Shahid Matangini Hazra Government General Degree College for Women
Teaching Assignment and Lesson Plan
Department of Mathematics
Academic Session: 2023-2024 (EVEN SEM)
Semester: Second
Course: Hons

Name of the Teacher	Title of the teaching assignment	Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus	Date of commencement of the assignment	Number of classes required to complete each unit	Total number of classes required to complete the assignment
Deepankar Das	Algebra(Major-2)	UNIT-2: Equivalence relations. Functions, composition of functions, Invertible functions, one to one correspondence and cardinality of a set. Well-ordering property of positive integers, division algorithm, divisibility and Euclidean algorithm. Congruence relation between integers. Principles of Mathematical induction, statement of Fundamental Theorem of Arithmetic.	17.06.24	11	35
		Unit-III: Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation Ax=b, solution sets of linear systems, applications of linear systems, linear independence.	19.07.24	8	
		UNIT-4: Definition of vector space of Rn:, introduction to linear transformations, matrix of a linear transformation, inverse of a matrix, characterizations of invertible matrices. Subspaces of Rn, dimension of subspaces of Rn, rank of a matrix, Eigen values, eigen vectors and characteristic equation of a matrix. Cayley-Hamilton theorem and its use in finding the inverse of a matrix.	05.08.24	16	
Dr. Sambhu Charan Barman	Algebra (Major-2)	UNIT-1: Polar representation of complex numbers, nth roots of unity, De Moivre's theorem for rational indices and its applications. Theory of equations: Relation	18.06.2024	12	12

		between roots and coefficients, transformation of equation, Descartes rule of signs, cubic and biquadratic equation. Inequality: The inequality involving AM≥ GM≥ HM, Cauchy-Schwartz inequality			
	SEC-2 (MATLAB-2)	Introduction to M-file: scripts and function, flow control statements, standard arrays library functions, standard matrix library functions, User-defined function: primary function, sub-function, private function, eval function, function handles, function of functions, library functions.	20.06.24	12	22
		Importing and Exporting data, read spread sheet data, write spread sheet data, MAT-file Unit-III Unit-IV	01.08.24	10	

Semester: Second
Course: General (MDS)

Name of the Teacher	Title of the teaching assignment	Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus	Date of commencement of the assignment	Number of classes required to complete each unit	Total number of classes required to complete the assignment
Deepankar Das	Algebra (Minor-2)	UNIT-1: Polar representation of complex numbers, nth roots of unity, De Moivre's theorem for rational indices and its applications. Theory of equations: Relation between roots and coefficients, transformation of equation, Descartes rule of signs, cubic and biquadratic equation. Inequality: The inequality involving AM≥ GM≥ HM, Cauchy-Schwartz inequality.	21.06.2024	9	36
		UNIT-2: Equivalence relations. Functions, composition of functions, Invertible functions, one to one correspondence and	26.07.24	08	

		cardinality of a set. Well-ordering property of positive integers, division algorithm, divisibility and Euclidean algorithm. Congruence relation between integers. Principles of Mathematical induction, statement of Fundamental Theorem of Arithmetic.			
Dr. Sambhu Charan Barman	Algebra (Minor-2T)	Unit-III: Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation Ax=b, solution sets of linear systems, applications of linear systems, linear independence.	19.06.2024	05	
		UNIT-4: Definition of vector space of Rn:, introduction to linear transformations, matrix of a linear transformation, inverse of a matrix, characterizations of invertible matrices. Subspaces of Rn, dimension of subspaces of Rn, rank of a matrix, Eigen values, eigen vectors and characteristic equation of a matrix. Cayley-Hamilton theorem and its use in finding the inverse of a matrix.	18.07,24	10	

Semester: Fourth
Course: Hons

Name of the Teacher	Title of the teaching assignment	Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus	Date of commencement of the assignment	Number of classes required to complete each unit	Total number of classes required to complete the assignment
Deepankar Das	Riemann Integration and series of functions (C8T)	Unit-I(Riemann integration, Intermediate Value theorem for Integrals; Fundamental theorem)	25.03.2024	10	38
		Unit-II(Improper integrals)	26.04.24	06	
		Unit-III (Convergence of sequence of functions. continuity, derivability and integrability Series of functions; Cauchy criterion, Weierstrass M-Test.)	10.05.24	10	
		Unit-IV (Fourier series)	17.06.24	06	
		Unit-V(Power series)	01.07.24	06	
	Multivarite Calculus(C9T)	Unit-I(Functions of several variables, limit and continuity Partial differentiation, directional derivatives, