical Field visit to familiarize students with ecology of different sites	1
Jan	Sem-II (G) Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Malvaceae	No. of Lecture 2	Sem-IV (G) Theory CCID/GE-4 Plant Physiology and Metabolism; Unit 3: Translocation in phloem - Composition of phloem sap, girdling experiment Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4 Plant Physiology and Metabolism; 1. Determination of osmotic potential of plant cell sap by plasmolytic method.	No. of Lecture 3	2	NIL	NIL
Feb	Practical (Generic:		Theory			NIL	NIL

	Physiology & Microbiology (Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Rubiaceae.	2	CCID/GE-4Plant Physiology and Metabolism: Unit 3: Translocation in phloem - Pressure flow model; Phloem loading and unloading Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: 2. To study the effect of two environmental factors (light and wind) on transpiration by excised twig	3 2		
Mar	Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Caeciliaceae	2	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 6: Enzymes - Structure and properties. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: 3. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte.	2 2	NIL	NIL
Apr	Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: <i>Sponsoea aquatica</i> stem.	2	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 6: Enzymes - Mechanism of enzyme catalysis and enzyme inhibition. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: Revise Practical Class	2 1	NIL	NIL
May	Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: <i>Acetabularia formosa</i>	2	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 7: Nitrogen metabolism - Biological nitrogen fixation Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: Revise Practical Class	2 1	NIL	NIL
June	Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy Revise Practical Class	1	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 7: Nitrogen metabolism - Nitrate and ammonia assimilation. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: Revise Practical Class	2 1	NIL	NIL



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TEACHING PLAN OF DR. ANIRBAN PAUL
(Assistant Professor)
Botany (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lectures	Part-III (G)	No. of Lectures
Jul	<p>Theory CCIA/GE-1: Biodiversity Unit 7: Gymnosperms- General characteristics, classification. Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 2. Dissection, mounting, description, drawing, labeling and identification of the following genera: a. Pteridophytes: <i>Lycopodium</i> (stem), <i>Selaginella</i> (stem)</p>	2 2	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 6: Pollination and fertilization Pollination mechanisms and adaptations. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 6. Adaptive anatomy: Xerophyte (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> stem).</p>	4 2	NIL	NIL
Aug	<p>Theory CCIA/GE-1: Biodiversity Unit 7: Gymnosperms- morphology, anatomy and reproduction of Cycas Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 2. Dissection, mounting, description, drawing, labeling and identification of the following genus: a. Pteridophytes: <i>Pteris</i> (leaflet)</p>	2 1	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 6: Double fertilization; Seed-structure appendages and dispersal mechanisms. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 7. Types of ovules: anatropous, orthotropous, circinotropous, amphitropous/ campylotropous – Through Permanent Slides/Photographs</p>	4 2	NIL	NIL
Sept	<p>Theory CCIA/GE-1: Biodiversity Unit 7: Gymnosperms- morphology, anatomy and reproduction of Cycas Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity 2. Dissection, mounting, description, drawing, labeling and identification of the following genera: a. Pteridophytes: b. Gymnosperms: <i>Cycas</i> leaflet, <i>Pinus</i> needle.</p>	2 2	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 8: Apomixis and polyembryony- Definition, types Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology 8. Female gametophyte: <i>Polygonum</i> (monosporic) type of Embryo sac Development (Permanent slides/photographs).</p>	4 2	NIL	NIL
Oct	<p>Theory CCIA/GE-1: Biodiversity Unit 7: Gymnosperms- morphology, anatomy and reproduction of <i>Pinus</i>. Practical (Generic: Physiology & Microbiology Hons.)</p>	2	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 8: Apomixis and polyembryony- practical applications. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology</p>	4	NIL	NIL

	CCIA/GE-1: Biodiversity 3. Identification of all above mentioned genera in theoretical syllabus from permanent slides	1	9. Pollination types and seed dispersal mechanisms (including appendages, anat. caruncle) (Photographs and specimens)	2		
Nov	Theory CCIA/GE-1: Biodiversity morphology, anatomy and reproduction of <i>Pisum</i> . Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity Revise Practical Class	2 1	Theory CCIC/GE-3: Plant Anatomy and Embryology Doubt clearing class. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology Revise Practical Class	1 1	NIL	NIL
Dec	Theory CCIA/GE-1: Biodiversity Unit 7: Gymnosperms- Doubt clearing class Practical (Generic: Physiology & Microbiology Hons.) CCIA/GE-1: Biodiversity Revise Practical Class	1 1	Theory CCIC/GE-3: Plant Anatomy and Embryology Doubt clearing class. Practical (Generic: Physiology & Microbiology Hons.) CCIC/GE-3: Plant Anatomy and Embryology Revise Practical Class	1 1	Practical Field visit to familiarize students with ecology of different sites	1
	Sem-II (G)	No. of Lecture	Sem-IV (G)	No. of Lecture		
Jan	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 6 Plant taxonomy - Identification, Classification, Nomenclature. Practical/Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Papilionaceae, Apocynaceae,	2 2	Theory CCID/GE-4 Plant Physiology and Metabolism: Unit 2: Mineral nutrition - Essential elements, macro and micronutrients; Criteria of essentiality of elements; Role of essential elements; Transport of ions across cell membrane, active and passive transport, carriers, channels and pumps Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4 Plant Physiology and Metabolism: 4. Demonstration of Hill reaction.	4 2	NIL	NIL
Feb	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 7 Identification - Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and	4 2	Theory CCID/GE-4 Plant Physiology and Metabolism: Unit 2: Mineral nutrition - Essential elements, macro and micronutrients; Criteria of essentiality of elements; Role of essential elements; Transport of ions across cell membrane, active and passive transport, carriers, channels and pumps Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4 Plant Physiology and Metabolism: 5. To study the effect of light intensity and bicarbonate	4 2	NIL	NIL

	identification of the following families: Labiate, Solanaceae		concentration on O ₂ evolution in photosynthesis.			
Mar	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 8 Taxonomic evidences - Taxonomic evidences from palynology, cytology, phytochemistry and molecular data. Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 2. Mounting of a properly dried and pressed specimen of any wild plant with herbarium label (to be submitted in the record book).	3 2	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 4: Photosynthesis - Photosynthetic Pigments (Chl a, b, xanthophylls, carotene); Photosystem I and II, reaction center, antenna molecules; Electron transport and mechanism of ATP synthesis; C ₃ , C ₄ and CAM pathways of carbon fixation; Photorespiration. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: 6. Comparison of the rate of respiration in any two parts of a plant	6 2		NIL NIL
Apr	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 8 Taxonomic evidences - Taxonomic evidences from palynology, cytology, phytochemistry and molecular data. Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: Nerium leaf	3 1	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 4: Photosynthesis - Photosynthetic Pigments (Chl a, b, xanthophylls, carotene); Photosystem I and II, reaction center, antenna molecules; Electron transport and mechanism of ATP synthesis; C ₃ , C ₄ and CAM pathways of carbon fixation; Photorespiration. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: Revise Practical class	6 1		NIL NIL
May	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 9 Taxonomic hierarchy -Ranks, categories and taxonomic groups Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: Ficus root	2 1	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 9: Plant response to light and temperature - Photoperiodism (SDP, LDP, Day neutral plants); Phytochrome (discovery and structure), red and far red light responses on photomorphogenesis; Vernalization. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: Revise Practical class	3 1		NIL NIL
June	Theory CCIB/GE-2: Plant Ecology and Taxonomy Doubt clearing class Practical (Generic: Physiology & Microbiology Hons.) CCIB/GE-2: Plant Ecology and Taxonomy Revise Practical class	2 1	Theory CCID/GE-4Plant Physiology and Metabolism: Unit 9: Plant response to light and temperature - Photoperiodism (SDP, LDP, Day neutral plants); Phytochrome (discovery and structure), red and far red light responses on photomorphogenesis; Vernalization. Practical (Generic: Physiology & Microbiology Hons.) CCID/GE-4Plant Physiology and Metabolism: Revise Practical class	3 1		NIL NIL



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TEACHING PLAN OF SHAMIM ALAM
(Assistant Professor)
Botany (General) (2018-19) (July 2018 - June 2019)

Month	Sem-I (G)	No. of Lecture	Sem-III (G)	No. of Lecture	Part-III (G)	No. of Lecture
Jul	<p>Theory CCIA/GE-1: Biodiversity Unit 1: Microbes- Viruses - Discovery, general structure, replication (general account), DNA virus (T-phage) Practical(Bio General) CCIA/GE-1: Biodiversity 2. Dissection, mounting, description, drawing, labeling and identification of the following genera: a. Pteridophytes: <i>Lycopodium</i> (stem), <i>Selaginella</i> (stem) and <i>Pteris</i> (leaflet)</p>	3	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 5: Structural organization of flower Structure of anther and pollen Practical (Bio General) CCIC/GE-3: Plant Anatomy and Embryology 6. Adaptive anatomy: Xerophyte (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> stem). 7. Types of ovules: anatropous, orthotropous, circumtropous, amphitropous/ campylotropous - Through Permanent Slides/Photographs 8. Female gametophyte: Polygonum (monosporic) type of Embryo sac - Development (Permanent slides/photographs). 9. Pollination types and seed dispersal mechanisms (including appendages, anil, caruncle) (Photographs and specimens). Theory SEC1: Biofertilizers Unit 4: Mycorrhizal association, types of mycorrhizal association, taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield - colonization of VAM - isolation and inoculum production of VAM, and its influence on growth and yield of crop plants.</p>	2	<p>Theory Paper IV Group A: Economic Botany and Medicinal Plants 1. Economic importance of rice Practical Paper IV Group B: Economic Botany and Medicinal Plants Medicinal plants: Identification of medicinal plants, parts used and medicinal values of: <i>Adhatoda vasica</i></p>	2
	<p>Theory CCIA/GE-1: Biodiversity Unit 1: Lytic and lysogenic cycle, RNA virus (TMV); Practical(Bio General) CCIA/GE-1: Biodiversity 2. Dissection, mounting, description, drawing, labeling and identification of the following genera: b. Gymnosperms: <i>Cycas</i> leaflet, <i>Pinus</i> needle.</p>	2	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 5: Structure and types of ovules Practical (Bio General) CCIC/GE-3: Plant Anatomy and Embryology 6. Adaptive anatomy: Xerophyte (<i>Nerium</i> leaf); Hydrophyte (<i>Hydrilla</i> stem). Theory SEC1: Biofertilizers Unit 4: Mycorrhizal association, types of mycorrhizal association, taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield - colonization of VAM - isolation and inoculum production of VAM, and its influence on growth and yield of crop plants.</p>	4	<p>Theory Paper IV Group A: Economic Botany and Medicinal Plants 1. Economic importance of jute Practical Paper IV Group B: Economic Botany and Medicinal Plants Medicinal plants: Identification of medicinal plants, parts used and medicinal values of: <i>Andropogon paniculata</i></p>	2
Aug		3		2		2

Sept	<p>Theory CCIA/GE-1: Biodiversity Unit 1: Economic importance, Bacteria - Discovery, General characteristics and cell structure Practical(Bio General) CCIA/GE-1: Biodiversity 3. Identification of all above mentioned genus in theoretical syllabus from permanent slides</p>	2 2	<p>Theory CCIA/GE-3: Plant Anatomy and Embryology Unit 5: Types of embryo sacs Practical (Bio General) CCIA/GE-3: Plant Anatomy and Embryology 7. Types of ovules anisotropous, orthotropous, circinotropous, amphitropous/ campylotropous - Through Permanent Slides/Photographs Theory SECI: Biofertilizers Unit 5: Organic farming - Green manuring and organic fertilizers, Recycling of bio-degradable municipal, agricultural and Industrial wastes - biocompost making methods, types and method of vermicomposting - Field Application.</p>	2 2 3	<p>Theory Paper IV Group A: Economic Botany and Medicinal Plants 1. Economic importance of tea Practical Paper IV Group B: Economic Botany and Medicinal Plants Medicinal plants. Identification of medicinal plants, parts used and medicinal values of <i>Catharantus roseus</i></p>	1 1
Oct	<p>Theory CCIA/GE-1: Biodiversity Unit 1: Microbes- Viruses - Reproduction - vegetative, asexual and recombination (conjugation, transformation and transduction); Economic importance. Practical(Bio General) CCIA/GE-1: Biodiversity Revise practical class</p>	2 1	<p>Theory CCIA/GE-3: Plant Anatomy and Embryology Unit 5: Organization and ultrastructure of mature embryo sac. Practical (Bio General) CCIA/GE-3: Plant Anatomy and Embryology 8. Female gametophyte: Polygonum (monosporic) type of Embryo sac Development (Permanent slides/photographs). Theory SECI: Biofertilizers Unit 5: Organic farming - Green manuring and organic fertilizers, Recycling of bio-degradable municipal, agricultural and Industrial wastes - biocompost making methods, types and method of vermicomposting - field Application</p>	2 2 3	<p>Theory Paper IV Group A: Economic Botany and Medicinal Plants 2. Preliminary idea about the folk medicine, pharmacognosy, pharmacopoeia. Practical Paper IV Group B: Economic Botany and Medicinal Plants Medicinal plants Identification of medicinal plants, parts used and medicinal values of: <i>Ornithoglossum</i></p>	2 2
Nov	<p>Theory CCIA/GE-1: Biodiversity Unit 6: Pteridophytes- Genom? characteristics, classification, Early land plants (Rhynia). Classification (opto family), morphology, anatomy and reproduction of <i>Lycopodium</i>. Practical(Bio General) CCIA/GE-1: Biodiversity Revise practical class</p>	4 1	<p>Theory CCIA/GE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Bio General) CCIA/GE-3: Plant Anatomy and Embryology 9. Pollination types and seed dispersal mechanisms (including appendages, aril, caruncle) (Photographs and specimens). Theory SECI: Biofertilizers Doubt clearing class</p>	1 2 1	<p>Theory Paper IV Group A: Economic Botany and Medicinal Plants 2. Preliminary idea about the folk medicine, pharmacognosy, pharmacopoeia. Practical Paper IV Group B: Economic Botany and Medicinal Plants Medicinal plants: Identification of medicinal plants, parts used and medicinal values of: <i>Datura</i> sp.</p>	2 2
Dec	<p>Theory CCIA/GE-1: Biodiversity Unit 6: Pteridophytes- morphology, anatomy and reproduction of <i>Selaginella</i>, <i>Equisetum</i> and <i>Prens</i>.</p>	4	<p>Theory CCIA/GE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Bio General) CCIA/GE-3: Plant Anatomy and Embryology Revise practical class Theory SECI: Biofertilizers Doubt clearing class</p>	1 1 1 1	<p>Theory Paper IV Group A: Economic Botany and Medicinal Plants 2. Use of <i>Azadirachta indica</i>, <i>Andropogon paniculatus</i> Practical Paper IV Group B: Economic Botany and Medicinal Plants</p>	2

	(Developmental details not to be included) Heterospory, stelar evolution, economic importance of Pteridophytes. Practical (Bio General) CCIBAGE-1: Biodiversity Revise practical class	1			Medicinal plants Identification of medicinal plants, parts used and medicinal values of: <i>E. foveolata</i> Practical Field visit to familiarize students with ecology of different sites	1
	Sem-III (G)	No. of Lecture	Sem-IV (G)	No. of Lecture	Theory Paper IV Group A: Economic Botany and Medicinal Plants 2. Use of <i>Rauwolfia serpentina</i> , <i>Cinchona</i> sp. Practical Paper IV Group B: Economic Botany and Medicinal Plants Revise practical class	2
Jan	Theory CCIBAGE-2: Plant Ecology and Taxonomy Unit 5: Phytogeography - Principle biogeographical zones; Endemism Practical (Bio General) CCIBAGE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Papilionaceae.	4	Theory SEC2: Medicinal Botany Unit 1: History, Scope and Importance of Medicinal Plants, Indigenous Medicinal Sciences, Definition and Scope-Ayurvedic History, origin, panchamahabhutas, upadhatu and triksha concepts	5		2
		2				2
Feb	Theory CCIBAGE-2: Plant Ecology and Taxonomy Unit 10 Botanical nomenclature - Principles and rules (ICN), ranks and names, binomial system, typification, author citation, valid publication, rejection of names, principle of priority and its limitations. Practical (Bio General) CCIBAGE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Apocynaceae.	6	Theory SEC2: Medicinal Botany Unit 1: Rasayana, plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept: Unosoe- tabiya, tumors treatment/ therapy, polyherbal formulations.	5	Theory Paper IV Group A: Economic Botany and Medicinal Plants 2. Use of <i>Cuminum acuminatum</i> , <i>Datura</i> sp. Practical Paper IV Group B: Economic Botany and Medicinal Plants Revise practical class	2
		2				2
Mar	Theory CCIBAGE-2: Plant Ecology and Taxonomy Unit 11 Classification - Types of classification- artificial, natural and phylogenetic. Classification Bentham and Hooker (upto series), Takhtajan. Practical (Bio General) CCIBAGE-2: Plant Ecology and Taxonomy	6	Theory SEC2: Medicinal Botany Unit 3: Ethnobotany and Folk medicines. Definition; Ethnobotany in India; Methods to study ethnobotany; Applications of Ethnobotany.	5	Theory Paper IV Group A: Plant Breeding and Tissue Culture Doubt clearing class	2

	1. Study and identification of the following families: Labiate	2				
Apr	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 12 Biometric, numerical taxonomy and cladistics Character, variations, OTUs, character weighting and coding, cluster analysis, phenograms, cladograms Practical (Bio General) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Solanaceae	4	Theory SEC2: Medicinal Botany Unit 3: National interests, folk medicines of ethnobotany, ethnomedicine, ethnic communities of India Application of natural products to certain diseases: laundice, cardiac, infertility, diabetes, Blood pressure and skin diseases.	5	NIL	NIL
May	Theory CCIB/GE-2: Plant Ecology and Taxonomy Doubt clearing class Practical (Bio General)	2	Theory SEC2: Medicinal Botany Doubt clearing class	1	NIL	NIL
	CCIB/GE-2: Plant Ecology and Taxonomy 2. Mounting of a properly dried and pressed specimen of any wild plant with herbarium label (to be submitted in the record book).	2				
June	Theory CCIB/GE-2: Plant Ecology and Taxonomy Doubt clearing class Practical (Bio General)	2	Theory SEC2: Medicinal Botany Doubt clearing class	1	NIL	NIL
	CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: Nerium leaf and Fando root	2				

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TEACHING PLAN OF MS. MOUSUMI MUKHERJEE
(Part-Time Teacher)
Botany (General) (2018-19) (July 2018 – June 2019)

Month	Sem-I (G)	No. of Lectures	Sem-III (G)	No. of Lectures	Part-III (G)	No. of Lectures
Jul	<p>Theory CCIA/GE-1: Biodiversity Unit 4 Introduction to Archegoniate- Unifying features of archegoniate. Transition to land habit, Alternation of generations.</p> <p>Practical/Bio General) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: a. Algae: <i>Noctua</i>, <i>Oedogonium</i>, <i>Chara</i>.</p>	2 3	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 1: Meristematic and permanent tissues Root and shoot apical meristems; Simple and complex tissues. Practical (Bio General) CCIC/GE-3: Plant Anatomy and Embryology 1. Study of meristems through permanent slides and photographs.</p>	4 2	NIL	NIL
Aug	<p>Theory CCIA/GE-1: Biodiversity Unit 5: Bryophytes- General characteristics, adaptations to land habit, Practical(Bio General) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: b. Fungi: <i>Ascochola</i>, <i>Puccinia</i> (<i>Uredosorus</i> and <i>teliosorus</i>).</p>	2 3	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 1: Meristematic and permanent tissues Root and shoot apical meristems; Simple and complex tissues. Practical (Bio General) CCIC/GE-3: Plant Anatomy and Embryology 2. Tissues (parenchyma, collenchyma and sclerenchyma); Macerated xylary elements, Phloem (Permanent slides, photographs)</p>	4 2	NIL	NIL
Sept	<p>Theory CCIA/GE-1: Biodiversity Unit 5: Bryophytes- Classification, Range of thallus organization. Practical(Bio General) CCIA/GE-1: Biodiversity 1. Dissection (where necessary), mounting, description, drawing and identification of the following genera: c. Bryophytes: <i>Riccia</i>, <i>Marchantia</i> and <i>Funaria</i>.</p>	2 3	<p>Theory CCIC/GE-3: Plant Anatomy and Embryology Unit 2: Organs (4 Lectures) Structure of dicot and monocot root stem and leaf Practical (Bio General) CCIC/GE-3: Plant Anatomy and Embryology 3. Stem: Monocot: <i>Zea mays</i>; Dicot: <i>Helianthus</i>; Secondary: <i>Helianthus</i> (only Permanent slides).</p>	4 2	NIL	NIL
Oct	<p>Theory CCIA/GE-1: Biodiversity</p>		<p>Theory CCIC/GE-3: Plant Anatomy and Embryology</p>		NIL	NIL

	Unit 5: Bryophytes- Classification (up to family), morphology, anatomy and reproduction of <i>Marsilea</i> Practical(Bio General) CCIA/GE-1: Biodiversity 4 Microbiology: Sterilization techniques; Simple staining of <i>Bacillus</i> with methylene blue/Carbol Fuchsin - (Curl)	3 2	Doubt clearing class Practical (Bio General) CCIOGE-3: Plant Anatomy and Embryology 4. Root: Monocot: <i>Zea mays</i> ; Dicot: <i>Helianthus</i> . Secondary; <i>Helianthus</i> (only Permanent slides)	2 2		
Nov	Theory CCIA/GE-1: Biodiversity Unit 5: Bryophytes- morphology, anatomy and reproduction of <i>Fucus</i> . Practical(Bio General) CCIA/GE-1: Biodiversity Revise Practical Class	2 1	Theory CCIOGE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Bio General) CCIOGE-3: Plant Anatomy and Embryology 5. Leaf: Dicot and Monocot leaf (only Permanent slides)	2 2	NIL	NIL
Dec	Theory CCIA/GE-1: Biodiversity Unit 5: Bryophytes- Ecology and economic importance of bryophytes with special mention of Sphagnum. Practical(Bio General) CCIA/GE-1: Biodiversity Revise Practical Class	2 1	Theory CCIOGE-3: Plant Anatomy and Embryology Doubt clearing class Practical (Bio General) CCIOGE-3: Plant Anatomy and Embryology Revise Practical Class	2 1	Practical Field visit to familiarize students with ecology of different sites	1
Jan	Sem-II (G)	No. of Lecture	Sem-IV (G)	No. of Lecture	NIL	NIL
	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 1: Introduction - Plant Ecology and Taxonomy Practical (Bio General) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Malvaceae	2 2	Theory CCID/GE-4 Plant Physiology and Metabolism: Unit 5: Respiration - Glycolysis, anaerobic respiration Practical (General- Zoology Honors & Bio General) CCID/GE-4 Plant Physiology and Metabolism; 1. Determination of osmotic potential of plant cell sap by plasmolytic method.	2 2		
Feb	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 2: Ecological factors - Soil: Origin, formation,	5	Theory CCID/GE-4 Plant Physiology and Metabolism: Unit 5: Respiration - TCA cycle; Oxidative phosphorylation Practical (General- Zoology Honors & Bio General)	2	NIL	NIL

	composition, and profile. Water: Status of water in the environment. Practical (Bio General) CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Rubiaceae	2	CCIB/GE-4 Plant Physiology and Metabolism: 2. To study the effect of two environmental factors (light and wind) on transpiration by excised twig	2		
Mar	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 2: Ecological factors - precipitation types, Light and temperature Variation: Optimal and limiting factors, Adaptation of hydrophytes, halophytes and xerophytes. CCIB/GE-2: Plant Ecology and Taxonomy 1. Study and identification of the following families: Caesalpinaceae	5	Theory CCIB/GE-4 Plant Physiology and Metabolism: Unit 5: Respiration - Glyoxylate pathway Practical (Generic- Zoology Hons. & Bio General) CCIB/GE-4 Plant Physiology and Metabolism; 3. Calculation of stomatal index and stomatal frequency of a mesophyte and a xerophyte.	1	NIL	NIL
	2					
Apr	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 3: Plant communities Characteristics; Ecotone and edge effect; Succession; Processes and types. Cycling: Cycling of carbon, nitrogen and Phosphorous Practical (Bio General) CCIB/GE-2: Plant Ecology and Taxonomy 3. Ecological adaptations of some species: Ipomoea aquatica stem	6	Theory CCIB/GE-4 Plant Physiology and Metabolism: Doubt clearing class Practical (Generic- Zoology Hons. & Bio General) CCIB/GE-4 Plant Physiology and Metabolism: 4. Demonstration of Hill reaction.	2	NIL	NIL
	2					
May	Theory CCIB/GE-2: Plant Ecology and Taxonomy Unit 4: Ecosystems - Structure, energy flow, trophic organization; Food chains and food webs, Ecological pyramids production and productivity; Biogeochemical cycling: Cycling of carbon, nitrogen and Phosphorous Practical (Bio General) CCIB/GE-2: Plant	4	Theory CCIB/GE-4 Plant Physiology and Metabolism: Doubt clearing class Practical (Generic- Zoology Hons. & Bio General) CCIB/GE-4 Plant Physiology and Metabolism: Revise practical class	1	NIL	NIL

	Ecology and Taxonomy 3. Ecological adaptations of some species. Phytosociology autecology	2			
June	Theory CCIB/GE-2: Plant Ecology and Taxonomy. Unit 4: Ecosystem - Structure, energy flow, trophic organization, Food chains and food webs, Ecological pyramids production and productivity; Biogeochemical cycling; Cycling of carbon, nitrogen and Phosphorous Practical (Bio General) CCIB/GE-2: Plant Ecology and Taxonomy Revise practical class	4	Theory CCIB/GE-4Plant Physiology and Metabolism; Doubt clearing class Practical (General- Zoology Honors & Bio General) CCIB/GE-4Plant Physiology and Metabolism; Revise practical class	1	NIL
		1			NIL

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SURI VIDYASAGAR COLLEGE

DEPARTMENT OF ARABIC

Teaching plan of Dr. MOHD MOATASIM

B.A. Arabic (Hons. & Genl.) session July 2018- June 2019

Sem-I (Hons. & Genl)	No. of Lecture	Sem-III (Hons. & Genl)	No. of Lecture	PART III (Hons. & Genl)	No. of Lecture
CC1: Hist. of Arabic Lit.(from Pre-Islamic to Umayyad period), Gram. & Trans	Total Classes=30	CC5: Poetry (Pre-Islamic, Islamic & Umayyad period)	Total Classes=20	Paper V: Poetry (Modern)	Total Classes=30
Part B: Grammar & Translation		5: Selected Verses from Poetry of Al-Farazdaq	10	Unit-I	10
(a) Words; Noun, Verb & Particles	2	6: Selected Verses from Poetry of Jarir	10	(3) إلى الأستاذ محمد عبد: حافظ إبراهيم 'Ilā al-Ustād Muḥammad 'Abduh: Hafiz Ibrahim	
(b) Number: Singular, Dual & Plural	4	CC-6: History of Arabic literature (Spain) gram. & trans.	Total Classes=30	Unit-II	
(c) Definite & indefinite Noun	1	Unit: B Grammar and Translation of the following topic:		(3) حضن الأم: رشيد سليم الخوري Ḥiḍn al-Umm: Rashid Salim al-Khoury (Lap of Mother: Rashid Salim al-Khoury)	10
(d) Gender: Masculine & Feminine	1	1) Complex Verbs (Mazid Verbs) and its Stem-Forms	4	(4) صلوات في هيكال الحب: أبو القاسم الشلبى Ṣalawāt fī Ḥaikal al-Ḥubb: Abul Qāsim al-Shābi	10
(e) Demonstrative Pronoun	2	2) Features of Stem-Forms: IF'āl, Taf'īl, Ith'āl, Istif'āl, Muḍ'ala	5	Paper VI PROSE (Modern)	Total Classes=22
(f) Relative Pronoun	2	3) Semi-Defective Verbs: (Af'āl al-Muqābala wa al-Rij'ā' wa al-Shurū' (Approximative, Hope and Inchoative verbs):	6	Unit-I	(11)
(g) Personal Pronouns and its Kinds	2	4) Defective Verbs	3	(3) من ابن أبي: محمد الصيب عطى التونسي Ḥanān u Ab: Muḥammad al-Ḥabīb Tunāsi (Affection of a father)	06
(h) Propositions	2	5) Plural and its kinds	5	(4) تجارة رابحة: طه حسين Tijārah Rābiḥah: Taha Hussein (Profitable business)	05
(i) Interrogative words	2	6) Five objects	7	Unit-II)	(11)
(j) Kinds of Verb: Past, Present, Imperative and Negative imperative Verb	4	SEC1: Translation & Composition	Total Classes=40	(2) حادثه: نجيب محفوظ Ḥāditha (An Accident: Naguib Mahfouz)	05
(k) Simple Verbs (Mujarrad Verbs)	2	Unit 1: Translation		(4) أبو أيوب الأنصاري: عبد الرحمن رافت الباشا Abū Ayyūb al-Anṣārī: Abd al-Rahman Rafat Pasha	06
(l) Possessive compound (Genitive Construction)	2	1) Kinds of Sentences: Nominal, Verbal, Conditional, Structural, Subject and Predicate. Places where Subject comes first, Places where Predicate comes first	30	Paper VII	Total Classes=25
(m) Noun and adjective	2	2) Exercises of letter writing on different topics and Application writing in Arabic	10	Unit-I:	15
(n) Subject and Predicate (Nominative Sentences)	2	CC-1C: Prose (Islamic, Medieval & Modern Period)	Total Classes=12	(2) Vocabularies	
CC-2: Arabic Prose (Islamic & Medieval) (Part-A)	Total Classes=10	5. Ahmad Amin: Al-din al-Sina'i (Artificial Religion)	12	Unit II:	10
d) Khutba al-Nabi (PBUH) fi Ḥajja al-Wadā'	10	SEC1: Grammar, translation & letter writing	Total Classes=40	(2) علم العروض Ilm al-Arūd	
(The Last Sermon of the Prophet PBUH)		a) Nominal Sentences, Verbal Sentences, Conditional Sentences, the particles that resembles verbs, Defective Verbs, ḥāl and Dhū al-Ḥāl (Adjective of Condition), Adverb of Clarification	25	Paper VIII	Total Classes=70
CC-1A: A. Hist. of Arabic Literature (from Pre-Islamic to Umayyad Period 500- 750 A. D.), Gram. & Translation	Total Classes=30	b) letter writing (Official, Educational, Personal and etc.	15	(2) Grammar	20
C: Grammar & Translation				(3) Translation	30
(a) Words; Noun, Verb & Particles	3			(4) Essay in Arabic:	20
(b) Definite & indefinite Article	2				
(c) Gender; Masculine & Feminine	1				
(d) Number: Singular, Dual & Plural	4				
(e) Kinds of Verb; Past, Present, Imperative and Negative imperative Verb	9				
(f) Simple Verbs (Mujarrad Verbs)	2				
(g) Pronouns and its Kinds	4				
(h) Possessive compound (Genitive Construction)	2				
(i) Subject and Predicate (Nominative Sentences)	3				

M. Moatasim

Sem-II (Hons. & Genl)		Sem-IV (Hons. & Genl)		PART III (Hons. & Genl)	No. of Lecture
CC-3: History of Arabic Literature (Abbasid Period & Indian Arabic Lit.), Gram. & Translation	Total Classes=30	CC-8: Poetry (Abbasid & Fatimid)	Total Classes=15		
B. Grammar & Translation		a) Abul A'is Ma'rri: Ala Fi Sabil al-Majd Ma' Ana Fa'il	15		
(a) Intransitive and Transitive Verbs	5	CC-9: History of Arabic Literature (North & South America/Adabul Mahjar) & Grammar + Translation	Total Classes=30		
(b) The Particles which introduce the verb in jussive case	2	Z: Grammar based Translation on the prescribed items.			
(c) The Particles which introduce the verb in accusative case	2	c) <u>Ha</u> and <u>Dhu</u> al- <u>Ha</u> (Adjective of Condition)	4		
(d) Infinitive (Gerund) and derivative nouns: Active Participle, Passive Participle, Locative noun, utilitarian noun, comparative and superlative, hyperbolic participle and resembling participle.	13	d) Adverb of Clarification	4		
(e) Case: Nominative, Accusative & Genitive	1	e) Declinable and indeclinable	4		
(f) The particles that resembles verbs	3	f) Diptotes	8		
(g) Defective verbs	4	g) Conditional particles	6		
		h) Categorical negative <u>la</u>	4		
CC-4: Arabic Prose (Islamic & Medieval) (Part-B)	Total Classes=20	CC-10: Development of Modern Arabic Novel, short-story, Drama & Formation of Literary Groups	Total Classes=12		
d) <u>Baina Qadin Waqur wa Dhubbin Jasur</u> (Between a dignified judge and daring fly)	10	C: Essay Writing in Educational, Social, Political & Scientific aspects	12		
e) <u>Ash'ab wa al-Bakhil</u> (Ash'ab and the miser)	10	SEC2: Translation & Interpretation (from English into Arabic & vice versa: from Newspapers) & Communicative Skill:	Total Classes=40		
		1) Translation from Arabic and English Newspaper: Scientific, Political, Social and economic	25		
CC-1B: History of Arabic Literature (Abbasid Period, 750-1258 A.D.), Grammar & Translation	Total Classes=30	2) Conversation and speech in Arabic language on any scientific topic	15		
B. Grammar & Translation		CC1D: Poetry: (Islamic, medieval, & Modern Period)	Total Classes=20		
(a) The Particles which introduce the verb in jussive case	3	1) Hafiz Ibrahim: Condition of Arabic Language	10		
(b) The Particles which introduce the verb in accusative case	3	6: Abul A'is Ma'rri: Ala Fi Sabil al-Majd	10		
(c) Demonstrative Pronoun	4	SEC-2 (G): Grammar, translation & letter writing	Total Classes=40		
(d) Relative Pronoun	4	a)			
(e) Active Participle, Passive Participle, Noun and adjective	6	1) Exclusion	7		
(f) Case: Nominative, Accusative & Genitive	2	2) Categorical negative <u>la</u>	5		
(g) Prepositions	2	3) Features of Stem Forms: <u>if'al</u> , <u>Taf'il</u> , <u>istif'al</u> , <u>Muf'alala</u> & <u>ifti'ala</u>	13		
(h) Interrogative particles	3	b) Essay Writing: Visit of the popular city, popular Library, and zoo and article on personality whom you like very much	15		
(i) Conditional particles	3				

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DEPARTMENT OF ARABIC

**TEACHING PLAN OF SYED BASIR AL HILAL
ARABIC (Honours) (2018-19) (July 2018 – June 2019)**

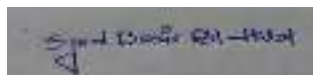
Month	Sem-I (H)	No. of Lecture	Sem-III (H)	No. of Lecture	Part- 3 (H)	No. of Lecture
Jul	CC-1: History of Arabic literature (from pre Islamic to Islamic period) gram. & trans. Unit-A.2 Al-Quran, Al-Hadith	3	CC-5: POETRY (Pre-Islamic, Islamiv & Umaiya Period) Unit 1: Muallaqa Imrul Qayes	3	Paper- 5: POETRY (Modern Period Unit -1) Sadal Harb	2
	CC-2: Arabic Prose (Islamic & medieval) Unit- 2 Sura Bani Israil	3	CC-6: History of Arabic literature (Spain) gram. & trans. Unit: A(a) Andalusia Period	3	Paper-6 : PROSE (Modern Period Unit -1) Manhajul Ambiya	2
	GE-1: History of Arabic literature (from pre Islamic to Islamic period) Unit- B: Islamic Period & Umayyad Period. 1) Al-Quran	2	GE-3: Prose (Islamic, Medieval & Modern Period) Unit- 3: Salman Al-farsi	2	Paper-7 : (History Of Islam,Rhetoric, Prosody & Philology) Tashbih & Its Division, Majaz Mursal & Aqli	2
					Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Bahrain	2
Aug	CC-1: History of Arabic literature (from pre Islamic to Islamic period) Gram. & trans. Unit-A.2 Al-Khansa, Hasaan Bin Thabit	3	CC-5: POETRY (Pre-Islamic, Islamiv & Umaiya Period) Unit 1: Muallaqa Imrul Qayes	3	Paper- 5: POETRY (Modern Period Unit -1) Al-hamziyatun Nababiyah	2
	CC-2: Arabic Prose (Islamic & medieval) Unit- 2 Sura Bani Israil	3	CC-6: History of Arabic literature (Spain) gram. & trans. Unit: A(a) Andalusia Period	3	Paper-6 : PROSE (Modern Period Unit -1) Manhajul Ambiya	2
	GE-1: History of Arabic literature (from pre Islamic to Islamic period) Unit- B: Islamic Period & Umayyad Period. 2) Al-Hadith	2	GE-3: Prose(Islamic, Medieval & Modern Period) Unit- 3: Salman Al-farsi	2	Paper-7 : (History Of Islam,Rhetoric, Prosody & Philology) Ista'arah & Its Division, Kinayah	2
					Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Saudi Arabia	2
Sept	CC-1: History of Arabic literature (from pre Islamic to Islamic period) Gram. & trans. Unit-A.2 Umar Bin Abi Rabiiah, Al-Akhtal	3	CC-5: POETRY (Pre-Islamic, Islamiv & Umaiya Period) Unit 1: Muallaqa Labid Bin Rabeya	3	Paper- 5: POETRY (Modern Period Unit -1) Al-hamziyatun Nababiyah	2
	CC-2: Arabic Prose (Islamic & medieval) Unit- 5	3	CC-6: History of Arabic literature (Spain) gram. & trans. Unit: A(b) Ibne Abde Rabbihi, Ibne Khalidun	3	Paper-6 : PROSE (Modern Period Unit -1) Manhajul Ambiya	2
			GE-3: Prose(Islamic, Medieval			

	<p>Salman Al-farsi</p> <p>GE-1: History of Arabic literature (from pre Islamic to Islamic period) Unit- B: Islamic Period & Umayyad Period. 3) Al-Khansa</p>	2	<p>& Modern Period) Unit- 4: Ashab-e-fil</p>	2	<p>Paper-7 : (History Of Islam,Rhetoric, Prosody & Philology) Jinas & Tawriyah</p> <p>Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Yemen</p>	2 2
Oct	<p>CC-1: History of Arabic literature (from pre Islamic to Islamic period) Gram. & trans. Unit-A.2 Al-Farazdaq</p> <p>CC-2: Arabic Prose (Islamic & medieval) Unit- 5 Salman Al-farsi</p>	2	<p>CC-5: POETRY (Pre-Islamic, Islamiv & Umaiya Period) Unit 1: Muallaqa Labid Bin Rabeya</p> <p>CC-6: (History of Arabic literature (Spain) gram. & trans) Unit: A(b) Ibne Abde Rabbihi, Ibne Khaldun</p>	3 3	<p>Paper- 5: POETRY (Modern Period Unit -1) Al-hamziyatun Nababiyah</p> <p>Paper-6 : PROSE (Modern Period Unit -1) Ila Waladi</p> <p>Paper-7: (History Of Islam,Rhetoric, Prosody & Philology) It nab, Eijaz</p>	3 3 2
	<p>GE-1: History of Arabic literature (from pre Islamic to Islamic period) Unit- B: (Islamic Period & Umayyad Period) 4) Hassan Bin Thabit</p>	2	<p>GE-3: Prose(Islamic, Medieval & Modern Period) Unit- 4: Ashab-e-fil</p>	2	<p>Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Syria</p>	2
	<p>CC-1: History of Arabic literature (From Pre Islamic To Islamic Period) Gram. & trans. Unit-A.2 Jarir</p> <p>CC-2: Arabic Prose (Islamic & medieval) Unit- 5 Salman Al-farsi</p>	2	<p>CC-5: POETRY (Pre-Islamic, Islamiv & Umaiya Period) Unit 1: Muallaqa Imrul Qayes Special class</p> <p>CC-6: History of Arabic literature (Spain) gram. & trans. Unit: A(b) Ibnul Khatib</p>	3 2	<p>Paper- 5: POETRY (Modern Period Unit -1) Aina Aiyamu Lazzati Washababi</p> <p>Paper-6 : PROSE (Modern Period Unit -2) Addafin Assagir</p> <p>Paper-7: (History Of Islam,Rhetoric, Prosody & Philology) Khilafatu Bani Abbas</p>	2 4 2
	<p>GE-1: History of Arabic literature (From Pre Islamic To Islamic Period) Unit- B: Islamic Period & Umayyad Period. 5) Al- Akhtal</p>	2	<p>GE-3: Prose(Islamic, Medieval & Modern Period) Unit- 3: Salman Al-farsi Special class</p>	2	<p>Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Iraq</p>	2
Dec	<p>CC-1: History of Arabic literature (From Pre Islamic To Islamic Period) Gram. & trans. Unit-A.2</p>	2	<p>CC-5: POETRY (Pre-Islamic, Islamiv & Umaiya Period) Unit 1: Muallaqa Labid Bin Rabeya Special class</p>	3	<p>Paper- 5: POETRY (Modern Period Unit -1) Aina Aiyamu Lazzati Washababi</p>	1

	<p>Special Class</p> <p>CC-2: Arabic Prose (Islamic & medieval) Unit- 5 Salman Al-farsi</p> <p>GE-1: History of Arabic literature (From Pre Islamic To Islamic Period) Unit- B: Islamic Period & Umayyad Period. 6) Al-Farazdaq, Jarir</p>	2	<p>CC-6: History of Arabic literature (Spain) gram. & trans. Unit: A(c) Ibne Zaidun, Ibne Hani</p> <p>GE-3: Prose (Islamic, Medieval & Modern Period) Unit- 4: Ashab-e-fil Special class</p>	3	<p>Paper-6 : PROSE (Modern Period Unit -2) Addafin Assagir</p> <p>Paper-7: (History Of Islam,Rhetoric, Prosody & Philology) Harun Rashid</p>	1
	<p>Sem-II (H)</p> <p>CC-3: History of Arabic literature (Abbasid period & Indian Arabic lit.) Gram. & trans. Unit- A.c Indian Arabic Scholars Gulam Ali Azad</p> <p>CC-4: Arabic Prose (Islamic & medieval) Unit- 1 Khutbatu Umar fil hikam</p> <p>GE-2: History of Arabic literature (Abbasid period) gram. & trans. Unit- A(2): Abbasid Period(poetry) 1) Bashshar Bin Burd</p>	2	<p>Sem-IV (H)</p> <p>CC-8: POETRY (Abbasid & Fatimid) Unit 1: Ibne Rumi</p> <p>CC-9: History of Arabic literature (North & South America/Adabul Mahjar) Gram. And Trans. Unit: 1(a) Rabita Qalamiya, Jibran Khalil Jibran</p> <p>GE-4: Poetry (Islamic, Medieval & Modern Period) Unit-2: Walahu Fil Waz</p>	2	<p>Paper- 5: POETRY (Modern Period Unit -1) Aina Aiyamu Lazzati Washababi</p> <p>Paper-6 : PROSE (Modern Period Unit -2) Daun Nisyan</p> <p>Paper-7: (History Of Islam,Rhetoric, Prosody & Philology) Al Mamun</p> <p>Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Oman, Bahrain</p>	2
Jan		3		3		2
	<p>CC-3: History of Arabic Literature (Abbasid period & Indian Arabic lit.) Gram. & trans. Unit-1: Islamic Period & Umayyad Period Shah Waliullah</p> <p>CC-4: Arabic Prose (Islamic & medieval) Unit- 2 Muamiratu Quraish</p> <p>GE-2: History of Arabic literature (Abbasid)</p>	2	<p>CC-8: POETRY (Abbasid & Fatimid) Unit 1: Ibnu Farid</p> <p>CC-9: History of Arabic literature (North & South America/Adabul Mahjar) Gram. And Trans. Unit: 1(a) Mikhail Nuaimah & Iliya Abu Madi</p> <p>GE-4: Poetry (Islamic, Medieval & Modern Period) Unit-2: Walahu Fil Waz</p>	2	<p>Paper- 5: POETRY (Modern Period Unit -1) Special class</p> <p>Paper-6 : PROSE (Modern Period Unit -2) Daun Nisyan</p> <p>Paper-7: (History Of Islam,Rhetoric, Prosody & Philology) Annuhdatul Ilmiyah</p> <p>Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Qatar, Jordan</p>	2
Feb		3		2		2

	<p>period) gram. & trans</p> <p>Unit- A(2): Abbasid Period(poetry)</p> <p>2) Abu Nuwas</p>					
Mar	<p>CC-3: History of Arabic literature (Abbasid period & Indian Arabic lit.) Gram. & trans.</p> <p>Unit- A.c Indian Arabic Scholars Abdul Hai Husaini</p> <p>CC-4: Arabic Prose (Islamic & medieval) Unit- 1 Special class</p> <p>GE-2: History of Arabic literature (Abbasid period) gram. & trans</p> <p>Unit- A(2): Abbasid Period(poetry)</p> <p>1) Abul Atahiya</p>	<p>3</p> <p>2</p> <p>2</p>	<p>CC-8: POETRY (Abbasid & Fatimid) Unit 1: Ibnu Farid</p> <p>CC-9: History of Arabic literature (North & South America/Adabul Mahjar) Gram. And Trans. Unit: 1(b) Al- asabatul Undulisiya , Al- khouri</p> <p>GE-4: Poetry (Islamic, Medieval & Modern Period) Unit-2: Ala Fi Sabilil Majd</p>	<p>2</p> <p>3</p> <p>2</p>	<p>Paper- 5: POETRY (Modern Period Unit -1) Special Class</p> <p>Paper-6 : PROSE (Modern Period Unit -2) Baina Ams Wal Yaom</p> <p>Paper-7: (History Of Islam,Rhetoric, Prosody & Philology) Tarajimul Ulum Ilal Arabiyah</p> <p>Paper- 8 :(Outline History Of Modern Arab World) Unit 1: Kwait, UAE</p>	<p>2</p> <p>2</p> <p>2</p> <p>2</p>
Apr	<p>CC-3: History of Arabic literature (Abbasid period & Indian Arabic lit.) Gram. & trans.</p> <p>Unit- A.c Indian Arabic Scholars Abul Hasan An- nadvi</p> <p>CC-4: Arabic Prose (Islamic & medieval) Unit- 2 Special class</p> <p>GE-2: History of Arabic literature (Abbasid period) gram. & trans</p> <p>Unit- A(2): Abbasid Period(poetry)</p> <p>4) Abu Tammam</p>	<p>3</p> <p>2</p> <p>2</p>	<p>CC-8: POETRY (Abbasid & Fatimid) (North & South America/Adabul Mahjar) Gram. And Trans. Unit 1: Ibnu Farid</p> <p>CC-9: History of Arabic literature Unit: 1(b) Al- asabatul Undulisiya , Fauzi Maluf</p> <p>GE-4: Poetry (Islamic, Medieval & Modern Period) Unit-2: Ala Fi Sabilil Majd</p>	<p>2</p> <p>3</p>		
May	<p>CC-3: History of Arabic literature (Abbasid period & Indian Arabic lit.) Gram. & trans.</p> <p>Unit- A.c</p>		<p>CC-8: POETRY (Abbasid & Fatimid) Unit 1: Ibnul Farid Special class</p> <p>CC-9: History of Arabic literature (North & South</p>	<p>2</p>		

	<p>Indian Arabic Scholars Nawab Siddiq Hasan</p> <p>GE-2: History of Arabic literature(Abbasid period) gram. & trans Unit- A(2): Abbasid Period(poetry) 5) Al-Mutanabbi</p>	3	<p>America/Adabul Mahjar) Gram. And Trans. Unit: 1(b) Special class</p> <p>GE-4: Poetry (Islamic, Medieval & Modern Period) Special class</p>	3		
June	<p>CC-3: History of Arabic literature (Abbasid period & Indian Arabic lit.) Gram. & trans.</p> <p>Unit- A.c Indian Arabic Scholars Al-Masumi</p> <p>GE-2: History of Arabic literature(Abbasid period) gram. & trans Unit- A(2): Abbasid Period(poetry) 6) Al-Marri</p>	3	<p>CC-8: POETRY (Abbasid & Fatimid) Unit 1: Ibnur Rumi Special class</p> <p>CC-9: History of Arabic literature (North & South America/Adabul Mahjar) Gram. And Trans. Unit: 1(a) Special class</p> <p>GE-4: Poetry (Islamic, Medieval & Modern Period) Special class</p>	2		



Department of Arabic,
Suri Vidyasagar College

DEPARTMENT OF ARABIC

TEACHING PLAN OF WASIM REJA Arabic (Honours)&Gen (2018-19) (July 2018 – June 2019)

Month	Sem-I (H)G	No. of Lecture	Sem-III (H)G	No. of Lecture	PART-III (H)G	No. of Lecture
Jul	Theory: CC1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.	4	Theory CC5: Unit:3 Two poetry of Hassan bin Thabit. Unit:4 A poetry of Abbas bin Mirdas from Hamasa	4	Theory Paper -v Poetry (Modern) Unit-1 جميل وبثين 1 جميل الزهاوي Jamil wa buthain	5
	CC2:Arabic Prose (Islamic & Medieval) (Part-A) Unit :1 Tarjama Surah Hjrta Unit :3 Sahih Hadith		CC7: History of Arabic Literature in Egypt: Unit: A,B&C		5	
	Theory: GE1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.	2	Theory: CC1C: Prose :(Islamic medieval & modern period) Unit :6 Sura Hujrat Unit:7 Sahih Hadith	3	Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين	2
			SEC1: Translation & Composition (on the basis of Grammatical rules) UNIT: 1		2	
Aug	Theory: CC1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.	4	Theory CC5: Unit:3 Two poetry of Hassan bin Thabit. Unit:4 A poetry of Abbas bin Mirdas from Hamasa	4	Theory Paper-V POETRY (Modern Period unit 1) جميل وبثين جميل الزهاوي Jamil wa buthain	3
	CC2:Arabic Prose (Islamic & Medieval) (Part-A) Unit :1 Tarjama Surah Hjrta Unit :3 Sahih Hadith		CC7: History of Arabic Literature in Egypt: Unit: A,B&C		6	
	Theory: GE1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.	3	Theory: CC1C: Prose :(Islamic medieval & modern period) Unit :6 Sura Hujrat Unit:7 Sahih Hadith	1	Paper VII: History of Islam, Philology Unit 1: Semetic languages: its chief characteristics Hebrew, Aramaic, Arabic, Syriac.	3
			SEC1: Grammar ,translation & latter writing Unit 1		1	

Sept	<p>Theory: CC1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>Theory CC5: Unit:3 Two poetry of Hassan bin Thabit. Unit:4 A poetry of Abbas bin Mirdas from Hamasa</p>	<p>Theory Paper V Poetry (Modern Period unit 2) سكران عباس محمود العقاد Sakran</p>	4
	<p>CC2:Arabic Prose (Islamic & Medieval) (Part-A) Unit :1 Tarjama Surah Hjrnt Unit :3 Sahih Hadith</p>	<p>CC7: History of Arabic Literature in Egypt: Unit: A,B&C</p>	<p>Paper VI Prose (Modern Period unit 1) Dua tarikq</p>	4
	<p>Theory: GE1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>Theory: CC1C: Prose :(Islamic medieval & modern period) Unit :6 Sura Hujrat Unit:7 Sahih Hadith</p>	<p>Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين</p>	2
	<p>SEC1: Grammar ,translation & latter writing Unit 1</p>	<p>Paper VIII Unit- 1 Outline History of Modern Arab world. Morocco Lebanon</p>	2	
Oct	<p>Theory: CC1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>Theory CC5: Unit:3 Two poetry of Hassan bin Thabit. Unit:4 A poetry of Abbas bin Mirdas from Hamasa</p>	<p>Theory Paper V Poetry (Modern Period unit 1) عصفور الجنة عبد الرحمن الشكري Usfurui Jannah</p>	3
	<p>CC2:Arabic Prose (Islamic & Medieval) (Part-A) Unit :1 Tarjama Surah Hjrnt Unit :3 Sahih Hadith</p>	<p>CC7: History of Arabic Literature in Egypt: Unit: A,B&C</p>	<p>Paper VI Prose (Modern Period unit 2) الثقافة الهندية أحمد أمين Thakafatul Hindiya</p>	3
	<p>Theory: GE1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>Theory: CC1C: Prose :(Islamic medieval & modern period) Unit :6 Sura Hujrat Unit:7 Sahih Hadith</p>	<p>Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين</p>	3
	<p>SEC1: Grammar ,translation & latter writing Unit 1</p>	<p>Paper VIII Unit- 1 Outline History of Modern Arab world. Palestine Israel</p>	2	
Nov	<p>Theory: CC1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>Theory CC5: Unit:3 Two poetry of Hassan bin Thabit. Unit:4 A poetry of Abbas bin Mirdas from Hamasa</p>	<p>Theory: Paper V Poetry (Modern Period unit 1) جميل وبثين Jamil wa buthain Unit 2: Marta al Bania</p>	3
	<p>CC2:Arabic Prose (Islamic & Medieval) (Part-A) Unit :1 Tarjama Surah Hjrnt Unit :3 Sahih Hadith</p>	<p>CC7: History of Arabic Literature in Egypt: Unit: A,B&C</p>	<p>Paper VI Prose (Modern Period unit 2) المدنية الإسلامية شكيب AL Madina AL Islamiah</p>	4
	<p>Theory: GE1: A. Hist. of Arabic</p>	<p>Theory:</p>		
	<p>SEC1: Translation & Composition (on the basis of Grammatical rules) UNIT: 1</p>	<p>SEC1: Translation & Composition (on the basis of Grammatical rules) UNIT: 1</p>		

	<p>Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>CC1C: Prose :(Islamic medieval & modern period) Unit :6 Sura Hujrat Unit:7 Sahih Hadith</p> <p>SEC1: Grammar ,translation & latter writing Unit 1</p>	<p>2</p> <p>1</p>	<p>Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين</p> <p>Paper VIII Unit- 1 Outline History of Modern Arab world. Egypt. Sudan.</p>	<p>4</p> <p>3</p>
	<p>Theory: CC1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p> <p>CC2:Arabic Prose (Islamic & Medieval) (Part-A) Unit :1 Tarjama Surah Hjrat Unit :3 Sahih Hadith</p>	<p>Theory CC5: Unit:3 Two poetry of Hassan bin Thabit. Unit:4 A poetry of Abbas bin Mirdas from Hamasa</p> <p>CC7: History of Arabic Literature in Egypt: Unit: A,B&C</p> <p>SEC1: Translation & Composition (on the basis of Grammatical rules) UNIT: 1</p>	<p>3</p> <p>4</p> <p>2</p>	<p>Theory Paper V Poetry (Modern Period unit 1) جميل وبثين Jamil wa buthain</p> <p>Paper VI PROSE (Modern Period unit 1) أول عهد يثرب محمد حسين هيكل AWALE AHDE BE YASRIB</p>	<p>4</p> <p>3</p>
Dec	<p>Theory: GE1: A. Hist. of Arabic Literature(from Pre-Islamic to Umayyad Period Unit 1: Pre-Islamic Period (500-622 A. D.</p>	<p>Theory: CC1C: Prose :(Islamic medieval & modern period) 2 Unit :6 Sura Hujrat Unit:7 Sahih Hadith</p> <p>SEC1: Grammar ,translation & latter writing Unit 1</p>	<p>2</p> <p>1</p>	<p>Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين</p> <p>Paper VIII Unit- 1 Outline Sudan. History of Modern Arab world. Egypt. Sudan</p>	<p>2</p> <p>2</p>
	<p>Sem-II (H)G Theory: CC3: History of Arabic Literature (Abbasid Period & Indian Arabic Lit.),Gram. &Trans . : A.Hist. of Arabic Lit. (Abbasid Period -750-1258) & Indian Arabic Lit.) Unit : a) & b)</p> <p>CC4: Arabic Prose (Islamic & Medieval) (Part-B) Unit 1: خطبة عمر (رض) في (الحكم (khutbah umar) Unit 3: القضاء و القدر: (al kada wa al kadar)</p> <p>Theory:</p>	<p>Sem-IV (H)G Theory: CC8: Poetry (Abbasid & Fatimid) المتنبي نعد المشرفية والحوالي (2) (Poetry of Mutanabbi) CC9: History of Arabic Literature (North & South America/Adabul Mahjar) & Grammar + Translation 1- History of Mahjarite literature in North+South America /Adabul Mahjar A</p> <p>CC10: Development ofModern Arabic Novel, short-story, Drama & Formation of Literary Groups A & B</p> <p>SEC2: Translation & Interpretation (from English into Arabic & vice versa from News papers) & Communicative Skill:</p>	<p>4</p> <p>3</p> <p>4</p> <p>5</p> <p>2</p>	<p>PART-III (H)G Theory: Paper-V POETRY (Modern Period unit 1) جميل وبثين Jamil wa buthain</p> <p>Paper VI PROSE (Modern Period unit 1) أول عهد يثرب محمد حسين هيكل AWALE AHDE BE YASRIB</p> <p>Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه</p>	<p>4</p> <p>3</p> <p>3</p> <p>2</p>
Jan					

	<p>GE2: A. History of Arabic Literature (Abbasid Period, 750-1258 A.D.), Grammar & Translation Abbasid Period : (1) PROSE Literature with special reference to Ibn-ul-Muqaffa , Al-Jahiz, Al-Hariri and Al-Hamazan</p>	<p>3</p> <p>Theory: CC1D: Poetry : (Islamic, medieval, & Modern Period) 1) حسان بن ثابت وقال يرثي النبي صلى الله عليه وسلم الحماسة العباس بن مرداس السلمى 5)</p> <p>SEC2: Grammar ,translation & latter writing Unit-a)</p>	<p>وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين</p> <p>2</p> <p>Paper VIII</p> <p>Unit- 1 Outline History of Modern Arab world. Libiya. Tunisia</p> <p>2</p>
	<p>Theory CC3: History of Arabic Literature (Abbasid Period & Indian Arabic Lit.),Gram. &Trans . : A.Hist. of Arabic Lit. (Abbasid Period -750-1258) & Indian Arabic Lit.) Unit : a) & b)</p> <p>CC4: Arabic Prose (Islamic & Medieval) (Part-B) خطبة عمر (رض) في الحكم القضاء و القدر: Unit 3</p>	<p>3</p> <p>Theory CC8: Poetry (Abbasid & Fatimid) 2) المتنبي نعت المشرفية والعوالي (Poetry of Mutanabbi)</p> <p>CC9: History of Arabic Literature (North & South America/Adabul Mahjar) & Grammar + Translation 1- History of Mahjarite literature in North+South America /Adabul Mahjar A</p> <p>4</p> <p>2</p> <p>3</p> <p>CC10: Development of Modern Arabic Novel, short-story, Drama & Formation of Literary Groups A & B</p> <p>2</p> <p>SEC2: Translation & Interpretation (from English into Arabic & vice versa from News papers) & Communicative Skill: 2</p>	<p>Theory Paper V Poetry (Modern Period unit 2) سكران عباس محمود العقاد Sakran</p> <p>3</p> <p>Paper VI PROSE (Modern Period unit 1) Marta al Bania</p> <p>3</p> <p>Paper VII: History of Islam, Philology</p> <p>Unit 2: Semetic languages: its chief characteristics Hebrew, Aramaic, Arabic, Syriac.</p> <p>3</p> <p>Paper VIII</p> <p>Unit- 1 Outline History of Modern Arab world. Morocco Lebanon</p> <p>2</p>
Feb	<p>Theory: GE2: A. History of Arabic Literature (Abbasid Period, 750-1258 A.D.), Grammar & Translation Abbasid Period : (1) PROSE Literature with special reference to Ibn-ul-Muqaffa , Al-Jahiz, Al-Hariri and Al-Hamazan 2</p>	<p>Theory: CC1D: Poetry : (Islamic, medieval, & Modern Period) 1) حسان بن ثابت وقال يرثي النبي صلى الله عليه وسلم الحماسة العباس بن مرداس السلمى 5) SEC2: Grammar ,translation & latter writing Unit-a)</p>	<p>3</p> <p>3</p> <p>3</p> <p>3</p>
Mar	<p>Theory CC3: History of Arabic Literature (Abbasid Period & Indian Arabic Lit.),Gram. &Trans . : A.Hist. of Arabic Lit. (Abbasid Period -750-1258) & Indian Arabic Lit.) Unit : a) & b) CC4: Arabic Prose (Islamic & Medieval) (Part-B) خطبة عمر (رض) في الحكم</p>	<p>Theory: CC8: Poetry (Abbasid & Fatimid) 2) المتنبي نعت المشرفية والعوالي (Poetry of Mutanabbi)</p> <p>CC9: History of Arabic Literature (North & South America/Adabul Mahjar) & Grammar + Translation 1- History of Mahjarite literature in North+South America /Adabul Mahjar A</p> <p>3</p> <p>3</p> <p>5</p> <p>CC10: Development of Modern Arabic Novel, short-story, Drama & Formation of Literary Groups</p>	<p>Theory Paper V Poetry (Modern Period unit 1) عصفور الجنة عبد الرحمن الشكري Usfurui Jannah</p> <p>3</p> <p>Paper VI Prose (Modern Period unit 1) Dua tarikq</p> <p>3</p> <p>Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه</p> <p>3</p>

	Unit 3: القضاء و القدر		A & B		وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين	
	Theory: GE2: A. History of Arabic Literature (Abbasid Period, 750-1258 A.D.), Grammar & Translation Abbasid Period : (1) PROSE Literature with special reference to Ibn-ul-Muqaffa , Al-Jahiz, Al-Hariri and Al-Hamazan		SEC2: Translation & Interpretation (from English into Arabic & vice versa from News papers) & Communicative Skill: 1) Theory: CC1D: Poetry : (Islamic, medieval, & Modern Period) حسان بن ثابت وقال يرثي النبي صلى الله عليه وسلم الحماسة العباس بن مرداس السلمى 5) 2 SEC2: Grammar ,translation & latter writing Unit-a) 2	2	Paper VIII Unit- 1 Outline History of Modern Arab world. Palestine Israel	2
	Theory CC3: History of Arabic Literature (Abbasid Period & Indian Arabic Lit.),Gram. &Trans . : A.Hist. of Arabic Lit. (Abbasid Period -750-1258) & Indian Arabic Lit.) Unit : a) & b) CC4: Arabic Prose (Islamic & Medieval) (Part-B) Unit 1: خطبة عمر (رض) في الحكم القضاء و القدر: Unit 3	2	Theory CC8: Poetry (Abbasid & Fatimid) 2) المتنبي نعت المشرفية والعوالي (Poetry of Mutanabbi) CC9: History of Arabic Literature (North & South America/Adabul Mahjar) & Grammar + Translation 1- History of Mahjarite literature in North+South America /Adabul Mahjar A CC10: Development of Modern Arabic Novel, short-story, Drama & Formation of Literary Groups A & B	4	Theory Paper V Poetry (Modern Period unit 1) جميل وبتين Jamil wa buthain Paper VI Prose (Modern Period unit 2) الثقافة الهندية أحمد أمين Thakafatul Hindiya Paper VII: History of Islam, Philology Unit 2: Semetic languages: its chief characteristics Hebrew, Aramaic, Arabic, Syriac.	3
Apr	Theory: GE2: A. History of Arabic Literature (Abbasid Period, 750-1258 A.D.), Grammar & Translation Abbasid Period : (1) PROSE Literature with special reference to Ibn-ul-Muqaffa , Al-Jahiz, Al-Hariri and Al-Hamazan		SEC2: Translation & Interpretation (from English into Arabic & vice versa from News papers) & Communicative Skill: 1) Theory: CC1D: Poetry : (Islamic, medieval, & Modern Period) حسان بن ثابت وقال يرثي النبي صلى الله عليه وسلم الحماسة العباس بن مرداس السلمى 5) SEC2: Grammar ,translation & latter writing Unit-a)	4	Paper VIII Unit- 2 Outline History of Modern Arab world. Egypt. Sudan.	2
	Theory CC3: History of Arabic Literature (Abbasid Period & Indian Arabic Lit.),Gram. &Trans . : A.Hist. of Arabic Lit. (Abbasid Period -750-1258) & Indian Arabic Lit.) Unit : a) & b) CC4: Arabic Prose (Islamic & Medieval) (Part-B) Unit 1: خطبة عمر (رض) في الحكم القضاء و القدر: Unit 3	3	Theory CC8: Poetry (Abbasid & Fatimid) 2) المتنبي نعت المشرفية والعوالي (Poetry of Mutanabbi) CC9: History of Arabic Literature (North & South America/Adabul Mahjar) & Grammar + Translation 1- History of Mahjarite literature in North+South America /Adabul Mahjar A CC10: Development of Modern Arabic Novel, short-story, Drama & Formation of Literary Groups A & B	4	Theory Paper V Poetry (Modern Period unit 2) سكران عباس محمود العقاد Sakran Paper VI Prose (Modern Period unit 2) المدنية الإسلامية شكيب AL Madina AL Islamiah Paper VII Unit 1: History of Islam سيرة النبي صلى الله عليه وسلم من مولده إلى وفاته وتاريخ الخلفاء الراشدين	3
May	Theory: GE2: A. History of Arabic Literature (Abbasid Period, 750-1258 A.D.), Grammar & Translation		SEC2: Translation & Interpretation (from English into Arabic & vice versa from News papers) & Communicative Skill: 1)	3	Paper VIII Unit- 1 Outline	1

Abbasid Period : (1)
PROSE Literature with
special reference to Ibn-
ul-Muqaffa , Al-Jahiz,
Al-Hariri and Al-
Hamazan

Theory

CC3: History of Arabic
Literature (Abbasid
Period & Indian Arabic
Lit.), Gram. & Trans . :

A.Hist. of Arabic Lit. (
Abbasid Period -750-
1258) & Indian Arabic
Lit.)

Unit : a) & b)

CC4: Arabic Prose (
Islamic & Medieval)

(Part-B)

Unit 1: خطبة عمر (رض) في
الحكم

Unit 3: القضاء و القدر

Theory:

GE2: A. History of
Arabic Literature
(Abbasid Period, 750-
1258 A.D.) , Grammar &
Translation

Abbasid Period : (1)
PROSE Literature with
special reference to Ibn-
ul-Muqaffa , Al-Jahiz,
Al-Hariri and Al-
Hamazan

Theory:

CC1D: Poetry : (Islamic, medieval,
& Modern Period)

1) حسان بن ثابت وقال يرثي النبي صلى الله
عليه وسلم

5) الحماسة العباس بن مرداس السلمي

SEC2: Grammar ,translation &
latter writing

Unit-a)

Theory

CC8: Poetry (Abbasid & Fatimid)

2) المتنبي نعت المشرفية والعوالي

(Poetry of Mutanabbi)

CC9: History of Arabic Literature
(North & South America/Adabul
Mahjar) & Grammar + Translation

1- History of Mahjarite literature in
North+South America /Adabul
Mahjar A

CC10: Development of Modern
Arabic Novel, short-story, Drama
& Formation of Literary Groups

A & B

SEC2: Translation & Interpretation
(from English into Arabic & vice
versa from News papers) &
Communicative Skill:

1)

Theory:

CC1D: Poetry : (Islamic, medieval,
& Modern Period)

1) حسان بن ثابت وقال يرثي النبي صلى الله
عليه وسلم

5) الحماسة العباس بن مرداس السلمي

SEC2: Grammar ,translation &
latter writing

Unit-a)

History of Modern
Arab world.
Palestine
Israel

Theory:

Paper V Poetry

(Modern Period unit 1)

عصفور الجنة عبد

الرحمن الشكري

Usfurui Jannah

Paper VI Prose (Modern
Period unit 2)

الثقافة الهندية أحمد أمين

Thakafatul Hindiya

**Paper VII: History of
Islam, Philology**

**Unit 2: Semetic
languages: its chief
characteristics
Hebrew, Aramaic,
Arabic, Syriac.**

Paper VIII

Unit- 1 Outline

History of Modern
Arab world.

Libiya.

Tunisia

June

Wasim Raza

Signature of the Teacher

Department of Arabic,
Suri Vidyasagar College

DEPARTMENT OF MICROBIOLOGY

TEACHING PLAN OF RAMKRISHNA ROY
Microbiology (Honours) (2018-19) (July 2018 – June 2019)

Month	Sem-I (II)	No. of Lecture	Sem-III (II)	No. of Lecture	Part III (II)	No. of Lecture
Jul	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 2: Diversity of Microbial World Systems of Classification	4	Theory CC5: Microbial Physiology and Metabolism Unit 5: Chemolithotrophic and Phototrophic Metabolism Practical CC5: Microbial Physiology and Metabolism 4. Effect of pH on growth of <i>E. coli</i>	8	Theory Paper- VIII: Ecology & Application of Microorganisms. Group A: Environmental Microbiology 5. Microbial Leaching	4
	Practical CC1: Introduction to Microbiology and Microbial Diversity 8. Study of <i>Rhizopus</i> , <i>Penicillium</i> and <i>Aspergillus</i> from permanent slides	2		2	Paper VII: Genetics of Microorganisms & Medical Microbiology Group A: Microbial Genetics & Gene Manipulation 4. Concept of Central Dogma, DNA replication	4
Aug	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 2: Diversity of Microbial World: General characteristics and representative members of different groups (Cellular Microorganisms & Acellular Entity)	4	Theory CC6: Cell Biology Unit 5: Cell Cycle and Cancer (Eukaryotic Cell Cycle and its Regulation, Mitosis and Meiosis) Practical CC6: Cell Biology Study of different stages of Meiosis from Permanent slide	4	Theory Paper -VIII: Ecology & Application of Microorganisms Group A: Environmental Microbiology. 4. Biological waste water treatment	8
	Practical CC1: Introduction to Microbiology and Microbial Diversity 9. Study of <i>Spirogyra</i> and <i>Chlamydomonas</i> from permanent slides.-	2				
	10. Study of <i>Paramecium</i> and <i>Planocidium</i> from permanent slides.-	2				

Sept	Theory: CC2: Bacteriology Unit 3: Nutrition	6	Theory CC6: Cell Biology Unit 3: Cell Cycle and Cancer (Development of Cancer, causes of Cancer)	4	Theory Paper -VIII: Ecology & Application of Microorganisms Group B: Food & Industrial Microbiology.	9
	Practical CC2: Bacteriology 4. Gram's Staining	2	Theory CC7: Molecular Biology Unit 1: Transcription in Prokaryotes and Eukaryotes. (Transcription: Definition, Promoter, RNA Polymerase, Transcription unit)	6	1. Food production by Microorganism. Fermented dairy products (Cheese, Yogurt), Fermented Food (Sauerkrauts, Ensilage, Single Cell Protein),	
	3. Negative Staining	2	Practical CC7: Molecular Biology 4. Estimation of DNA and its purity check and 7. Distinction of Protein by using UV Spectrophotometer.	2		
	5. Acid fast Staining- permanent slide	2		2	Practical Paper IX (Practical) 6. Microbiological examination of water (drinking water, supply water & pond water).	
Oct	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 5: Mycology General Characteristics of Fungi	4	Theory CC7: Molecular Biology Unit 3: Transcription in Prokaryotes and Eukaryotes, Transcription in Eukaryotes.	7	Theory Paper - VII: Genetics of Microorganisms & Medical Microbiology. Group A: Microbial Genetics & Gene Manipulation.	5
			CC7: Molecular Biology Unit 4: Post- Transcriptional Processing Practical CC6: Cell Biology 4. Study of Polyploidy in Onion Root tip by Colchicine Treatment.	4	7. Genetic Engineering: Principles, Vectors (Plasmid based- pUC & pBR 322, YAC, BAC, λ phage, cosmid), 7)	
Nov	Theory: CC1: Introduction to Microbiology and Microbial Diversity Unit 5: Mycology Reproduction in Fungi, Heterokaryosis, Heterothallism and Parasexual Mechanism	4	Theory CC7: Molecular Biology Unit 4: Post- Transcriptional Processing RNA interference: si RNA and mi RNA.	2	Theory Paper - VII: Genetics of Microorganisms & Medical Microbiology. Group A: Microbial Genetics & Gene Manipulation.	5
	Ecological Importance of Fungi	1	Practical CC5: Microbial Physiology and Metabolism.		7. Genetic Engineering: Enzymes, Gene transfer, Methods of Screening (blue-white). Application in Agriculture, Health & Industry.	
	Practical CC 2: Bacteriology 6. Endospore Staining	2	5. Effect of different concentration of glucose on growth of <i>E. coli</i>	2		

					Paper- VII Group B: Microbial Pathogenicity & Immunity. 4. Immunity: (f) Antigen - Types & characteristics Practical Paper -X (Practical) 8. Determination of Thermal Death Point (TDP) of a bacteria	 2 2
Dec	Theory: CC1: Introduction to Microbiology and Microbial Diversity Special classes + doubt clearing+ discussions Practical Practice classes	 4 2	Theory CC5: Microbial Physiology and Metabolism Unit 5: Chemolithotrophic and Photothetic Metabolism (Revision class) Question Answer Practice	 4 4 2	Theory Paper – VII: Genetics of Microorganisms & Medical Microbiology. Group B: Microbial Pathogenicity & Immunity. 4. Immunity (g)Haptens: Characteristics& Function. (i) Complement fixation pathway. Practical Paper -X (Practical) 9. Widal Test (Determination Ab titers using tit)	 6 2 3 2
	Sem-II (II)		Sem-IV (II)			
Jan	Theory CC3: Biochemistry Unit 2: Carbohydrates Practical CC 3: Biochemistry Qualitative/ Quantitative tests for Carbohydrates (DNS method)	 4 2	Theory CC 9: Environmental Microbiology Unit 4: Waste Management Practical CC 9: Environmental Microbiology 2.Isolation of Cellulose degrading microbes by enrichment culture technique.	 8 2	Theory Paper – VII: Genetics of Microorganisms & Medical Microbiology. Group B: Microbial Pathogenicity & Immunity 3. Common Microbial Diseases: (ii) Fungal- Candidiasis (iv) Protozoal- Malaria Practical Paper -X (Practical) 11. Dot ELISA	 2 2 2

Feb	<p>Theory</p> <p>CC3: Biochemistry</p> <p>Unit 1: Carbohydrates (Sugar Derivatives and Polysaccharides)</p> <p>Practical</p> <p>CC3: Biochemistry</p> <p>1 Qualitative/Quantitative tests for Proteins (Lowry method)</p>	4	<p>Theory</p> <p>CC10: Food and Dairy Microbiology</p> <p>Unit 4: Fermented Food</p> <p>Practical</p> <p>CC10: Food and Dairy Microbiology</p> <p>2. Study of Microorganisms from Dairy.</p>	4	
Mar	<p>Theory</p> <p>CC4: Virology</p> <p>Unit 5: Prevention and Control of Viral Diseases (Antiviral Compounds and their mode of action)</p> <p>Practical</p> <p>CC3: Biochemistry</p> <p>2 Qualitative/Quantitative tests for Amino Acids (Ninhydrin)</p> <p>3 Quantitative/Qualitative tests for DNA (Diphenylamine)</p>	4	<p>Theory</p> <p>CC10: Food and Dairy Microbiology</p> <p>Unit 4: Fermented Food</p> <p>Practical</p> <p>CC 9: Environmental Microbiology</p> <p>3 Isolation of Microbes from Rhizosphere and Rhizoplane.</p>	4	
Apr	<p>Theory</p> <p>CC4: Virology</p> <p>Unit 5: Prevention and Control of Viral Diseases (Interferon & General Principles of Viral Vaccination)</p> <p>Practical</p> <p>CC4: Virology</p> <p>Report Writing: Educational Tour to Institute/ Industry.</p>	4	<p>Theory</p> <p>CC 8: Microbial Genetics</p> <p>Unit 5: Transposable Elements</p>	8	

May	Theory CC3: Biochemistry Unit 2: Carbohydrates (Revision Class)	4	Theory CC 10: Food and Dairy Microbiology Unit 1: Food as a Substrate for Microorganisms	6		
	Question - Answer Practice and Discussions	3	Practical CC 8: Microbial Genetics 3. Study of Survival curve of Bacteria after exposure to Ultra Violet (UV) light.	2		
June	Special classes for theory And Practical practice classes.		Theory CC10: Food and Dairy Microbiology Special class	2		
			Practical CC10 : Food and Dairy Microbiology and CC 9 : Environmental Microbiology [Repeat practical Class]	2		

Ramkrishna Roy.

Signature of Teacher
Department of Microbiology
Suri Vidyasagar College

Department of Sanskrit
SuriVidyasagar College
Teaching Plan [July, 2018 to Dec, 2018]

Name of the Teacher	Stream	SEM-I		SEM-III		PART-III	
		Topic	No. of Class	Topic	No. of Class	Topic	No. of Class
Prof. Shyama-prasad Mukherjee	Hons.	CC-1 Classical Sanskrit Literature(Poetry): Section-A (I)Raghuvamśa: Canto-XIV (Verses: 31-68)	22	CC-6 Poetics and Literary Criticism Section-B (I) Sāhityadarpaṇa – Chapter-X (Śleṣa, Upamā, Rūpaka, Utprekṣā, Atiśayokti, Dṛṣṭānta, Nidarśanā&Arthāntarany āsa)	20	P-VI Vāmana’s Kāvyaalamkarasutratvṛtti (1 st to 3 rd Adhikāra)	40
	Gen.						
Dr. Dinesh Kr. Das	Hons.	CC-1 Classical Sanskrit Literature(Poetry): Section-B Kirātārjunīya - Canto I (1-25 Verses)	34	CC-6 Poetics and Literary Criticism: Section-A (I) Vāmana’skāvyālamkārasū travṛtti – First Adhikaraṇa-- (Chapters – I, II & III) (II) Metrics – A General Concept of Sanskrit Metres and the definitions of the following Meters --- (IndravajrāUpendravajrā, Upajāti, Vaṁśasthavila,Vasantatil aka, Mālinī&Mandākrāntā)	35	P-V Vedic Texts: Ṛgvedasamhitā – Agnisūkta-(2/6) , Indrasūkta- (2/12), Akṣasūkta-(10/34) , Devīsūkta-(10/125)	45

	Gen.						
Prof. Prodig Kr. Sarkar	Hons.	CC-2 Critical Survey of Sanskrit Literature: VaidikaSāhitya Purāṇa	10	CC -5 Classical Sanskrit Literature (Drāmā): (I)Abhijñānaśakuntala (I-V)	40	P- VII Kādambarī- Śukanāśopadeśa Mnnusamhitā – 1 to 50 verses	40+10
	Gen.			CC-5 Discipline - 1(Sanskrit) Sanskrit Drama: Section-A (I)Abhijñānaśakuntala (I-V)	35		
Prof. Biswajit Raj	Hons.	CC-2 Critical Survey of Sanskrit Literature Section-B The History of Sanskrit Grammar. The History of Indian Philosophy	26	SEC-1 Basic Sanskrit: Section-A Brāhmī Script Writing Section-A Brāhmī Script Writing Section-E Brahmadatta-karkaṭa-kathā-(Aparīkṣitakāraka) –from Pañcatantra	35	P-VIII Tarkasamgraha Vedāntasāra	45
	Gen.	CC -1 Discipline -1(Sanskrit) Sanskrit Poetry Kirātārjunīya - Canto I (1-25 Verses)	25				
Prof. Kakali Ch. Mishra	Hons.	CC-1 Classical Sanskrit Literature(Poetry): Section-B The History of Sanskrit Literature. (Aśvaghōṣa, Kālidāsa, Bhāravi, Māgha, Bhaṭṭi, Śrīharṣa)	34	CC -5 Classical Sanskrit Literature (Drāmā)Section-A Section-B (I)The History of Sanskrit Literature (Drāmā) (Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Śrīharṣa, Bhavabhūti, Bhaṭṭanārāyaṇa)	50		
	Gen.	CC -1 Discipline -1(Sanskrit) Sanskrit Poetry Section-B (II) The History of Sanskrit Literature. (Aśvaghōṣa, Kālidāsa, Bhāravi,	35	Section-B (I)The History of Sanskrit Literature Drāmā (Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Śrīharṣa, Bhavabhūti,	21		

		Māgha,Bhaṭṭi,Śrīharṣa)		Bhaṭṭanārāyaṇa)			
Prof. Munmun Mishra	Hons.	CC-1 Rāmāyaṇa Mahābhārat CC-2 Critical Survey of Sanskrit Literature	15+ 15	CC-7 Indian Social Institution and Polity: Section-A Manusamhitā – Chapter-VII State Politics- (1-15), Upāyacatuṣṭaya- (106-110) &Sāḍguṇya – (161-170)	25	P-VIII Essay in Sanskrit	20
	Gen.	CC -1 Discipline -1(Sanskrit) Sanskrit Poetry: Section-A (I)Raghuvamśa: Canto-XIV (Verses: 31-68) (I)	25	CC-3 Section-B (20 classes) (I)The History of Sanskrit Literature Drāmā (Bhāsa, Kālidāsa ,Śūdraka, Viśākhadatta, Śrīharṣa, Bhavabhūti, Bhaṭṭanārāyaṇa)	20	P-IV Alamkāra: Sāhityadarpaṇa- Chapter: x	35
Prof. Chandrani Agarwala	Gen.	CC -1 Sanskrit Poetry Section-A (25 classes) Kirātārjunīya - Canto I (1-25 Verses Section-B (35 classes)) (II) The History of Sanskrit Literature. (Aśvaghōṣa,Kālidāsa,Bhāravi, Māgha,Bhaṭṭi,Śrīharṣa)	45	CC-3 (Sanskrit) Sanskrit Drama Section-A Abhijñānaśakuntala (I-V) SEC-I Yogasūtra of Patañjali Yogasūtra –I (1,2 &12-16) Yogasūtra –II (29,30,32,46,49 &50)	45+30	P-IV Manusamhita Chapter: VII 1-53 verses	20

Department of Sanskrit
SuriVidyasagar College
Teaching Plan [January, 2019 to June, 2019]

Name of the Teacher	Stream	SEM-II		SEM-IV		PART-III	
		Topic	No. of Class	Topic	No. of Class	Topic	No. of Class
Prof. Shyama-prasad Mukherjee	Hons.	CC-4 Self Management in the Gītā: Section-A Śrīmadbhagavadgītā (Adhyāya-4 th)(Whole)	35	CC-10 Sanskrit and World Literature Section-A (I) Sanskrit Studies Across the World- William Jones, Charles Wilkins, H.Wilson, Max Muller, J.G.Buhler, Sri Aurobindo, DayānandaSarasvatī, HaridāsaSiddhāntavāgīśa, ŚrījīvaNyāyatīrtha,NityānadaSmṛtitīrtha, Kshitish Chandra Chatterji, Roma Chaudhuri, PañcānanaTarkaratna&R amaranjanMukherji)	54	P-VI Daṇḍin's Kāvyaadarśa Chapter-I	35
	Gen	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: Section-A Daśakumāracarita-(Dvijopakṛti)--- As in Sanskrit Pāṭhamālā, B.U.	32	Basic Sanskrit – Part-I Section-D Brahmadaṭṭakarkaṭakathā-(Aparīkṣitakāraka)- Pañcatantra	14	P-III Kautiliya Arthasāstra	20

Dr. Dinesh Kr. Das	Hons.	CC -3 Classical Sanskrit Literature(Prose) Course Section- AŚukanāsopadeśa- Kādambarī (As in Sanskrit Pāṭhamālā, B.U. (evaṃsamatikrāmatsu----- bhrātaraucchedyāḥ)	17	CC-9 Modern Sanskrit Literature Core Course Section-A (II)Cipiṭakacarvaṇa- ŚrījivaNyāyatīrtha	30	P-V Hiraṇyagarbhasūkta Vedic Grammar: Declension of a- stems,Vedic Subjunctive, Vedic Infinitive,The Vedic Accent &Pada-pāṭha	45
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: The History of Sanskrit Literature – (Historical Kāvya)	25	Basic Sanskrit – Part-I Section-B (10 classes) Conjugations – (Bhū, Paṭh,Gam, Drś,Sev,Labh,Pac,Vṛt, Kṛ,Dā, Śru, Jñā - laṭ, loṭlaṅ,liṅ&Iṛṭ)	12		
Prof. Prodip Kr. Sarkar	Hons.	CC-4 Self Management in the Gītā: Section-B Selected ślokas from the Gītā 1.Meditation -Adhyāya-VI (10-26) II. Diet Control-Adhyāya-XVII (8-10) III. Rajoguṇa-Adhyāya III (36-40)	28	SEC-2 Spoken SanskritPolitical Thought in Sanskrit Literature I.Mudrārākṣasa–(Acts-I & II) II. Arthaśāstra-Śāsanādhikāra(20 classes)	25	P-VII Mnnusamhitā – 51 to 150 verses Arthaśāstra – Amātyotpatti & Duapranidhi	20+35
	Gen.			CC -4 Discipline - 1(Sanskrit) Sanskrit Grammar: Section-B Potential Participles, Nominal Suffixes (Matvarthīya), Causative Verbs, Desiderative Verbs, Frequentative Verbs, Indeclinable Past Participles, Use of Ktvā&Lyap.	22		
Prof. Biswajit Raj	Hons.	CC -3 Classical Sanskrit Literature(Prose) Section-B Daśakumāracarita- (Rājavāhanacarita)--- As in Sanskrit Pāṭhamālā ,BU		CC-9 Modern Sanskrit Literature Core Course Section-A Survey of Modern Sanskrit Literature in Bengal		P-VIII Vedāntasāra	35

	Gen.			CC -4 Discipline - 1(Sanskrit) Sanskrit Grammar: Section-A The Concept of the following Saṃjñās: Sūtra,Vārtika,Bhāṣya,Kar mapravacanīya,Nipāta,Ga ti , Upasarga,Guṇa,Vṛddhi,Ṭi, Ghi,Ghu,Nadī,Upadhā and Samprasāraṇa.	35	P-IV Vedic Texts	25
Prof. Kakali Ch. Mishra	Hons.	CC -3 Classical Sanskrit Literature(Prose)Section-C (I)The History of Sanskrit Literature (Prose). (Subandhu, Daṇḍin, Bāṇabhaṭṭ)	32	CC -8 Indian Epigraphy and Chronology Section- A (I) Epigraphy-The History of Epigraphical study in India. Section-B Śīlālekha- (a)Rudradāmanśīlālīpi (b)Meherauli Iron Pillar Inscription of Candra	33		
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: Section-B (I)The History of Sanskrit Literature (Prose). (Subandhu, Daṇḍin, Bāṇabhaṭṭa)	31	Basic Sanskrit – Part-I Section-A Declensions (a- kārānta,i-kārānta, u- kārānta and ṛ-kārānta - Masculine,Feminine& Neuter, Pronouns & Number) Translation	10		
Prof. Munmun Mishra	Hons.	CC -3 Classical Sanskrit Literature(Prose) Section-C The History of Sanskrit Literature (Fables) (Pañcatantra,Hitopadeśa,Vetāl apañcaviṃśati,Sinhāsanadvātr imśikā, Puruṣaparīkṣā)	35			P-VIII Substance	10
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: The History of Sanskrit Literature (Fables) (Pañcatantra,Hitopadeśa,Vetāl	30	CC -4 Discipline - 1(Sanskrit) Sanskrit Grammar: Section-C Comprehension	25		

		apañcaviṃśati, Sinhāsanadvātrimśikā, Puruṣaparīkṣā)					
Prof. Chandrani Agarwala	Hons.					P-VII Śilālekha: Rudradāmana	20
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose Section-A (30 classes) Daśakumāracarita- (Dvijopakṛti)	35	SEC-II Indian Theatre Drāmaturgy -- Sāhityadarpaṇa - Chapter- VI (Rūpaka, Nāndī, Vṛttis (wit hout Aṅgas), Prastāvanā, A rthaprakṛti, Arthopakṣepa ka, Patākāsthānakas, K ārya, Avasthā, Sandhi (without Aṅgas) & Nāṭikā	45		

Bhuvanprasad Agarwala
(Full Signature of the Examiner)

Biswajit Raj

Department of Sanskrit
SuriVidyasagar College
Teaching Plan [July, 2019 to Dec, 2019]

Name of the Teacher	Stream	SEM-I		SEM-III		SEM-V	
		Topic	No. of Class	Topic	No. of Class	Topic	No. of Class
Prof. Shyama-prasad Mukherjee	Hons.	CC-1 Classical Sanskrit Literature(Poetry): Section-A (I)Raghuvamśa: Canto-XIV (Verses: 31-68)	30	CC-6 Poetics and Literary Criticism Section-B (I) Sāhityadarpaṇa – Chapter-X (Śleṣa, Upamā, Rūpaka, Utprekṣā, Atiśayokti, Dṛṣṭānta, Nidarśanā&Arthāntarany āsa)	25	CC-12 Sanskrit Grammar: Section- B Samāsa - (Selected Sūtras upto Dvandva Compound)	40
	Gen.					DSE-1A Philosophy, Religion and Culture in Sanskrit Tradition A. The History of Vedic Literature B. The Social, Religious and Cultural Aspects as reflected in the Purāṇas	33
Dr. Dinesh Kr. Das	Hons.	CC-1 Classical Sanskrit Literature(Poetry): Section-B Kirātārjunīya - Canto I (1-25 Verses)	34	CC-6 Poetics and Literary Criticism: Section-A (I) Vāmana'skāvyālaṃkārasū travṛtti – First Adhikaraṇa-- (Chapters – I, II & III) (II) Metrics – A General Concept of Sanskrit Metres and the definitions of the following Meters ---	42	CC -11 Vedic Literature: Section-A Ṛgvedasamhitā –(Agnisūkta-(2/6) , Indrasūkta- (2/12), Akṣasūkta-(10/34) , Devīsūkta-(10/125) Section-B (10 classes) Declension of a- stems,Vedic Subjunctive, Vedic Infinitive,The Vedic Accent &Pada-pāṭha	44

				(IndravajrāUpendravajrā, Upajāti, Vaṁśasthavila,Vasantatil aka, Mālinī&Mandākrāntā)			
	Gen.						
Prof. Prodig Kr. Sarkar	Hons.	CC-2 Critical Survey of Sanskrit Literature: VaidikaSāhitya Purāṇa	13	CC -5 Classical Sanskrit Literature (Drāmā): (I)Abhijñānaśakuntala (I- V)	55	DSE-2 Elements of Linguistics – (I)Primitive Indo-European, Division of Indo-European, Discipli Indo-Iranian (Aryan),Emergence of Indo-Aryan, ne Non-Aryan Influence on Sanskrit, Vedic and Classical Specific Sanskrit. Elective (II)Some Phonetic Laws and Tendencies - Grimm’s Law,Verner’sLaw,Grassma nn’sLaw,Collitz’s Law, Assimilation, Dissimilation Metathesis, Prothesis, Epenthesis,Anaptyxis and Haplology	50
	Gen.			CC-3 Discipline - 1(Sanskrit) Sanskrit Drama: Section-A (I)Abhijñānaśakuntala (I- V)	42		
Prof. Biswajit Raj	Hons.	CC-2 Critical Survey of Sanskrit Literature Section-B The History of Sanskrit Grammar. The History of Indian Philosophy	32	CC-7 Indian Social Institution and Polity: Section-A Manusamhitā – Chapter-VII State Politics- (1-15), Upāyacatuṣṭaya- (106-110) &Sādḡuṇya – (161-170)	45	DSE-1 Dramaturgy -- Sāhityadarpaṇa - Chapter- VI (Rūpaka,Nāndī,Vṛttis(with outAṁgas),Prastāvanā, ArthaprakDiscipliṛti, Arthopakṣepaka,Patākāsth	56

				SEC-1 Basic Sanskrit: Section-A Brāhmī Script Writing Section-A Brāhmī Script Writing Section-E Brahmadatta-karkaṭa-kathā-(Aparīkṣitakāraka) –from Pañcatantra		ānakas,Kārya,Avasthā, ne Sandhi(without Aṃgas) &Nāṭikā	
	Gen.	CC -1 Discipline -1(Sanskrit) Sanskrit Poetry Kirātārjunīya - Canto I (1-25 Verses)	25				
Prof. Kakali Ch. Mishra	Hons.	CC-1 Classical Sanskrit Literature(Poetry): Section-B The History of Sanskrit Literature. (Aśvaghoṣa,Kālidāsa,Bhāravi, Māgha,Bhaṭṭi,Śrīharṣa)	34	CC-3 Discipline - 1(Sanskrit) Sanskrit Drama: CC -5 Classical Sanskrit Literature (Drāmā)Section-A Section-B (I)The History of Sanskrit Literature (Drāmā) (Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Śrīharṣa, Bhavabhūti, Bhaṭṭanārāyaṇa)	50	CC -11 Vedic Literature: Section-C Iśopaniṣad - Whole	11
	Gen.	CC -1 Discipline -1(Sanskrit) Sanskrit Poetry Section-B (II) The History of Sanskrit Literature. (Aśvaghoṣa,Kālidāsa,Bhāravi, Māgha,Bhaṭṭi,Śrīharṣa)	35	Section-B (I)The History of Sanskrit Literature Drāmā (Bhāsa, Kālidāsa ,Śūdraka, Viśākhadatta, Śrīharṣa, Bhavabhūti, Bhaṭṭanārāyaṇa)	21	SEC-III Sanskrit Composition A. Essay B. Hāsavidyakathā C. Comprehension	35
Prof. Munmun Mishra	Hons.	Section-A RāmāyaṇaMahābhārat-a CC-2 Critical Survey of Sanskrit Literature	26	CC-7 Indian Social Institution and Polity: Section-B. Arthaśāstra- (Dūtapraṇidhi)	25	cc-12 Sanskrit Grammar: Section-A The Concept of the following Saṃjñās: Sūtra,Vārtika,Bhāṣya,Karm apravacanīya,Nipāta,Gati, Upasarga,Guṇa,Vṛddhi,Ṭi, Ghi,Ghu,Nadī,Upadhā and Samprasāraṇa.	20
	Gen.	CC -1 Discipline -1(Sanskrit) Sanskrit Poetry: Section-A	35			GE-I : Indian Social Institution and Polity	56

		(I)Raghuvamśa: Canto-XIV (Verses: 31-68) (I)				Section-A Manusmhitā – Chapter-VII State Politics- (1-15), Upāyacatuṣṭaya- (106-110) &Sādguṇya – (161-170) Section-B.(30 classes) Arthasāstra- (Dūtapraṇidhi)	
Prof. Chandrani Agarwala	Gen.	CC -1 Sanskrit Poetry Section-A (25 classes) Kirātārjunīya - Canto I (1-25 Verses Section-B (35 classes)) (II) The History of Sanskrit Literature. (Aśvaghōṣa,Kālidāsa,Bhāravi, Māgha,Bhaṭṭi,Śrīh arṣa)	45	CC-3 (Sanskrit) Sanskrit Drama Section-A (I)Abhijñānaśakuntala (I- V) SEC-I Yogasūtra of Patañjali Yogasūtra –I (1,2 &12-16) Yogasūtra –II (29,30,32,46,49 &50)	45+40	DSE-II Literary Criticism I)Metrics – A General Concept of Sanskrit Metres and the definitions of the following Meters -- Indravajrā Upendravajrā,Upajāti, Varṃsasthavila,Vasantatila ka, Mālinī & Mandākrāntā (I) Sāhityadarpaṇa – Chapter-X (30 classes) (Śleṣa, Upamā, Rūpaka, Utprekṣā, Atiśayokti,Drṣṭānta, Nidarśanā & Arthāntaranyāsa)	33+32

**Department of Sanskrit
SuriVidyasagar College
Teaching Plan [January, 2020 to June, 2020]**

Name of the Teacher	Stream	SEM-II		SEM-IV		SEM-VI	
		Topic	No. of Class	Topic	No. of Class	Topic	No. of Class
Prof. Shyamaprasad Mukherjee	Hons.	CC-4 Self Management in the Gītā: Section-A Śrīmadbhagavadgītā (Adhyāya-4 th)(Whole)	35	CC-10 Sanskrit and World Literature Section-A (I) Sanskrit Studies Across the World- William Jones, Charles Wilkins, H.Wilson, Max Muller, J.G.Buhler, Sri Aurobindo, DayānandaSarasvatī, HaridāsaSiddhāntavāgīśa, ŚrījīvaNyāyatīrtha,NityānadaSmṛtitīrtha, Kshitish Chandra Chatterji, Roma Chaudhuri, PañcānanaTarkaratna&RamaranjanMukherji)	54	cc-14 Sanskrit Composition and Communication (A) Case-endings and Cases-(From First Case-ending and Nominative case to Fifth case ending and Ablative case as in Siddhāntakaumudī (40 classes) (B)Translation and Comprehension. (C) Reporting	40
	Gen	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: Section-A Daśakumāracarita-(Dvijopakṛti)--- As in Sanskrit Pāṭhamālā, B.U.	32	Basic Sanskrit – Part-I Section-D Brahmadattakarkāṭakathā-(Aparīkṣitākāraka)-Pañcatantra	14		
Dr. Dinesh Kr. Das	Hons.	CC -3 Classical Sanskrit Literature(Prose) Course Section-A Śukanāsopadeśa- Kādambarī (As in Sanskrit Pāṭhamālā, B.U. (evaṁsamatikrāmatsu----- bhrātarauchedyāḥ)	17	CC-9 Modern Sanskrit Literature Core Course Section-A (II)Cipiṭakacarvaṇa-ŚrījīvaNyāyatīrtha	30	CC -13 Indian Ontology and Epistemology Core Course (A)Tarkasaṁgraha – (saptapadārtha, karaṇa, pratyakṣa and sannikarṣa) (B)Vedāntasāra - (Excluding the last portion beginning with Mahāvākyārtha).	65
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: The History of Sanskrit Literature – (Historical Kāvya)	25	Basic Sanskrit – Part-I Section-B (10 classes) Conjugations – (Bhū, Paṭh,Gam,	12		

				Drś,Sev,Labh,Pac,Vṛt, Kṛ,Dā, Śru, Jñā - laṭ, loṭlañ,liñ&lrṭ)			
Prof. Prodip Kr. Sarkar	Hons.	CC-4 Self Management in the Gītā: Section-B Selected ślokas from the Gītā 1.Meditation -Adhyāya-VI (10- 26) II. Diet Control-Adhyāya- XVII (8-10) III. Rajoguṇa- Adhyāya III (36-40)	28	SEC-2 Spoken SanskritPolitical Thought in Sanskrit Literature I.Mudrārākṣasa–(Acts-I & II) II. Arthaśāstra- Śāsanādhikāra(20 claasses)	25	DSE-3 Fundamentals of Āyurveda (A)Concept of AṣṭāṅgĀyurveda. Discipli (B)Taittirīyopaniṣad – Bhrguballī- (1-3) (30 classes)	33
	Gen.			CC -4 Discipline - 1(Sanskrit) Sanskrit Grammar: Section-B Potential Participles, Nominal Suffixes (Matvarthīya), Causative Verbs, Desiderative Verbs, Frequentative Verbs, Indeclinable Past Participles, Use of Ktvā&Lyap.	22	GE-II Ethical Issues in Sanskrit Literature (I) Hitopadeśa –Mitrālābha (up to verse no.50) (30 classes) (II)Pañcatantra Mitrabheda Katha (Gomāyudundubhikathā) (30classes)	55
Prof. Biswajit Raj	Hons.	CC -3 Classical Sanskrit Literature(Prose) Section-B Daśakumāracarita- (Rājavāhanacarita)--- As in Sanskrit Pāṭhamālā ,BU		CC-9 Modern Sanskrit Literature Core Course Section-A Survey of Modern Sanskrit Literature in Bengal		DSE-4 Indian system of Logic Anumānakhaṇḍa&Upamā nakhada of Tarkasaṁgraha	
	Gen.			CC -4 Discipline - 1(Sanskrit) Sanskrit Grammar: Section-A The Concept of the following Saṁjñās: Sūtra,Vārtika,Bhāṣya,Kar mapravacanīya,Nipāta,Ga ti , Upasarga,Guṇa,Vṛddhi,Ṭi, Ghi,Ghu,Nadī,Upadhā and Samprasāraṇa.	35	DSE-1 From Discipline- 1B(Sanskrit) DSE-1B Select from DSE Group: Literary Criticism (30 classes) I)Metrics – A General Concept of Sanskrit Metres and the definitions of the following Meters -- Indravajrā Upendravajrā,Upajāti, Vaṁśasthavila,Vasantatila ka, Mālinī & Mandākrāntā	65

						(I) Sāhityadarpaṇa – Chapter-X (30 classes) (Śleṣa, Upamā, Rūpaka, Utprekṣā, Atiśayokti, Drṣṭānta, Nidarśanā & Arthāntaranyāsa)	
Prof. Kakali Ch. Mishra	Hons.	CC -3 Classical Sanskrit Literature(Prose)Section-C (I)The History of Sanskrit Literature (Prose). (Subandhu, Daṇḍin, Bāṇabhaṭṭ)	32	CC -8 Indian Epigraphy and Chronology Section-A (I) Epigraphy-The History of Epigraphical study in India. Section-B Śilālekha- (a)Rudradāmanśilālipi (b)Meherauli Iron Pillar Inscription of Candra	33		
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: Section-B (I)The History of Sanskrit Literature (Prose). (Subandhu, Daṇḍin, Bāṇabhaṭṭa)	31	Basic Sanskrit – Part-I Section-A Declensions (a-kārānta, i-kārānta, u-kārānta and ṛ-kārānta - Masculine, Feminine & Neuter, Pronouns & Number) Translation	10	SEC-IV Moral Values In Sanskrit Literature Section-A Dānavīraḥ Karṇaḥ (from Karṇabhāra) Section-B Śāśakasīmḥakathā(from Pañcatantra)	40
Prof. Munmun Mishra	Hons.	CC -3 Classical Sanskrit Literature(Prose)Section-C The History of Sanskrit Literature (Fables) (Pañcatantra, Hitopadeśa, Vetāl apañcaviṃśati, Siṅhāsanadvātrīṃśikā, Puruṣaparīkṣā)	32				
	Gen.	CC-2 Discipline -1(Sanskrit) Sanskrit Prose: The History of Sanskrit Literature (Fables) (Pañcatantra, Hitopadeśa, Vetāl apañcaviṃśati, Siṅhāsanadvātrīṃśikā, Puruṣaparīkṣā)	25	CC -4 Discipline -1(Sanskrit) Sanskrit Grammar: Section-C Comprehension	14		

<p>Prof. Chandrani Agarwala</p>	<p>Gen.</p>	<p>CC-2 Discipline -1(Sanskrit) Sanskrit Prose Section-A (30 classes) Daśakumāracarita- (Dvijopakṛti)</p>	<p>34</p>	<p>SEC-II Indian Theatre Drāmaturgy -- Sāhityadarpaṇa - Chapter- VI (Rūpaka,Nāndī,Vṛttis(wit houtAṅgas),Prastāvanā,A rthaprakṛti,Arthopakṣepa ka,Patākāsthānakas,K ārya,Avasthā, Sandhi (without Aṅgas) & Nāṭikā</p>	<p>45</p>	<p>DSE-II Literary Criticism I)Metrics – A General Concept of Sanskrit Metres and the definitions of the following Meters -- Indravajrā Upendravajrā,Upajāti, Varṇśasthavila,Vasantatila ka, Mālinī & Mandākrāntā GE-II Ethical Issues in Sanskrit Literature (I) Hitopadeśa –Mitrālābha (up to verse no.50) (II)Pañcatantra Mitrabheda Katha (Gomāyudundubhikathā)</p>	<p>30+62</p>
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Chyavanprasad Muralija
(Full Signature of the Examiner)

Biswajit Raj

TEACHING PLAN
Department of Computer Science

Course: Computer Science (General)
Session: 2018-19(July 2018 – June 2019)

Month	Sem-I (G)	Sem-III (G)
Jul	<p>Theory: Computer Fundamentals, Planning the Computer Program, Introduction to Python</p> <p>Practical: Program to convert from Fahrenheit to Celsius and vice versa, marks grading of students</p>	<p>Theory: Introduction, Types of operating systems, Operating System Organization</p> <p>Practical: Usage of basic Linux commands</p> <p>SEC: In MS Word creating telephone directory, time-table form for your college designing a certificate</p>
Aug	<p>Theory: Techniques of Problem Solving, Introduction to Python, Overview of Programming</p> <p>Practical: Program to calculate area of geometric figures, Fibonacci Series, factorial of integer.</p>	<p>Theory: Process Management, Shell introduction and Shell Scripting</p> <p>Practical: Writing shell scripts to check prime no, displaying calendar with various options.</p> <p>SEC: In MS Word creating tables with various specifications, first page of a book</p>
Sept	<p>Theory: Introduction to Python, Creating Python Programs</p> <p>Practical: Program to find sum of series, operations on comparable matrices, to create mathematical 3D objects</p>	<p>Theory: Process Management, Scheduling</p> <p>Practical: Writing shell scripts for sum of digits, multiplication table, operations on files</p> <p>SEC: In MS Excel creating worksheets with specified data and applying functions</p>
Oct	<p>Theory: Control structures</p> <p>Practical: Program to display histogram, mathematical curves, plotting graphs</p>	<p>Theory: Memory Management</p> <p>Practical: Writing shell scripts for basic calculator, pyramid structure display, LCD of numbers</p> <p>SEC: In MS Excel creating worksheets with specified data and applying functions</p>
Nov	<p>Theory: Introduction to Advanced Python: + Tutorial</p> <p>Practical: Program to plot graphs on various equations + Tutorial</p>	<p>Theory: Memory Management</p> <p>Practical: Writing shell scripts to calculate power, factorial, Armstrong no, file permissions - tutorial</p> <p>SEC: In MS Excel plotting with given data, Creating basic presentations in MS PowerPoint</p>
Dec	<p>Theory and Practical: Special classes + doubt clearing+ discussions</p>	<p>Theory and Practical: Special classes - doubt clearing- discussions</p>
Jan	Sem-II (G)	Sem-IV (G)
Feb	<p>Theory: Introduction to Database Management Systems</p> <p>Practical: DDL, Commands</p> <p>Theory: Entity Relationship and Enhanced ER Modeling</p> <p>Practical: DML Commands</p>	<p>Theory: Introduction</p> <p>Practical: Designing the register set, memory and the instruction set with given specifications</p> <p>SEC: Creating HTML document with specified formatting options.</p> <p>Theory: Data Representation and basic Computer Arithmetic</p> <p>Practical: Simulating the created machine for the given register reference instructions</p> <p>SEC: Creating HTML document containing lists, image, links.</p> <p>Theory: Basic Computer Organization and Design</p> <p>Practical: Simulating the created machine for the memory-reference instructions</p> <p>SEC: Creating HTML document containing tables</p>
Mar	<p>Theory: Relational Data Model</p> <p>Practical: Retrieving employee information from a given company database</p>	
Apr	<p>Theory: Database design</p> <p>Practical: Retrieving employee information from a given company database</p>	<p>Theory: Central Processing Unit</p> <p>Practical: Simulating the created machine for the memory-reference instructions</p> <p>SEC: Creating HTML document containing tables</p>

May	<p>Theory: Database design</p> <p>Practical: Identifying, adding employee information from in a given company database + Tutorial + Study 1 our</p>	<p>Theory: Programming the Basic Computer: Input-output Organization + Tutorial</p> <p>Practical: Modifying a machine with given instruction format - Tutorial</p> <p>SEC: Creating HTML document containing form</p> <p>09/10/15</p>
Jun	<p>Theory and Practical: Special classes + double clearing + discussions</p>	<p>Theory and Practical: Special classes + double clearing + discussions</p>

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**TEACHING PLAN (HONS. & GENL.) OF FACULTY MEMBERS OF DEPARTMENT OF PHYSIOLOGY FOR SESSION
2018-2019**

DEPARTMENT OF PHYSIOLOGY

TEACHING PLAN

DR. AMAL KUMAR PARI

Physiology (Honours) (July 2018–June 2019)

Month	Sem-I(H)	No. of Lecture	Sem-III(H)	No. of Lecture	Sem-V(H)	No. of Lecture	
Jul	<p>Theory: CC2: A Study of Units for Measuring Concentration of Solute: Moles, Equivalents, Osmoles</p> <p>Principles of Dilution, pH, Buffers Proteolysis of water, pH, acid-base neutralization curves</p> <p>Bonds and Forces in Biomolecules</p> <p>Colloids, Properties, importance Colloids: Classification, properties—optical, electrical, electro kinetic. Biological importance of colloids</p> <p>Surface tension, Specific Gravity Surface tension and Specific Gravity: characteristics, factors influencing and biological applications</p> <p>Viscosity and Resistance Viscosity and Resistance characteristics, factors influencing and biological applications</p> <p>Practical:</p> <p>CC2:</p> <p>Determination of Oncotic Solution Colloidal solution.</p> <p>Determination of Systolic, Diastolic, Pulse and Mean Blood Pressure by noninvasive methods (Auscultatory method).</p>	10	<p>Theory CC6: Origin of the Heartbeat & the Electrical Activity of the heart</p> <p>Introduction</p> <p>Origin & Spread Of Cardiac Excitation</p> <p>Cardiac action potential. Origin and propagation of cardiac impulse. The Electrocardiogram</p> <p>Electrocardiography –the normal electrocardiogram, electrocardiographic leads, vectorial analysis, the vectorcardiogram, the mean electrical axis of heart. The His bundle electrogram. Cardiac Arrhythmias</p> <p>Cardiac Arrhythmias – Normal cardiac rate. Myocardial Infarctions. Cardioplegic solutions. Electrocardiographic Findings in Other Cardiac & Systemic Diseases, hypertrophy and cardiac myopathy</p> <p>Practical</p> <p>CC7: Experiments on superficial (plantar) and deep (knee jerk) reflex Measurement of grip strength</p> <p>Theory SEC1A: Detection of food additives/ adulterants Qualitative tests for Food Adulteration Qualitative test for identifying Food Adulterants in some food samples: Metanil yellow, Rhodamin B, Saccharin.</p>	8	<p>Theory CC11:</p> <p>Introduction Anatomic Considerations The Image-Forming Mechanism (accommodation and visual acuity) The Photoreceptor Mechanism: Genesis of Electrical Responses Visual Pathways and effects of lesions of these pathways</p> <p>Practical:</p> <p>Measurement of blood pressure before and after different grades of exercise.</p> <p>Recording of recovery heart-rate after standard exercise.</p>	8	4

Aug	<p>Theory: Acids, Bases, Buffers and pH Buffer action: Henderson-Hasselbalchequation. Regulation of pH by blood buffers. Determination of pH– Basic concept of indicators, principle of pH meter- hydrogen electrode and glass electrode</p> <p>Flow and Pressure Diffusion and Osmosis: osmotic pressure–laws. Dialysis and Ultracentrifugation Chromatography Electrophoresis Autoradiography</p> <p>Practical: CC2: Determination of enzyme activities (eg. SOD, CAT) Determination of Systolic, Diastolic, Pulse and Mean Blood Pressure by noninvasive methods (Auscultatory method).</p>	<p>12</p> <p>Theory CC6: The Heart as a Pump</p> <p>Introduction</p> <p>Anatomy of the heart. Properties of cardiac muscle. Cardiac Innervation. Stanniusligature. Mechanical Events of the Cardiac Cycle</p> <p>The cardiac cycle- pressure and volume changes. Heart sounds. Murmurs. Cardiac Output</p> <p>6</p> <p>Cardiac output– measurement by application of Fick’s principle and dye dilution method, factors affecting. Starling’s law of heart. Dynamics of Blood & Lymph Flow Introduction Anatomic Considerations Functional morphology of arteries, arterioles, capillaries, venulesand veins, sinusoids. General pattern of circulation and significance of branching of blood vessels. Biophysical Considerations Hemodynamics of blood flow. Arterial & Arteriolar Circulation Capillary Circulation Lymphatic Circulation & Interstitial Fluid Volume Venous Circulation</p> <p>Practical CC7: Reaction time by stick drop test</p> <p>Short term memory test (shape, picture word) TheorySEC1A:Qualitative test for identifying FoodAdulterants in some food samples: Monosodium glutamate, Aluminium foil, Chicory.</p>	<p>9</p> <p>4</p> <p>3</p>	<p>Theory DSE2B: Color Vision Other Aspects of Visual Function Eye Movements Errors in visual process</p> <p>Practical: DSE2B: Determination of Physical Fitness Index by Harvard Step Test (Modified). Determination of VO2max by Queen College step test.</p>	<p>8</p> <p>4</p>
Sept	<p>Theory: CC2: Cell Fractionation and Tracer Techniques Nanoparticles and its application in Physiology Laminar and Streamline Flow Poiseuille- Hagen Formula Laws of Laplace Thermodynamics Thermodynamics: Type of surroundings and systems, First Law–Internal energy, enthalpy. Second Law–Entropy, Free energy change, Endergonic and Exergonic reactions, Reversible and Irreversible processes, Equilibrium constant Physiological steady-state, Living body as a Thermodynamic system</p> <p>Practical: CC2: Practice Determination of enzyme activities (Amylase) Determination of enzyme activities (Transaminase).</p>	<p>12</p> <p>Theory CC6: Cardiovascular regulatory Mechanisms</p> <p>Introduction Local Regulatory Mechanisms Cardiac and vasomotor centers, baroreceptors and chemoreceptors, cardiac and vasomotor reflexes. Substances Secreted by the Endothelium Systemic Regulation by Hormones Systemic Regulation by the Nervous System Cardiovascular homeostasis–neural and chemical control of cardiac functions and blood vessels. Circulation Through special Regions Introduction Cerebral Circulation Anatomic Considerations Cerebrospinal Fluid The Blood-Brain barrier Cerebral Blood Flow Regulation of Cerebral Circulation Brain Metabolism & Oxygen Requirements</p> <p>2</p> <p>Practical CC6:</p>	<p>10</p> <p>2</p>	<p>Theory DSE2B: Importance of regular exercise in health and wellbeing. Basic concept of Bioenergetics, Energy sources during exercise (Phosphagen, Anaerobic system and Aerobic system). Cardio-respiratory responses during different grades of exercise.</p> <p>Practical: DSE2B: Measurement of body fat percentage. Six minute walk test.</p>	<p>8</p> <p>4</p>

			<p>Introduction Preparation of Amphibian Ringer solution Kymographic recording of the movements of perfused heart of toad</p> <p>TheorySEC1A: Qualitative test for identifying FoodAdulterants in some food samples: Bisphenol A and Bisphenol S, Chocolate Brown HT, Margarine</p>	3		
Oct	<p>Theory: CC2: A Study of Enzymes</p> <p>Structures, coenzymes and Prosthetic Groups</p> <p>Classification- EC nomenclature, Concept of apoenzyme, holoenzyme, coenzyme, cofactors and prosthetic group. Mechanism of Enzyme Action</p> <p>Mechanism of enzyme action: Activation energy, Enzyme-substrate complex, Transition state and Products. Models of enzyme-substrate interactions. Specificity of enzymes. Kinetics Concept of initial rate, maximum velocity and steady-state kinetics.</p> <p>Practical: CC2: Practice Determination of enzyme activities (SOD).</p>	10	<p>Theory CC6: Coronary Circulation Splanchnic Circulation Circulation of the skin Placental & Fetal Circulation</p> <p>Practical CC6: Study of the effects of changes in perfusion fluid pressure, changes in temperature.</p> <p>Theory SEC1A: Qualitative test for identifying FoodAdulterants in some foPb, Hg, As, PCB, Dioxin etc in turmeric powder, besan, laddoo</p>	8	<p>Theory DSE2B: Concept of excess post exercise oxygen consumption (EPOC), physiological fatigue and recovery.</p> <p>4 Aerobic work Capacity: Measurement, physiological factors and applications</p> <p>3 Sports injury and its' management.</p> <p>Practical: DSE2B: Determination of endurance time by hand grip dynamometer</p>	6

Nov	<p>Theory: CC2: Michaelisconstant Michaelis-Mentenequation, Graphical representation of hyperbolic kinetics--Lineweaver-Burk plot. Significance of Km and Vmax.. Modulation of Enzyme Activities</p> <p>Competitive, non-competitive and uncompetitive inhibitions. Regulation of enzyme activities covalent modifications, allosteric modifications--Sigmoid kinetics and Hill equation: K-and M-series, Feed-back inhibition. Rate-limiting enzymes Factors controlling Enzyme Activities</p> <p>Factors influencing enzyme-catalyzed reactions: substrate concentration, enzyme concentration, Max pH, temperature.</p> <p>Practical: Practice Determination of enzyme activities (CAT)</p>	10	<p>Theory CC6: Cardiovascular Homeostasis in Health & Disease Introduction Compensation for Gravitational Effects Exercise Inflammation & Wound Healing Shock Cardiovascular adjustment after haemorrhage. Hypovolemic and hypervolemic shock. RTI and atherosclerosis. Hypertension The pulse – arterial and venous. Blood pressure– its measurement and factors affecting. Heart Failure, stroke</p> <p>2 Practical CC6: Study of the effects of calcium and potassium ion concentration on the movement of heart. Study of the effects of acetylcholine and adrenaline concentration on the movement of heart.</p> <p>TheorySEC1A:Qualitative test for identifying FoodAdulterants in some foPb, Hg, As, PCB, Dioxin etc in , noodles, chocolate and amriti.</p>	8	<p>Theory DSE2B: Training: Principles of physical training, Training to improve aerobic and anaerobic power. Effect of overtraining and detraining. Nutritional supplements and ergogenic aids. Basic idea sports rehabilitation and sports medicine.</p> <p>Practical: DSE2B: Determination of endurance time by hand grip dynamometer</p>	8
	<p>Theory: CC2: Isoenzymes, Allosteric Enzymes Pro-enzymes</p>	4	<p>Theory CC6: Revision</p> <p>Practical</p>	4	<p>Theory DSE2B: Revision</p> <p>Practical</p>	4

Dce	Ribozymes, Abzymes Concept of Rate Limiting Enzymes Practical Practice Examination	2	Practice TheorySEC1A: Revision Examination	3	Practice Examination	
Jan	Sem-II(H) Theory CC4: Carbohydrates a. Classification of Carbohydrates Definition and classification of Carbohydrates b. Structure of Carbohydrates Cyclic structures- Pyranose and furanose forms, structure of disaccharides and polysaccharides Practical: CC4: Qualitative tests for the identification of physiologically important substances: Hydrochloric acid, lactic Acid,	6 4	Sem-IV(H) Theory CC8: Introduction Energy metabolism Carbohydrate metabolism Glycolysis, R-L cycle Detail, TCA cycle. Gluconeogenesis Cori cycle, Glucose Alanine cycle. Anaplerotic reactions and Amphibolic nature of TCA cycle. Pentose Phosphate Pathway. Glycogenesis and Glycogenolysis Practical: CC8: Quantitative estimation of glucose and sucrose by Benedict's method. Theory SEC2B: Preparation of blood smear and identification of blood cells.	8 4 2	Sem-VI(H) Theory DSE3A: Constituents of food and their significance. Basal metabolic rate -factors, determination by Benedict-Roth apparatus. Respiratory quotient. Specific dynamic action. Basic concept of energy and units. Calorific value of foods. Body calorie requirements – adult consumption unit Practical: DSE3A: Diet Survey (Field Study Record) Diet survey report (hand-written) of a family (as per ICMR specification): Each student has to submit a report on his/her own family.	8 4

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<p>Feb</p>	<p>Theory CC4: c. Properties of Carbohydrates Stereoisomerism, optical isomerism, optical activity, epimerism, anomerism, mutarotation and its mechanism. Chemical reactions of monosaccharides (Glucose & Fructose) – Reactions with concentrated mineral acids, alkali, phenyl hydrazine and their biochemical importance d. Function of Carbohydrates Derivatives of monosaccharides -- Amino sugars, deoxysugars, sugar alcohols, sugar acids, sugar esters, their biochemical and physiological importance.</p> <p>Practical: CC4: Qualitative tests for the identification of physiologically important substances: Uric Acid, Glucose</p>	<p>8</p> <p>4</p>	<p>Theory CC 8: Protein metabolism Amino acids, Amino acid pool. Deamination, transamination, amination and decarboxylation.</p> <p>Synthesis of Urea and Nitric oxide.</p> <p>Basic idea of glucogenic and ketogenic amino acids. Metabolism of glycine, sulfur-containing amino acids, tryptophan and phenylalanine</p> <p>Fat and cholesterol metabolism β-oxidation and biosynthesis of saturated and monounsaturated fatty acids. Carnitine shuttle.</p> <p>Practical: CC8: Quantitative estimation of amino nitrogen (Sorensen’s formol titration method [percentage as well as total quantity to be done]).</p> <p>Theory SEC2B: Determination of hematocrit, MCV, MCH, MCHC</p>	<p>8</p> <p>3</p> <p>2</p>	<p>Theory DSE3A: Dietary requirements of carbohydrate, protein, lipid and other nutrients.</p> <p>Balanced diet and principles of formulation of balanced diets for growing child, adult man and woman, pregnant woman and lactating woman.</p> <p>Nitrogen balance, essential amino acids, biological value of proteins.</p> <p>Supplementary value of protein.</p> <p>Protein efficiency ratio and net protein utilization of dietary proteins.</p> <p>Practical: DSE3A: Practice Diet Survey (Field Study Record) Diet survey report (hand-written) of a family (as per ICMR specification): Each student has to submit a report on his/her own family.</p>	<p>10</p> <p>2</p>
<p>Mar</p>	<p>Theory CC4: Proteins Classification of Proteins Definition and classification of proteins Classification, Structure, Nomenclature of proteins and amino acids. Structure of Proteins Structure and properties of peptide bonds-- Phi and Psi angles. Different levels of protein structure-- Primary, Secondary (α-helix and β-pleated sheet), Tertiary and Quaternary. Forces stabilizing the structures. Properties of Proteins Protonic equilibrium of Amino acids– Zwitterions, Isoelectric point, titration curve of amino acids. Reactions with ninhydrin and formaldehyde. Reactions with Sanger’s and Edman’s reagent. Biuret reaction . Denaturation and Renaturation.</p> <p>Practical: CC4: Practice</p>	<p>10</p> <p>2</p>	<p>Theory CC8: Metabolism of Triglycerides.</p> <p>Biosynthesis of Lecithin, Cephalin and Cholesterol. Metabolism of Adipose Tissue. Role of lipoproteins in transport and storage of lipids.</p> <p>Formation of Reactive Oxygen Species (ROSs) and the role of Catalase, Superoxide Dismutase, Glutathione Peroxidase and Glutathione Reductase in combating oxidative stress– role of vitamins.</p> <p>Practical: CC8: Estimation of percentage quantity of lactose in milk by Benedict’s method.</p> <p>Theory SEC2B: Determination of bleeding time, clotting time</p>	<p>6</p> <p>4</p> <p>2</p>	<p>Theory DSE3A: Dietary fibres.</p> <p>Vitamins</p>	<p>8</p>

Apr	<p>Theory CC4: Functions of Proteins, Physiological importance of proteins.</p> <p>DNA and RNAs Structure of DNA and RNA Types of DNA and RNA Functions of DNA and RNA</p> <p>Practical: CC4: Qualitative tests for the identification of physiologically important substances: Galactose, Fructose</p>	<p>6</p> <p>4</p>	<p>Theory CC8: Integration of carbohydrate, fat and protein metabolism Biological oxidation– Redox Potential. Mitochondrial Electron Transport Chain. Oxidative Phosphorylation–Inhibitors and uncouplers.</p> <p>Practical: CC8: Practice Quantitative estimation of glucose and sucrose by Benedict’s method.</p> <p>Theory SEC2B: Measurement of hemoglobin in blood. Preparation of serum</p>	<p>4</p> <p>4</p> <p>2</p>	<p>Theory DSE3A: Principle of diet survey.</p> <p>Composition and nutritional value of common food stuffs.</p> <p>Physiology of starvation and obesity.</p>	<p>8</p>
May	<p>Theory CC4: Properties of fat and fatty acids Hydrolysis, Saponification, Saponification number, Iodine number, Acetylation- Acetyl number, Hydrogenation, Rancidity-Acid number, Reichert-Meissl number. Cis-trans isomerism. Eicosanoids, Phospholipids, Glycolipids, Sphingolipids, Cholesterol & its ester- their structure and physiological importance. Protonic equilibria of Amino acids–Zwitterions, Isoelectric point, titration curve of amino acids. Reactions with ninhydrin and formaldehyde. Reactions with Sanger’s and Edman’s reagent. Biuret reaction. Denaturation and Renaturation.</p> <p>Practical: CC4: Practice</p>	<p>10</p> <p>2</p>	<p>Theory CC8: Nutrition – BMR, RQ, RDA, SDA, NPU, Biological value of proteins, vitamins and minerals. Basal metabolic rate-factors, determination by Benedict-Roth apparatus.</p> <p>Practical: CC8: Practice Quantitative estimation of amino nitrogen (Sorensen’s formol titration method [percentage as well as total quantity to be done]).</p> <p>Theory SEC2B: Estimation of SGOT and SGPT.</p>	<p>6</p> <p>4</p> <p>2</p>	<p>Theory DSE4: Sources and physiological significances of vitamins and minerals.</p> <p>Space nutrition.</p>	<p>8</p>
June	<p>Theory CC4: Functions of Proteins and lipids Physiological importance of proteins and lipids</p> <p>Revision</p> <p>Practical Practice</p> <p>Examination</p>	<p>4</p> <p>4</p>	<p>Theory CC8: Biologicalvalue of proteins – measurement and factors affecting, Proteins sparsers. Supplementary value of protein. Protein efficiency ratio and net protein utilization of dietary proteins. Dietary fibres</p> <p>Practical Practice</p> <p>Theory SEC2B: Revision</p> <p>Examination</p>	<p>4</p> <p>4</p> <p>2</p>	<p>Theory DSE3A: Revision</p> <p>Practical Practice</p> <p>Examination</p>	<p>4</p> <p>4</p>

DEPARTMENT OF PHYSIOLOGY

TEACHING PLAN

DR. AMAL KUMAR PARI

Physiology (General/generic) (July 2018–June 2019)

Month	Sem-I (G/GE)	No. of lecture
July	Theory: CC1A: Lipids: Definition and classification. Fatty acids Classification.	2
Aug	Theory: CC1A: Properties of Fat and Fatty acids—Hydrolysis, Saponification, Saponification number, Iodine number, Hydrogenation, Rancidity-Acid number.	3
Sep	Theory: CC1A: Phospholipids, Cholesterol & its ester-physiological importance.	2
Oct	Theory: CC1A: Amino acids, Peptides and Proteins	2
Nov	Theory: CC1A: Classification and structure. Structure of peptide bonds.	2
Dec	Theory: CC1A: Revision Examination	2

Month	Sem-II (G/GE)	No. of lecture	Sem-VI (G/GE)	No. of lecture
Jan	Theory: CC1B: Basic constituents of food and their nutritional significance. Vitamins: Definition, classification, functions, deficiency symptoms and their daily requirement. Hypervitaminosis	3	Theory: SEC1A: Basic idea of doping	2
Feb	Theory: CC1B: Mineral metabolism- Ca, P, Fe	3	Theory: SEC1A: EMG	1
March	Theory: CC1B: BMR: Definition, factors affecting, determination by Benedict –Roth apparatus. Respiratory quotient: definition, factors affecting and significance	3	Theory: SEC1A: Physical fitness index-Harvard step test	1
April	Theory: CC1B:	2	Theory: SEC1A:	2

	Biological value of proteins, essential and non-essential amino acids, nitrogen equilibrium Minimum protein requirement: positive and negative nitrogen balance.		ECG- Normal waves and leads	
May	Theory: CC1B: SDA: definition and importance	2	Theory: SEC1A: Anthropometry and its uses	1
June	Theory: CC1B: Revision Examination	2	Theory: SEC1A: Revision Examination	2



DEPARTMENT OF PHYSIOLOGY

TEACHING PLAN

NUPUR PAUL

Physiology (Honours) (July 2018–June 2019)

Month	Sem-I(H)	No. of Lecture	Sem-III(H)	No. of Lecture	Sem-V(H)	No. of Lecture
Jul	Theory: CC1: Organ systems, tissues and cells	3	Theory CC5: Introduction Blood Formed elements of blood– origin, formation, functions and fate Blood volume –normal values, regulation and determination by dye and radioisotope methods. Practical CC5: Preparation and staining of blood film with Leishman’s stain. Identification of the blood corpuscles.	6 4	Theory DSE2A: Genesis and concept of ergonomics Importance of ergonomics in occupational health and well-being.	4
Aug	Theory: CC1: Functional morphology of cells Microscopic structure and functions of eukaryotic endoplasmic reticuli, ribosome	3	Theory CC5: Bone Marrow ,White Blood Cell Immune Mechanisms, Platelets Practical CC5: Differential count of WBC. Total count of RBC and WBC. Bleeding time and clotting time Hemoglobin estimation	4 6	Theory DSE2A: Classification of Physiological work load. Concept of work rest cycle. Physical work environment Thermal environment, its’ effect, Heat stress indices Noise and vibration, its’ effect on workers. Occupational deafness	4

Sept	Theory: CC1: Microscopic structure and functions of ribosome, golgi bodies, mitochondria	3	Theory CC5: Red Blood Cells Haemoglobin– Structure, reactions, biosynthesis and catabolism. Foetalhaemoglobin. Abnormal haemoglobins- Sickle-cell anemia and Thalassemia. Different types of anaemiaand their causes Practical CC5: Preparation of haemin crystals Preparation and staining of bone marrow. Measurement of diameter of megakaryocyte.	6 4	Theory DSE2A: Illumination level and its’ effect on visual performances, Ergonomic principles of control of Physical hazards.	3
Oct	Theory: CC1: Cell cycle	3	Theory CC5: Blood Types Blood group – ABO and Rh. Erythroblastosisfoetalis. Blood transfusion and its hazards. Practical CC5: 10. Reticulocyte staining 11. .Blood group determination.	4 4	Theory .DSE2A: Static anthropometry, Application of anthropometric data in design. User interface and control display compatibility.	3
Nov	Theory: CC1: Revision	3	Theory CC5: Plasma, Hemostasis Plasmaproteins– normal values, origin and functions. Hemostasis– factors, mechanism, anticoagulants, procoagulants. Disorders of hemostasis. Hemophilia, thrombosis and embolism. Lymph Lymph and tissue fluids– formation, circulation, functions and fate. Lymphatic organs- histological structures and functions of lymph gland and spleen.	6	Theory DSE2A: Prevention of accidents, concept of Industrial safety. Occupational Diseases: pneumoconiosis, asbestosis, silicosis and work-related musculoskeletal disorders	4
Dce	Theory: CC1: Revision Examination	3	Theory CC5: Clinical implications of blood and blood related disorders Revision Examination	4	Theory DSE2A: Revision Examination	3
	Sem-II(H)		Sem-IV(H)		Sem-VI(H)	

Jan	Theory CC3: Excitable Tissues: Muscle Introduction Skeletal Muscle Morphology Microscopic and electron microscopic structure of skeletal muscles. The sarco tubular system. Red and white striated muscle fibers. Muscle groups: antagonists and agonists. Muscle proteins.	5	Theory CC9: . Digestion & Absorption Introduction Anatomy and histology of alimentary canal, Deglutition. Movements of alimentary canal and their regulations Absorption of Water & Electrolytes Practical: CC10: Measurement of peak expiratory flow rate Measurement of oxygen saturation by pulse oxymeter before and after exercise	3	Theory CC14: Renal Functions and Malnutrition: Introduction Anatomy of kidney. Histology of Nephron. Function of Malpighian corpuscles and renal tubule, .	4
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Feb	Theory CC3: Electrical phenomena and Ionic Fluxes Chemical, thermal and electrical changes in skeletal muscle during contraction and relaxation. Electromyography.	4	Theory CC9: Absorption of Vitamins & Minerals Regulation of Gastrointestinal Function Introduction Digestive glands – histological structures of salivary glands, pancreas and liver. Practical: CC10: Measurement of forced expiratory volume (FEV) in first second	3 2	Theory CC14: counter-current mechanism Formation of urine –glomerular function and tubular functions. Counter -current multiplier and exchanger.	4
Mar	Theory CC3: . Contractile Responses Mechanism of skeletal muscle contraction and relaxation: Excitation-contraction coupling. Dihydropyridinereceptors & Ryanodine receptors.	4	Theory CC9: General Considerations Composition, functions and regulation of the secretion of salivary, gastric, pancreatic and intestinal juices and bile. Synthesis of Bile acids. Enterohepatic circulation, Feces and defecation. GALT, MALT. Basic concepts of Peptic Ulcer, Jaundice and Gall-stones Cholelithiasis	3	Theory CC14: Formation of hypertonic urine. Water Excretion Renal regulation of osmolarity and volume of blood fluids	3
Apr	Theory CC3: Energy sources and Metabolism Mechanical components of muscle. Isometric and isotonic contractions– muscle length, tension and velocity relationships.	4	Theory CC9: Gastrointestinal hormones Mouth & Esophagus Stomach Exocrine Portion of the Pancreas Liver & Biliary System	3	Theory DSE4A: Acidification of the Urine & Bicarbonate Excretion Renal regulation of acid-base balance, acidification of urine	3
May	Theory CC3: Properties of Muscle in the intact Organism Properties of skeletal muscle: excitability, contractility, all or none law, summation of stimuli, summation of contractions, effects of repeated stimuli, genesis of tetanus, onset of fatigue, refractory period, tonicity, conductivity, extensibility and elasticity. Optimal load, optimal length of fibers.	5	Theory CC9: Small Intestine Colon	3	Theory DSE4A: Regulation of Na ⁺ & Cl ⁻ Excretion	2
June	Theory CC3: Revision Examination	3	Theory CC9: Revision Examination	3	Theory CC14: Revision Examination	3

DEPARTMENT OF PHYSIOLOGY

TEACHING PLAN

NUPUR PAUL

Physiology (General/generic) (July 2018–June 2019)

Month	Sem-I(G/GE)	No. of Lectures	Sem-III(G/GE)	No. of Lectures	Sem-V(G/GE)	No. of Lectures
Jul	<p>Theory: CCIA: Physiological importance of the following physical processes: Diffusion Osmosis</p> <p>Practical: CCIA: Identification of permanent slides: Bone, Lung, Trachea, Spleen, Lymph gland, Liver, Salivary gland, Pancreas, Adrenal gland, Thyroid gland,</p>	4 6	<p>Theory: CCIC: Anatomy and histology of the respiratory passage and organs.</p> <p>Practical: CCIC: Leishman's staining of human blood film and identification of different types of blood corpuscles.</p>	3 4	<p>Theory: DSE1A: Different types of muscle and their structure. Red and white muscle.</p> <p>Practical: DSE1A: Use of kymograph</p>	8 4
Aug	<p>Theory: CCIA: Physiological importance of the following physical processes: Dialysis</p> <p>Practical: CCIA: Identification of permanent slide: Spinal cord, Cerebellum, Cerebral cortex, Kidney, Skin, Testis, Ovary, Tongue, Oesophagus, Stomach, Small intestine, Large intestine.</p>	3 6	<p>Theory: CCIC: Role of respiratory muscles in breathing. Artificial respiration.</p> <p>Practical: CCIC: Preparation of Haemincrystals.</p>	4 4	<p>Theory: DSE1A: Muscular contraction: structural, mechanical and chemical changes in skeletal muscle during contraction and relaxation.</p> <p>Practical: DSE1A: Recording of pneumography</p>	8 4
Sept	<p>Theory: CCIA: Physiological importance of the following physical processes: Ultrafiltration</p> <p>Practical: CCIA: Examination and staining of fresh tissues (other than blood) squamous, ciliated and columnar epithelium,</p>	3 6	<p>Theory: CCIC: Significance of physiological and anatomical deadspace. Lung volumes and capacities.</p> <p>Practical: CCIC: Leishman's staining of human blood film and identification of different types of blood corpuscles.</p>	3 4	<p>Theory: DSE1A: Isotonic and isometric contractions.</p> <p>Practical: DSE1A: Practice Use of kymograph</p>	4 4
Oct	<p>Theory: CCIA: Physiological importance of the following physical processes: Surface tension</p>	3	<p>Theory: CCIC: Exchange of respiratory gases between lung and blood and between blood and</p>	4	<p>Theory: DSE1A: Properties of muscle: all or none law, beneficial effect, summation</p>	6

	Practical: CC1A: Examination and staining of fresh tissues (other than blood) skeletal muscle, cardiac muscle by methylene blue stain.	4	tissues. Transport of oxygen and carbon dioxide in blood. Practical: CC1C: Preparation of Haemincrystals.	4	ation.refractory period, tetanus, fatigue. Practical: DSE1A: Practice	2
Nov	Theory: CC1A: Physiological importance of the following physical processes: Adsorption Absorption	4	Theory CC1C: Regulation of respiration- neural and chemical. Hypoxia.	4	Theory: DSE1A: A brief idea about the muscle spindle.	3
	Practical: CC1A: Staining of adipose tissue by Sudan III or IV.	4	Practical: CC1C: Leishman's staining of human blood film and identification of different types of blood corpuscles.	4	Practical: DSE1A: Practice	2
Dec	Theory: CC1A: Revision	3	Theory CC1A: Revision	3	Theory: DSE1A Revision	3
	Practical: CC1A: Practice Examination	2	Examination		Examination	
	Sem-II(G/GE)		Sem-IV(G/GE)		Sem-VI(G/GE)	
Jan	Theory: CC1B: Depot fat. Beta oxidation of saturated fatty acid	3	Theory: CC1D: Skin and regulation of body temperature Structure and functions of skin	3	Theory: SEC4B: Environment — its physiological aspects.	4
	Practical: CC1B: Quantitative Experiments: Quantitative estimation of glucose by Benedict's method.	4	Practical: CC1D: Identification of normal constitution of urine-Chloride	4		
Feb	Theory CC1B: Ketone bodies formation and significance.	3	Theory: CC1D: Insensible and sensible perspiration	4	Theory: — — SEC4B: Effect of extreme temperature on humans.	4
	Practical: CC1B: Quantitative estimation of amino-nitrogen by Sorenson's formol titration method. Percentage and total quantity to be done.	4	Practical: CC1D: Identification of normal constitution of urine-Sulphate	4		
Mar	Theory: CC1B: Deamination, Transamination. Amino acid pool	3	Theory: CC1D: Regulation of body temperature- physical and physiological process involved in it.	4	Theory: SEC4B: Hypobaric environment- effects on physiological system, acclimatization	4
	Practical: CC1B: Quantitative estimation of glucose by Benedict's method	4	Practical: CC1D: Identification of normal constitution of urine-Phosphate	4		
	Theory: CC1B: fate and functions of amino acids in the	3	Theory CC1D: Revision Structure and functions of skin	3	Theory: SEC4B: Hyperbaric conditions and Caisson disease.	4

Apr	<p>body.</p> <p>Practical: CC1B: Quantitative estimation of amino-nitrogen by Sorensen's formol titration method. Percentage and total quantity to be done.</p>	4	<p>Practical: CC1D: Identification of normal constitution of urine-Creatinine</p>	4		
May	<p>Theory: CC1B: Formation of urea and its importance.</p> <p>Practical: CC1B: Practice</p>	3	<p>Theory: CC1D: Revision Insensible and sensible perspiration</p> <p>Practical: CC1D: Identification of normal constitution of urine-Urea</p>	3	<p>Theory: SEC4B: Brief idea of cyanosis, dyspnea, hyperpnoea, apnea, asphyxia.</p>	4
June	<p>Theory: CC1B: Revision</p> <p>Practical: CC1B: Practice</p> <p>Examination</p>	4	<p>Theory: CC1D: Revision</p> <p>Practical: CC1D: Practice</p> <p>Examination</p>	4	<p>Theory: SEC4B: Revision</p> <p>Examination</p>	4


 Head
 Department of Physiology
 Sun Vihar College
 Sun, Birbhum

DEPARTMENT OF PHYSIOLOGY

TEACHING PLAN

HAIMANTI CHATTERJEE

Physiology (Honours) (July 2018–June 2019)

Month	Sem-I(H)	No. of Lectures	Sem-III(H)	No. of Lectures	Sem-V(H)	No. of Lectures
Jul	<p>Theory: CC1: Introduction Body fluid components Organ systems, tissues and cells</p> <p>Functional morphology of cells Plasma membrane and subcellular membranes. Microscopic structure and functions of eukaryotic endoplasmic reticuli, ribosome, golgi bodies.</p>	4	<p>Theory CC7:</p> <p>Reflexes: a. Introduction b. Monosynaptic Reflexes: The Stretch Reflex c. Polysynaptic Reflexes: The Withdrawal Reflex d. General Properties of Reflexes</p> <p>Cutaneous, Deep and Visceral Sensation Introduction Ascending and descending tracts: origin, courses, termination and functions. Lower and upper motor neurones. Functions of the spinal cord with special reference to functional changes following hemisection and complete section of spinal cord. Brown-Sequard syndrome, Spinal animal.</p>	10	<p>Theory CC12:</p> <p>The Adrenal Medulla & Adrenal Cortex a. Introduction b. Adrenal Morphology c. Adrenal Medulla</p> <p>I. Structure & Function of Medullary Hormones II. Regulation of Adrenal Medullary Secretion</p> <p>d. Adrenal Cortex I. Structure & Biosynthesis of Adrenocortical Hormones II. Effects of Adrenal Androgens & Estrogens III. Physiologic Effects of Glucocorticoids IV. Pharmacologic & Pathologic Effects of Glucocorticoids V. Regulation of Glucocorticoid Secretion VI. Effects of Mineralocorticoids</p> <p>DSE1A: BIOLOGICAL STATISTICS</p> <p>Scope of statistics – Principles of statistical analysis of biological data. Basic concepts – variable, parameter, statistics. Sampling. Presentation of data-frequency distribution, frequency polygon, histogram, bar diagram and pie diagram.</p>	3 5 4

<p>Aug</p>	<p>Theory: CC1: Microscopic structure and function of mitochondria, lysosomes, peroxisomes.</p>	<p>4</p> <p>Theory CC7: Basal Ganglia Cerebellum Movement disorders Neural Basis of Instinctual Behaviour and Emotions : a. Introduction b. Anatomic Considerations c. Limbic Functions Limbic system: structure, connections and functions. Physiology of emotion. Arousal Mechanism, Sleep and the Electrical Activity of the Brain a. Introduction b. The Reticular Formation & the Reticular Activating System Reticular formation: organization, connection and functions of ascending and descending reticular formation. Physiological basis of sleep and wakefulness The Thalamus & the Cerebral Cortex Evoked Cortical Potentials The Electroencephalogram Physiological Basis of the EEG, Consciousness, & Sleep Interpretation of abnormal EEG pattern</p>	<p>10</p> <p>Theory CC12: The Adrenal Medulla & Adrenal Cortex VII. Regulation of Aldosterone Secretion VIII. Summary of the effects of Adrenocortical Hyper & Hypofunction in Humans Hormonal Control of Calcium Metabolism & the Physiology of Bone a. Introduction b. Calcium & Phosphate Metabolism c. Bone Physiology d. Vitamin D & the Hydroxycholecalciferols e. The Parathyroid Glands f. Calcitonin DSE1A: BIOLOGICAL STATISTICS Parameters Different classes of statistics- mean, median, mode, mean deviation, variance, standard deviation, standard error of mean.</p>	<p>3</p> <p>6</p> <p>2</p> <p>4</p>
<p>Sept</p>	<p>Theory: CC1: Cytoskeletal elements and centrosomes. Transports across cell membrane: Ionpores, ion pumps, ion channels ionophores. Passive transport. Facilitated diffusion, uniport, symport, antiport. Active transport. Intercellular communication : Basic idea of tight junctions, gap junctions and cell adhesion molecules</p>	<p>4</p> <p>Theory CC7: Pain production, perception and regulation. Referred pain. Pathways Touch Proprioception Temperature Pain Other Sensations Control of Posture and Movement : Introduction General Principles Corticospinal & Corticobulbar System Anatomy & Function Posture and its regulation Decerebrate rigidity, Decorticate rigidity, Postural reflexes and regulation of Posture Introduction Anatomic Organization of Autonomic Outflow Chemical Transmission at autonomic Junctions Responses of Effector Organs to Autonomic Nerve Impulses Cholinergic and Adrenergic Discharge</p>	<p>8</p> <p>Theory CC12: g. Effects of Other Hormones & Humoral Agents on Calcium Metabolism Endocrine Functions of the Kidneys, Heart, & Pineal Gland a. Introduction b. The Renin-Angiotensin System c. Erythropoietin d. The Endocrine Function of the Heart: Atrial Natriuretic Peptide e. Pineal Gland f. Human chronobiology, biological rhythms; basic concepts and implications DSE1A: BIOLOGICAL STATISTICS Standard score. Degrees of freedom</p>	<p>2</p> <p>5</p> <p>2</p> <p>2</p> <p>3</p> <p>2</p>

Oct	Theory: CC1: Capillary Wall Homeostasis Cell cycle	4	Theory CC7: Central Regulation of Visceral Function a. Introduction b. Medulla Oblongata c. Hypothalamus i. Anatomic Considerations ii. Hypothalamic Function iii. Relation to Autonomic Function iv. Relation to Sleep v. Relation to Cyclic Phenomena vi. Hunger vii. Thirst viii. Control of Posterior Pituitary Secretion ix. Control of Anterior pituitary Secretion x. Temperature Regulation, fever	10	Theory DSE1A: Probability. Normal distribution. Student's t-distribution Practice Testing of hypothesis - Null hypothesis, errors of inference Practice	8 2 4 2
Nov	Theory: CC1: Cell division a. Mitosis b. Meiosis	4	Theory CC7: Neural Basis of Instinctual Behaviour and Emotions a. Introduction b. Anatomic Considerations c. Limbic Functions Limbic system: structure, connections and functions. Physiology of emotion. d. Sexual Behavior e. Fear & Rage f. Motivation Basal Ganglia Cerebellum Movement disorders	10	Theory DSE1A: levels of significance, students' t-test and z score for significance of difference. Practice Distribution-free test - Chi-square test Practice	6 4 4 2

Dec	Theory: CC1: Aging Revision Examination	4 Theory CC7: Speech and Aphasia. Asymmetrical organization of certain cognitive functions-split brain d. Functions of the Neocortex Electrophysiology of brain: spontaneous electrical activity of brain, EEG and ECoG, evoked potential, DC potential. Isolated cortex. e. Disorders relating learning and memory Examination	8 Theory DSE1A: Revision Practice Class test Examination	6 4 4
Jan	Sem-II(H) Theory CC3: Excitable Tissues: Nerve Introduction Nerve cells Structure, classification and functions of neurons, Cytoskeletal elements and axoplasmic flow. Excitation and Conduction Measurement of electrical events Propagation of nerve impulse in different types of nerve fibers. Ionic basis of excitation and conduction The resting membrane potential, action potential, electrotonic potentials, current of injury and compound action potential Practical: CC3: Isolation and staining of staining of nerve fibers with node (s) of Ranvier (AgNO ₃) and muscle fiber (H and E). Preparation of Sciatic nerve innervated Gastrocnemius muscle of toad.	Sem-IV(H) Theory CC10: Pulmonary Function Introduction Properties of Gases Anatomy of the Lungs Mechanics of breathing Gas Exchange in the lungs Practical: CC9: Kymographic recording of normal movements of rat's intestine in Dale's apparatus	Sem-VI(H) Theory CC13 4 The Female Reproductive system Histology of ovary, Oogenesis, folliculogenesis and ovulation. 2 The Menstrual Cycle Formation, functions of corpus luteum and leuteolysis, — — — —	6 2

Feb	<p>Theory CC3: Properties of mixed nerves Properties of nerve fibers: excitability, conductivity, all or none law, accommodation, adaptation, summation, refractory period, Indefatigability, Chronaxie&rheobase and utilization time. Injury to peripheral nerves– degeneration and regeneration in nerve fiber, changes in the nerve cell body, trans neuronal degeneration, changes in receptor and motor end-plates, denervation hypersensitivity. Thermal changes of nerve during activity Nerve fibre types and function</p> <p>Neurotropins Nerve growth factors and Neurotropins</p> <p>Glia Structure, classification and functions of neuroglia cells</p> <p>Practical: CC3: Study of Kymograph, Induction coil, Key and other instruments used to study mechanical responses of skeletal muscle.</p> <p>Kymographic recording of mechanical responses of Gastrocnemius muscle to a single stimulus and two successive stimuli</p>	6	<p>Theory CC10: Pulmonary Circulation Other Functions of the Respiratory System Gas Transport Between the Lungs & the Tissues Introduction Oxygen Transport Carbon Dioxide Transport</p> <p>Practical: CC9: Effects of hypoxia on normal intestinal movements</p>	4	<p>Theory CC13: Menstrual cycle and its regulation b. Ovarian Hormones c. Control of Ovarian Function d. Abnormalities of Ovarian Function</p>	10
March	<p>Theory CC3: Cardiac Muscle Morphology Microscopic and electron microscopic structure of cardiac muscles. Electrical Properties Mechanical Properties Metabolism Neurotransmitters, co transmittersand neuromodulators Pacemaker Tissue Smooth Muscle Morphology Microscopic and electron microscopic structure of smooth muscles. Single-unit and multi-unit smooth muscle Visceral smooth Muscle Multi- unit Smooth Muscle Practical: CC3: Kymographic recording of the effects of variations of temperature on single muscle twitch.</p>	8	<p>Theory CC10: Respiratory acidosis and alkalosis Regulation of Respiration Introduction Neural control of Breathing Chemical Control of Breathing Nonchemical Influences on Respiration</p> <p>Practical: CC9: Effects of acetylcholin on normal intestinal movements</p>	6	<p>Theory CC13: Abnormalities in menstrual cycle. Onset of menopause and post-menopausal changes, Postmenopausal syndromes.</p>	2
Apr	<p>Theory CC3: Synaptic and Junctional Transmission Introduction Synaptic Transmission Functional Anatomy Synapses: types, structure, synaptic transmission of the impulse., Electrical Events at Synapses synaptic potentials Inhibition and Facilitation at Synapses Chemical Transmission at Synaptic</p>	6	<p>Theory CC10: Respiratory Adjustments in Health & Disease Introduction Effects of Exercise Other Forms of Hypoxia Oxygen Treatment</p> <p>Practical: CC9: Effects of adrenaline on normal</p>	2	<p>Theory DSE3B: Genes - definition. DNA-structure, DNA replication, Transcription of RNA in prokaryotes, Genetic code –</p>	5

	Activity Practical: CC3: Kymographic recording of the effects of variations of load (after-load) on single muscle twitch. Calculation of work done by the muscle.	2	intestinal movements		properties and wobble hypothesis,	
May	Theory CC4: Principal neurotransmitter Systems Synaptic Plasticity and learning Neuromuscular Transmission Neuromuscular Junction The neuromuscular junction : structure, transmission, end-plate potential, MEPP and post-tetanic potentiation. Motor unit and Motor point. Denervation Hypersensitivity Initiation of Impulses in Sense Organs Introduction Sense Organs and Receptors Classification of general and special senses. Receptors as biological transducers. General concept of ionotropic and metabotropic receptors. Structure, subtypes and functions of nicotinic and muscarinic acetylcholine receptors. Adrenoceptors, glutamate receptors (NMDA and AMPA receptors), GABA, opiate, serotonin, dopamine and histamine receptors.	6	Theory CC10: Hypercapnia & Hypocapnia Other Respiratory Abnormalities Effects of Increased Barometric Pressure Artificial Respiration . Practical: CC9: Practice Effects of acetylcholine and adrenaline on normal intestinal movements	4 4	Theory DSE3B: translation in prokaryotes, regulation of gene expression – operon concept: lac operon, gene mutation DNA repairing processes. Basic idea of Recombinant DNA technology and its applications, Polymerase chain reaction (PCR) - basic concepts.	8 8
June	Theory CC3: The Senses Electrical and Ionic Events in Receptors Muller’s law of specific nerve energies. Weber-Fechner law, Steven’s power law. Sensory transduction in Pacinian corpuscle. Adaptation of receptors – phasic and tonic adaptations. “Coding” of Sensory Information CC4T Revision Class test Examination	2 2	Theory CC10: Revision Practice Examination	2 2	Theory CC13: Revision Class test Examination	4 2

DEPARTMENT OF PHYSIOLOGY

TEACHING PLAN

HAIMANTI CHATTERJEE
Physiology (General) (July 2018–June 2019)

Month	Sem-I(G)	No. of Lectures	Sem-III(G)	No. of Lectures	Sem-V(G)	No. of Lectures
Jul	<p>Theory: CC 1A: Units of Human System Structure and functions of plasma membrane, nucleus and different cell organelles.</p>	4	<p>Theory CC 1C: Blood and Body Fluids Blood: composition and functions. Plasma proteins: origin and functions, Plasmapheresis. Bone marrow. Formed elements of blood-their morphology and functions.</p> <p>Practical: Haematological experiments II: DC of WBC, estimation of haemoglobin</p>	4	<p>Theory SEC III: IMMUNOLOGY Elementary knowledge of innate and acquired immunity.</p> <p>Practical: Field Study Population study of physiological parameters such as height, weight, heart-rate, blood pressure</p>	4
Aug	<p>Theory: CC 1A: Endoplasmic reticulum, Golgi bodies, Mitochondria, Lysosome and Peroxisome.</p>	4	<p>Theory CC 1C: Erythropoiesis and leucopoiesis. Haemoglobin: different types of compounds and derivatives. Functions and estimation of haemoglobin. Abnormal haemoglobins-thalassaemia and sickle-cell anaemia.</p> <p>Practical CC 1C: Blood group determination, Bleeding time and coagulation time.</p>	4	<p>Theory SEC III: Humoral and cell mediated immunity</p> <p>Practical: Field Study: Population study of physiological parameters such as height, weight, heart-rate, blood pressure</p>	4
Sept	<p>Theory: CC 1A: Structure, function and classification of Epithelial, Connective, Muscular and Nervous tissues.</p>	4	<p>Theory CC 1C: Blood volume and its determination (dye method and Radioisotope method) and regulation. Coagulation of blood: mechanism, factors affecting, procoagulants, anticoagulants, and disorders of coagulation.</p>	4	<p>Theory SEC III: Vaccination-principles and importance of immunization. A brief idea of antibiotics</p> <p>Practical: Field Study Population study of physiological parameters such as height, weight, heart-rate, blood pressure respiratory rate, PFI, TC of RBC, estimation of haemoglobin, DC of WBC</p>	4

oct	Theory: CC 1A: Biochemistry of Biomolecules. a. Carbohydrates: Definition and classification. b. Monosaccharide–Classification, structure. Chemical reactions of monosaccharide (Glucose & Fructose)- Reactions with concentrated mineral acids, alkali, Phenyl hydrazine and their biochemical importance. c. Disaccharides–Maltose, Lactose and Sucrose: Structure, occurrence and physiological importance	4	Theory CC 1C: Lymph and tissue fluids: composition, formation, and functions. Practical CC 1C: Practice	4 2	Theory SEC III: Basic principle of immunological detection of Pregnancy.	2
Nov	Theory: CC 1A: Polysaccharides–Starch, Glycogen, Dextrin, Cellulose	4	Theory CC 1C: Blood groups-ABO and Rh. Blood transfusion-precaution and hazards. Immunological basis of identification of ABO and Rh blood groups Practical CC 1C: Practice	4 2	Theory SEC III: Revision. Class test	4
Dec	Theory: CC 1A: Revision Class test Examination	2 2	Theory CC 1C: Anaemia-types (definition and causes). Leucocytosis, leucopenia and leukaemia. Purpura Revision Practical Practice Examination	4 2	Theory SEC III Revision — Practical Practice Examination	4 2
Jan	Sem-II(G) Theory CC 1B: Metabolism Glycolysis, TCA cycle, Glycogenesis, Glycogenolysis, Gluconeogenesis Practical: 1. Qualitative Experiments: Qualitative tests for identification of starch, dextrin, lactose, sucrose, glucose, fructose, albumin, gelatin, peptone, lactic acid	4 2	Sem-IV(G) Theory CC 1D: Endocrine System Anatomy of endocrine system. Hormones - classification. Basic concept of regulation of hormone actions. Positive and negative Feedback mechanism. Elementary idea of hormone action. Hypothalamus: Basic concept of neurohormone. Hypothalamohypophyseal tract and portal system. Practical: CC 1D: Identification of abnormal constituents of urine - glucose, protein, acetone blood and bile salts.	4 2	Sem-IV(G) — Theory DSE 1B: Reproductive Physiology Primary and accessory sex organs and secondary sex characters. Testis: histology, spermatogenesis, testicular hormones and their functions. Practical: Human Experiments II Pneumographic recording of respiratory movements along with The effect of drinking of water, talking, forced hyperventilation and breath holding.	4 2

Feb	Theory CC 1B: Depot fat. Beta oxidation of saturated fatty acid Ketone bodies, formation and significance.	4	Theory CC 1D: Pituitary: Histological structure, hormones, functions. Hypo and Hyperactive states of pituitary gland. Practical: CC 1D: Practice	4 DSE 1B Ovary : histology, oogenesis, ovarian hormones and their functions. Practical: Human Experiments II 2 Measurement of some common anthropometric parameters: stature, weight, eye height, shoulder height, elbow height. Sitting height, elbow rest height(sitting), knee height(sitting), arm reach from wall,	4 2
Mar	Theory CC 1B: Deamination, Transamination. Amino acid pool-fate and functions of amino acids in the body. Formation of urea and its importance.	4	Theory CC 1D: Thyroid: Histological structure. Functions of thyroid hormones & thyrocalcitonin. Hypo and hyper-active states of thyroid	4 Theory DSE 1B: Spermatogenesis & Oogenesis – processes and Factors controlling. Practical: Human Experiments II Measurement of some common anthropometric parameters: Mid -arm circumference, waist circumference, hip circumference, neck circumference, head circumference, chest circumference.	4 2
Apr	Theory CC 1B: Brief idea of HMP shunt and its significance Lipoproteins -types and functions	4	Theory CC 1D: Parathyroid: Histological structure, functions of parathyroid hormone. Tetany. Adrenal Cortex: Histological structure and functions of different hormones. Hypo and hyper-active states of adrenal cortex. Adrenal Medulla: Histological structure and functions of medullary hormones. The relation of adrenal medulla with the sympathetic Nervous system	6 Theory DSE 1B: Oestrus and menstrual cycles and their hormonal control. Fertilization, implantation and structure and functions of placenta.	4
May	Theory CC 1B: Purine and pyrimidine bases, nucleosides, nucleotides and polynucleotides	4	Theory CC 1D: Pancreas: Histology of islets of Langerhans. Origin and functions of pancreatic hormones. Diabetes mellitus. Brief Idea of the origin and functions of renin-angiotensin, prostaglandins. Erythropoietin and melatonin. Elementary idea of gastrointestinal hormone.	6 Theory DSE 1B: Maintenance of pregnancy –role of hormones. Development of mammary gland and lactation-role of Hormones	4
June	Theory CC 1B: Revision Practical Practice Examination	2 2	Theory CC 1D: Revision Practical Practice Examination	4 Theory DSE 1B: Revision 2 Practical Practice Examination	4 2


 Head
 Department of Physiology
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DEPARTMENT OF PHYSIOLOGY

SURI VIDYASAGAR COLLEGE
SURI, BIRBHUM

TEACHING PLAN FOR THE SESSION 2018-19

Session 18-19: 1st Term: 1st July to 07th Oct'2018

2nd Term: 02nd Nov to 31st Dec'2018

3rd Term: 1st Jan to 30th June'2019

Subject: **Physiology Hons. & General Course**

			PART-I HONS.	PART-II HONS.	PART-III HONS.
1 st Term	Hons	Theory	Course introduction -4 Lectures. Module- 1.1.1, 1.2,	Course introduction -4 Lectures. Module- 3.1.1, 3.2.1, 3.2.2, 3.5.1	Course introduction -4 lectures. Module -5.1.1, 5.2, 5.4, 6.1.1, 6.1.2, 7.3, 7.4
		Pract.	Module- 2.1, 2.2, 2.3	Module- 4.1, 4.2	Module - 8.1, 8.2
	Gen.	Theory	Course introduction -5 Lectures. Module- 1.1G, 1.2.1G, 1.2.2G.	Module- 2.1G, 2.2G	Module -4A.1G, 4A.2
		Pract.	No Practical	Module- 3.1G, 3.2G, 3.3G,	Module - 4B.1.
2 nd Term	Hons	Theory	Module- 1.1.2, 1.3, 1.4	Module- 3.1.2, 3.2.3, 3.3.1, 3.4.1, 3.5.2, 3.5.3, 6.1	Module - 5.1.2, 5.1.3, 5.3, 5.5, 5.6, 6.1.3, 6.2, 7.2,
		Pract.	Module- 2.4, 2.5	Module- 4.3, 4.4	Module - 8.3, 8.4
	Gen.	Theory	Module- 1.2.3G, 1.2.4G, 1.3G, 1.4.1G,	Module- 2.3G, 2.4G, 2.5G	Module - 4A.3G, 4A.4.
		Pract.	No Practical	Module- 3.4G, 3.7G, 3.8G	Module -4B.2.
3 rd Term	Hons	Theory	Module- 1.5, 1.6, 1.7 Remedial Classes=16	Module- 3.3.2, 3.2.3, 3.4.2, 3.4.3, 3.6.2, 3.6.3 Remedial Classes=16	Module- 6.3, 6.4, 6.5, 7.1, 7.5, 7.6. Remedial Classes=16
		Pract.	Module- 2.6, 2.7, 2.8, 2.9	Module- 4.5, 4.6	Module- 8.5, 8.6, 8.7
	Gen.	Theory	Module- 1.4.2G, 1.4.3G, 1.5G	Module - 2.6G, 2.7G	Module- 4A.5G, 4A.6G
		Pract.	No Practical	Module- 3.5G, 3.6G, 3.9G.	Module- 4B.3.

T.C = Tutorial class



 Department of Physiology
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DEPARTMENT OF PHYSIOLOGY
SURI VIDYASAGAR COLLEGE
SURI, BIRBHUM.

MODULES OF PAPER – V (HONS)

MODULE-5.1

No OF LECTURES:-50

UNIT	TOPIC	TEACHER	LECTURES
5.1.1	NERVE MUSCLE PHYSIOLOGY: Microscopic and electron microscopic structure of striated, smooth and cardiac muscles. The sarcotubular system, Red and white striated muscle fibres. Single unit and multiunit smooth muscle. Muscle groups; antagonist and agonists, motor point, myography. Properties of muscle, excitability and contractility, all or none law, summation of stimuli, summation of contractions; effects of repeated stimuli; genesis of tetanus, onset of fatigue; refractory period, tonicity, contractility, extensibility and elasticity. Optimal load, optimal length of fibres. Muscle proteins, mechanism of muscle contraction and relaxation. Excitation-Contraction coupling; dihydro-pyridine receptors, ryanodine receptors, isometric and isotonic contractions. Muscle length tension and velocity relationship, mechanical components of muscle. Chemical, thermal and electrical changes in striated muscle during contraction and relaxation. Electro-myography, Muscle autoimmune diseases, myasthenia gravis.	HC	20
5.1.2	Myelinated and unmyelinated nerve fibres. Myelinogenesis. The resting membrane potential, the action potential. Electronic potential. Propagation of nerve impulses in different types of nerve fibres. Cable concept of a nerve fibre and gating current. Compound action potentials. Conduction velocity of nerve impulses in relation to myelination and diameter of nerve fibres. Properties of nerve fibres: excitability, conductivity, all or none law, accommodation, adaptation, summation, refractory period, indefatigability. Concept of chronaxie and rheobase.	HC	20
5.1.3	Synapses; types, structure, synaptic transmission of the impulse, synthesis, storage and release of neurotransmitter, synaptic potentials, neurotransmitter, co-transmitters, neuromodulators. The neuromuscular junctions, structure, transmission, end plate potential, post-synaptic potential potential. Motor unit. Injury to peripheral nerve, degeneration and regeneration in nerve fibres. Changes in the nerve cell body, transneuronal degeneration, changes in receptors and motor end plates, denervation, hypersensitivity. Reaction of degeneration, Thermal changes in nerve during activity. Neurotrophins, Molecular basis of ciliary movements.	HC	10
		TOTAL	50

MODULE-5.2

No OF LECTURES:-30

UNIT	TOPIC	TEACHER	LECTURES
5.2.1	Sensory Physiology : Classification of general & special senses & their receptors. Muller's law of specific nerve energies. Weber – Fechner law, mechanism of transduction of stimuli from sensory receptors. Adaptation of receptors- phasic & tonic adaptations. a) Olfaction & gestation : structure of the receptor organs, nerve pathway centers, physiology of taste & smell. After taste, olfactometer, electro- olfactogram. b) Audition: sound waves, decibel, structure & functional significance of auditory apparatus- external, middle, internal ears. Organ of Corti, Auditory pathway & centers. Mechanisms of hearing & its modern theories . Different electrical potentials of internal ear. Discrimination of sound frequency & loudness, Audiometry.	A P	15
5.2.2	c) Vision: Anatomy & structure of eyeball, principal characteristics of ocular system compared to a camera. The structures of lens. Formation, circulation of aqueous & vitreous humor. Pupillary reflexes, light reflex, near response. Argyll-Robertson pupil. Errors of refraction & their corrections. Histological details of retina, peripheral retina, fovea, blind spot. Visual pathway, photopic & scotopic	A P	15

	vision. Chemical & electrical changes in retina on exposure to light. Electroretinogram, positive & negative after image. Light & dark adaptation. Colour visions & its modern concept. Colour blindness. Visual field, perimetry, visual acuity- measurement, mechanism, factors controlling visual acuity. Binocular vision & depth perception . Lux, measurement of illumination, critical fusion frequency		
		TOTAL	30

MODULE-5.3

No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
5.3.1	Renal Physiology: Anatomical organization of urinary system. Gross structure of kidney. Renal circulation-anatomy, peculiarities, regulation of renin-angiotensin system. Microanatomy (including electron microscopy) of a nephron and structure differences between cortical and juxtamedullary nephrons. Juxtaglomerular apparatus. Mechanism of formation of urine. Concept of ultrafiltration, glomerular filtration rate. Passive and active tubular transport. Counter-current exchanger and counter multiplier mechanism.	N P	10
5.3.2	Role of kidney in acid base balance and osmoregulation. Non-excretory functions of kidney; normal and abnormal constituents of urine and their significance. Concept of renal threshold. Functions of kidney and renal function tests (inulin, urea clearance tests). Kidney failure. Renal stone formation. Dialysis and artificial kidney. Inervation of urinary bladder and micturition. Micturition reflexes and its regulation by higher centers. Diuresis.	N P	10
			20

MODULE-5.4

No OF LECTURES:-30

UNIT	TOPIC	TEACHER	LECTURES
5.4.1	Genetics and Molecular Biology: Double helical structure of DNA , clover-leaf and L-shaped structure of t-RNA, 3-dimensional structure of m-RNA and t-RNA molecules. Chromosome structure, molecular organization, chromosomal proteins, and different levels of chromatin organization; linkage and crossing over. Cell cycle, cell differentiation, Replication, transcription and translation.	A P	20
5.4.2	Genes, protein synthesis, genetic-code. One cistron- one subunit concept. Regulation of gene expression – operon concept, lac operon; inborn errors of metabolism of glycogen, galactose, tryptophan, phenylalanine and tyrosine. Elementary idea of genetic engineering, recombinant DNA technology.	A P	10
		TOTAL	30

MODULE:-5.5

No OF LECTURES:-60

UNIT	TOPIC	TEACHER	LECTURES
5.5.1	Central Nervous System: Spinal Cord: Position & relations, external features, segments & roots, meninges, enlargements, fissures & funiculi. Internal structure: cross section & regional variations, grey matter, nuclei, white matter. Tracts: long ascending tracts- spinothalamic, Goll and Burdach ; spinocerebellar, long descending tracts- corticospinal (pyramidal), reticulospinal, vestibulospinal, rubrospinal (origin, course and termination). Lesions of the spinal cord: complete transection, Hemisection of the spinal cord (Brown-Sequard syndrome), dorsal column lesions. Syringomyelia. Reflexes : Reflex action; definition and type. Reflex arc: monosynaptic and polysynaptic, Monosynaptic and polysynaptic reflexes with examples. Muscle spindles: structure, innervation and function. Muscle tone. General properties of reflexes.	A P	15

5.5.2	<p>Ventricular System and Cerebrospinal fluid: Ventricular system; lateral ventricle and aqueduct of midbrain, fourth ventricle. Choroid plexus; position and relations, microscopic features, functions. Cerebrospinal fluid (CSF): formation of CSF, Circulation of CSF. Sub-arachnoid cisterns, functions of CSF, hydrocephalus.</p> <p>Cerebral cortex : Definition and basic concepts. Internal structure: cortical layers. Cytoarchitectonic areas; sensory and motor areas. Higher cortical functions; learning and memory. Hemispheric dominance. Language function:- Broca's area, physiology of speech and speech disorders. Prefrontal functions.</p> <p>Cerebellum : Definition, position and relations. External feature. Phylogeny and dysfunction. Internal structure; nuclei, cortical layers, fibres. Connection of the cerebellum; afferents and efferents. Function and cerebellar disorders.</p> <p>Thalamus : Definition, Gross features, position and relations. Structure and nuclear groups, Functions of the thalamus. Lesions of thalamus.</p> <p>Hypothalamus : Definition, positions and relations; Internal structure: groups, connections: afferent and efferents, Functions: endocrine, automatic, temperature regulations, feeding and drinking behaviour and other behavioural functions.</p>	A P	25
5.5.3	<p>Reticular formation : Definition and position, basic structure: reticular nuclei and fibres, connection; functions of ascending and descending reticular formations. Decerebrate and decorticate rigidity.</p> <p>Basal Ganglia : Definition and terminology. Gross anatomy: caudate nucleus; lentiform nucleus, claustrum, amygdaloid body, substantia nigra, subthalamic nucleus, connections of basal ganglia: neostriatum, globus pallidus, amygdaloid body, substantia nigra; Subthalamic nucleus. Functions of basal ganglia, Disorders of basal ganglia: Parkinsonism, chorea, athetosis, hemiballismus.</p> <p>Limbic System and emotion: Electrophysiology of brain, spontaneous electrical activity of brain, EEG and ECOG, evoked potential, DC potential. Sleep : types of sleep and physiological basis of sleep, sleep wakefulness cycle. Higher functions of brain: Learning and memory; The nature of learning and memory. Types of learning and memory, Simple learning habituation and sensitization, associative learning, classical conditioning in aplysia, classical conditioning in the cerebellum, classical and operant conditioning. Aversion learning, complex learning, imprinting, latent learning; observational learning. Memory- hippocampus; anatomy and synaptic organization. Long term potentiation, presynaptic or postsynaptic locus, the role of dendritic spines. Speech: zones, neurophysiological mechanism, speech disorders. Physiology of pain: Definition, types, pain receptors. Pain transduction: pattern and specific theory; referred pain.</p>	A P	20
		TOTAL	60

MODULE-5.6

No OF LECTURES:-10

UNIT	TOPIC	TEACHER	LECTURES
5.6.1	<p>Autonomic Nervous System(ANS) : Basic structure of somatic and autonomic systems. Divisions of ANS. Differences between divisions: anatomical, physiological and pharmacological differences. Sympathetic division: origin and organization, distribution of fibres. Adrenal medulla, sympathetic receptors, sympathetic functions. Sympathectomy, Parasympathetic division : cranial outflow, sacral outflow. Parasympathetic functions. Autonomic plexuses. Autonomic activities of special organs and systems: eye, heart and blood vessels. Respiratory organs, gastrointestinal tract, urinary bladder. Autonomic synapses and chemical transmission.</p>	A P	10
		TOTAL	10

MODULES OF PAPER –VI (HONS)

MODULE-6.1

No OF LECTURES:-80

UNIT	TOPIC	TEACHER	LECTURES
6.1.1	<p>Endocrine System : Definition of endocrine glands and hormones. Experimental and clinical methods</p>	AP	30

	<p>of study of endocrine glands. General classification of hormones on chemical basis. Different modes of hormone action. Concepts of hormone receptor. G-protein, cyclic AMP, IP₃, IP₄.</p> <p>Hypothalamo-pituitary axis: Hypothalamus as a neuroendocrine organ, Hypophysiotropic hormones of hypothalamus. Synthesis and transport of posterior lobe hormones from hypothalamus.</p> <p>Vascular and neural connections between the hypothalamus and the pituitary. Role of median eminence. Histological structure and regulations of anterior, middle and posterior lobes of pituitary. Chemistry, modes of action and function of growth hormone, TSH, ACTH, FSH, LH, MSH, Prolactin, Vasopressin and oxytocin.</p> <p>Cushing's disease, gigantism, acromegaly, dwarfism, Simmond's disease, Frolich's syndrome, diabetes insipidus.</p>		
6.1.2	<p>Thyroid: Microscopic & electron microscopic structure of thyroid. Chemistry, biosynthesis, storage, transport & functions of thyroxine, and tri-iodothyronine, stimulatory action of thyroid hormone on synthesis of growth hormone. Antithyroid drugs & goitrogen. Cretinism. Myxedema. Grave's disease. Hashimoto's disease, iodine deficiency goitre, toxic goiter, long action thyroid stimulator(LATS), exophthalmos producing substances(EPS).</p> <p>Calcitonin: Source, function & regulation of secretion, calcitonin gene related peptide(CGRP).</p> <p>Parathyroid: Physiology of PTH, regulation of secretion & functions.</p> <p>Adrenal Cortex: Histological structure, regulation of different types of hormones & functions of adrenal cortex. Steroid hormone, biosynthesis. Cushing's syndrome. Addison's disease. Hyperaldosteronism.</p> <p>Adrenal Medulla: Histological structure, regulation & hormonal function of adrenal medulla. Synthesis & metabolism of catecholamines. Action of adrenaline & noradrenalin on different organs & their effect. Pheochromocytoma.</p>	AP	30
6.1.3	<p>Pancreas: Histological structure of pancreatic islets. Sources, regulation, modes of action. Function of insulin & glucagon. Oral hypoglycemic drugs. Pancreatic somatostatin. Type I and type II diabetes mellitus, hyperinsulinism. Prostaglandin, kininogens and kinins. Atrial Natriuretic Factor (ANF), Growth factor : EGF, IGF, PDGF, FGF and NGF.</p> <p>GI hormones : General idea – secretin, gastrin, VIP, GIP, CCK-PZ.</p> <p>Thymus : Its endocrinal functions.</p>	AP	20
		TOTAL	80

MODULE-6.2

No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
6.2.1	Chronobiology : Different types of physiological rhythms- ultradian, circadian, infradian. Different zeitgebers and their relation with circadian clock. Biorhythms in physiological systems. Reproduction biorhythms; estrous and menstrual cycles. Seasonal pattern of breeding, physiological basis of sleep- wakefulness cycle.	A P	10
6.2.2	Hormonal biorhythms – adrenocortical and pineal, prolactin, body temperature. Neural basis of biological clock and the role of suprachiasmatic nuclei. Brief idea of jet-lag.	A P	10
		TOTAL	20

MODULE-6.3

No OF LECTURES:-60

UNIT	TOPIC	TEACHER	LECTURES
6.3.1	Social Physiology and Community Health : Methods of nutritional survey of the population. Methods and principles of population control. Problems of sterility, infertility, impotence. In vitro fertilization. Intrauterine embryo transplantation,	A P	30

6.3.2	Malnutrition, under nutrition, Kwashiorkor, Marasmus, Marasmic Kwashiorkor, Rickets, Osteomalacia, Xerophthalmia, Beriberi, Pellagra, Nutritional anaemias, dental caries, endemic goiter and their remedial measures. Genetic and other factors affecting community health of tribal and non-tribal populations. Pregnancy tests. Nutritional deficiencies in pregnancy and their remedial measures.	A P	30
		TOTAL	60

MODULE-6.4

No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
6.4.1	Comparative Physiology : Nitrogen metabolism, osmoregulation, electric organs, and bioluminescence.	A P	20
		TOTAL	20

MODULE-6.5

No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
6.5.1	Instrumentation : Basic principles of light, compound and electron microscopy (scanning and transmission) Cathode ray oscilloscopes, NMR, HPLC, Spectrophotometer.	A.P	20
		TOTAL	20

MODULES OF PAPER – VII (HONS)

MODULE-7.1

No OF LECTURES: 80

UNIT	TOPIC	TEACHER	LECTURES
7.1.1	Reproductive Physiology : Primary and secondary sex organs, secondary sex characters. Puberty and its control, gonadal steroid hormones- synthesis and catabolism, general idea of sex differentiation.	A P	20
7.1.2	Ovary : Histological structure of ovary, Graafian Follicle and corpus luteum. Hormonal control of ovarian functions. Hormonal functions of ovary. Estrous and menstrual cycles and their hormonal controls. Formation, function and fate of corpus luteum. Formation and maturation of ovum and ovulation, ovulation inducers. Testis : Histological structure of testis, seminiferous tubules and interstitial tissue of Leydig. Hormonal control of testicular function. Spermatogenesis, spermiogenesis. Hormonal functions of testis. Erection, ejaculation, Eunuchoidism, Cryptorchidism. Prostate and seminal vesicle.	A P	40
7.1.3	Pregnancy and Lactation : Transport of ovum and sperm in female reproductive tract. Fertilisation. Uterine implantation of fertilized ovum. Formation, structure, functions and fate of placenta. Placental hormones. Pregnancy changes and their hormonal control. Pregnancy tests. Parturition. Brief idea about histological structure of mammary gland. Phases of mammary gland development and their hormonal control. Hormonal control of lactation and milk ejection.	A P	20
		TOTAL	80

MODULE-7.2

No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
7.2.1	Developmental Biology : Fertilisation and formation of trilaminar germ disc from zygote; development of heart.	A P	10

7.2.2	Development of GI tract and urinary system; foetal circulation and changes occurring at birth.	A P	10
		TOTAL	20

MODULE-7.3 No OF LECTURES:-40

UNIT	TOPIC	TEACHER	LECTURES
7.3.1	Biostatistics : 1. Common statistical terms. Notations. Application and uses of biostatistics as a science and its scopes. Physiological statistics. Characteristics and application. 2. Data: sources and presentation. Qualitative and quantitative data, Methods of presentation- tabulation; frequency distribution, drawings, graphical representation of qualitative and quantitative data. Histogram, Frequency polygon and curve, scatter and dot diagrams. Bar diagram, Pie or sector diagram.	A.P	10
7.3.2	3. Measures of central tendency: Averages: Mean, Mode and Median. Measures of location, Percentiles; Application and uses of percentiles. 4. Biological Variability; Mean deviation, Standard deviation (SD), coefficient of variation (CV). 5. Sampling: Definition and types; Characteristics, Sampling techniques-random and non-random sampling, simple random sampling. Systematic sampling. Precision of sampling. 6. Standard error of mean (SEM): Calculation and application in physiological sciences, z-test (for large samples) and t-test (Student's t-test or Gosset's t-test) for small samples.	A.P	15
7.3.3	7. Simple correlation, correlation coefficient : Spearman's ρ and Pearson's product-moment correlation-coefficient (r); Linear regression.	A.P	15
		TOTAL	40

MODULE-7.4 No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
7.4.1	Computer : Basic concept, input and output devices, binary data systems, binary data systems, binary operations. Addition, subtraction, multiplication.	A.P	10
7.4.2	Boolean algebra, elementary idea of computer language and programming. Application of computer knowledge in Physiology.	A.P	10
		TOTAL	20

MODULE-7.5 No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
7.5.1	Skin and body temperature regulation : Skin structure and function, skin circulation, peculiarities and control. Bradykinin and triple response: insensible perspiration; composition of sweat; physiology of sweat secretion and its regulation.	N P	10
7.5.2	Body temperature - factors involved in heat gain and heat loss. Regulation of body temperature by physical, physiological, neural and hormonal factors with reference to nonsweating animals. Physiology of hyperthermia, hypothermia and hibernation. Brown fat; non-shivering thermogenesis.	N P	10
		TOTAL	20

MODULE-7.6 No OF LECTURES:-20

UNIT	TOPIC	TEACHER	LECTURES
7.6.1	Pharmacological Physiology : The importance of pharmacology in the study of physiological processes- drugs, agonist, antagonist. Pharmacokinetics- absorption, distribution, excretion and bioavailability of drug. Drug biotransformation.	AP	10
7.6.2	The dose effect relationship and the characteristics of dose response curve.	AP	10

	Assessment of drug toxicity- LD ₅₀ and ED ₅₀		
		TOTAL	20

MODULES OF PAPER – VIII (HONS. PRACTICAL)

MODULE-8.1 No OF PERIODS:-15

UNIT	TOPIC	TEACHER	PERIODS
8.1.1	Preparation of Amphibian Ringers Soln.	<u>AP</u>	3
8.1.2	Kymographic recording of perfused heart beat of toad.		3
8.1.3	Staining and identification of supplied paraffin sections of mammalian tissues by H/E staining: liver, kidney, oesophagus, duodenum, ileum, large intestine		6
8.1.4	Computation of Frequency distribution, Drawing of Histogram, Frequency polygon, Mean, Median, SD, SE, t-test of Body temperature.		3
		TOTAL	15

MODULE-8.2 No OF PERIODS:-18

UNIT	TOPIC	TEACHER	PERIODS
8.2.1	Study of effect of changes in perfusion pressure of fluid on heart beat of toad.	<u>AP</u>	3
8.2.2	Study of effect of changes in excess calcium on heart beat of toad.		3
8.2.3	Photolorimetric estimation of blood glucose by Folin-Wu method.		3
8.2.4	Photolorimetric estimation of blood inorganic Phosphate by Fiske-Subbarow method.		3
8.2.5	Staining and identification of supplied paraffin sections of mammalian tissues by H/E staining: lungs, spleen, lymph node, ovary, testis.		6
		TOTAL	18

MODULE-8.3 No OF PERIODS:-21

UNIT	TOPIC	TEACHER	PERIODS
8.3.1	Study of effect of changes in K ⁺ conc.on heart beat of toad.	AP	3
8.3.2	Study of effect of changes in Ach.on heart beat of toad.		3
8.3.3	Photolorimetric estimation of serum protein by biuret method.		3
8.3.4	Photolorimetric estimation of serum amylase by iodometric method.		3
8.3.5	Computation of Frequency distribution, Drawing of Histogram, Frequency polygon, Mean, Median, SD, SE, t-test of pulse rate.		3
8.3.6	Staining and identification of supplied paraffin sections of mammalian tissues by H/E staining: salivary glands, thyroid, adrenal, pancreas, spinal cord, cerebellum,cerebrum.		6
		TOTAL	21

MODULE-8.4 No OF PERIODS:-21

UNIT	TOPIC	TEACHER	PERIODS
8.4.1	Study of effect of changes in Vagal stimulation on heart beat of toad.	AP	3
8.4.2	Estimation of food carbohydrate by Benedict's method.		3

8.4.3	Photocolorimetric estimation of serum cholesterol by Lieberman-Burchard method.		3
8.4.4	Histochemistry: Staining and demonstration of mucopolysaccharide (PAS)		3
8.4.5	Computation of Frequency distribution, Drawing of Histogram, Frequency polygon, Mean, Median, SD, SE, t-test of systolic blood pressure.		3
8.4.6	Effect of temperature on muscle expt.		3
8.4.7	Effect of summation of 2 stimuli on muscle expt.		3
			TOTAL

MODULE-8.5

No OF PERIODS:-21

UNIT	TOPIC	TEACHER	PERIODS
8.5.1	Determination of nerve conduction velocity by kymograph recording of simple twitches.	AP	3
8.5.2	Histochemistry: Demonstration of alkaline phosphatase and staining of nuclear elements by iron-hematoxin		3
8.5.3	Computation of Frequency distribution, Drawing of Histogram, Frequency polygon, Mean, Median, SD, SE, t-test of respiration.		3
8.5.4	Effect of excessive repeated stimuli on muscle contract ion.		3
8.5.5	Demonstration: Genesis of clonus and tetanus by repeated successive stimuli on Gastrocnemious muscle.		3
8.5.6	Demonstration: effect of N-M blocking drug on gastrocnemious – Sciatic preparation.		3
8.5.7	Computation of Frequency distribution, Drawing of Histogram, Frequency polygon, Mean, Median, SD, SE, t-test of height.		3
		TOTAL	21

MODULE-8.6

No OF PERIODS:-24

UNIT	TOPIC	TEACHER	PERIODS
8.6.1	Computation of Frequency distribution, Drawing of Histogram, Frequency polygon, Mean, Median, SD, SE, t-test of weight.	AP	3
8.6.2	Effect of load (after load and free load) on muscle expt.(Practice)		3
8.6.3	Staining and identification of supplied paraffin sections of mammalian tissues by H/E staining. (Practice)		3
8.6.4	Histochemistry: Demonstration of hepatic or splenic iron by Prussian blue method.		3
8.6.5	Effect of temperature on muscle expt.(Practice)		3
8.6.6	Study of effect of changes in excess calcium on heart beat of toad.(PRACTICE)		3
8.6.7	Staining and identification of supplied paraffin sections of mammalian tissues by H/E staining.(PRACTICE)		3
8.6.7	Study of effect of changes in K ⁺ conc.on heart beat of toad. (PRACTICE)		3
		TOTAL	24

UNIT	TOPIC	TEACHER	PERIODS
8.7.1	Study of effect of changes in Ach.on heart beat of toad. (PRACTICE)	AP	3
8.7.2	Study of effect of changes in perfusion pressure of fluid on heart beat of toad. (PRACTICE)		3
8.7.3	Staining and identification of supplied paraffin sections of mammalian tissues by H/E staining.(PRACTICE)		3
8.7.4	Study of effect of changes in Ach.on heart beat of toad. (PRACTICE)		3
8.7.5	Field study Report		3
8.7.6	Field study Report		3
8.7.7	Field study Report		3
		TOTAL	21

MODULES OF PAPER – IVA (GENERAL)MODULE-4A.1(G)

No OF PERIODS:-06

UNIT	TOPIC	TEACHER	LECTURES
4A.1.1	Clinical Biochemistry : (a) Techniques in the Biochemical investigations of disease. Collection of specimens :- Arterial and venous blood, preparation of serum and plasma, uses of anticoagulants, urine and its preservation. General techniques for analysis (principle only) colorimetric techniques. Photoelectric colorimetry, Spectrophotometry. Special technique for analysis, Principle of electrophoresis, principles of chromatography. (b) Clinical importance of serum lipoproteins, triglycerides, cholesterol. (c) Pathophysiological significances of the following blood constituents : glucose, urea, creatine, uric acid, bilirubin, SGOT, SGPT, alkaline and acid phosphatases, ketone bodies, N.P.N. (d) Significance of Glucose tolerance test and liver function test.	AP	6
		TOTAL	10

MODULE-4A.2(G)

No OF PERIODS:-14

UNIT	TOPIC	TEACHER	LECTURES
4A.2.1	Microbiology: Virus – DNA and RNA, Bacteria-structure and morphological classification, pathogenic and non-pathogenic, Gram positive and Gram negative bacteria : Sterilization and pasteurization; Antibiotics ; Bacteriostatic and Bactericidal agents with example, Basic structure of DNA and RNA, Elementary idea of gene, genome.	A.P	06
4A.2.2	Immunology & immunization program: Elementary idea of immunity, classification of immunity, active and passive, innate and acquired, humoral and cell mediated : Principle and importance of vaccination : Principle and importance of immunization program in infants, elementary idea of hypersensitivity and autoimmune diseases.	A P	08
		TOTAL	14

MODULE-4A.3(G)

No OF PERIODS:-12

UNIT	TOPIC	TEACHER	LECTURES
4A.3.1	Works & Sports physiology : Elementary idea of work, Cardiac index, Work index, oxygen pulse, $VO_{2\max}$ Oxygen debt, dynamic and static work their industrial application, effect of ambient temperature, humidity, work and rest period; energy	A P	12

	sources in muscular exercise, cardiovascular and respiratory changes during exercise, principle of training, Dope test, significance of lung function tests.		
		TOTAL	12

MODULE-4A.4(G) No OF PERIODS:-10

UNIT	TOPIC	TEACHER	LECTURES
4A.4.1	Social Physiology : Elementary concepts of health and treatment. Brief idea about communicable and non communicable diseases and their prevention. Primary nutritional disease- mal nutrition, Kwashiorkor, Marasmus and their prevention, under nutrition and the preventive measures. Anemia – classification and their prevention, causes and ; management of the following disease: diabetes, thalassemia, AIDS, atherosclerosis, endemic goiter, malaria, STD, hepatitis B and C, obesity, silicosis, asbestosis, emphysema, pneumoconiosis etc. Elementary idea of occupational hazards and their prevention, elementary idea of drug abuse and addiction, alcohol, marijuana, LSD and heroin.		10
		TOTAL	10

MODULE-4A.5(G) No OF PERIODS:-08

UNIT	TOPIC	TEACHER	LECTURES
4A.5.1	Environmental Physiology: A brief idea of environment and biosphere, ecology, measurement of temperature, relative humidity, air velocity. Heat Index, pollutants-primary, secondary and tertiary and their sources. Effect of sound , air and water pollution on human body and their protection. Radioactive pollutants: their sources and hazards, Green house effects, ozone hole, Global warming, pesticides- their effects on human ecology.	NP	08
		TOTAL	08

MODULE-4A.6(G) No OF PERIODS:-08

UNIT	TOPIC	TEACHER	LECTURES
4A.6.1	Biostatistics : Sampling and its methods, Frequency distribution and its graphical representation, properties and computation of mean, properties, and computation of standard deviation an standard error.	HC	08
		TOTAL	08

MODULES OF PAPER - IVB (GENERAL PRACTICAL)

MODULE-4B.1(G) No OF PERIODS:-12

UNIT	TOPIC	TEACHER	PERIODS
4B.1.1	Differential Count of WBC	AP	3
4B.1.2	Identification of some common food adulterants: metanyl yellow, aluminium foil, chalk powder in sugar, water in milk, sugar soln. in honey, starch in chana.		3
4B.1.3	Pneumographic recording of respiratory movements along with the effect of drinking water, talking, forced hyperventilation and breath holding.		3
4B.1.4	Determination of blood group- ABO system and Rh-factor.		3
		TOTAL	12

MODULE-4B.2(G) No OF PERIODS:-12

UNIT	TOPIC	TEACHER	PERIODS
4B.2.1	Identification of following abnormal constituents of urine: Glucose, protein, acetone, blood and bile pigments	AP	3
4B.2.2	Test for color blindness, Test for visual acuity using Snell's chart.		3
4B.2.3	Exploration of conductive and perceptive deafness by tuning fork method.		3
4B.2.4	Measurement of some anthropometric measures: In standing posture: Stature, eye		3

	height, shoulder height, elbow height, shoulder-elbow length, arm reach from wall.		
		TOTAL	12

MODULE-4B.3(G)

No OF PERIODS:-12

UNIT	TOPIC	TEACHER	PERIODS
4B.3.1	Bleeding time and Clotting time	AP	3
4B.3.2	Measurement of some anthropometric measures: In sitting position/posture: sitting height, eye height, elbow rest height, knee height, calculation of body surface area (using nomogram) and body mass index(BMI) from anthropometric measurements.		3
4B.3.3	Field study Report		3
4B.3.4	Field study Report		3
		TOTAL	12

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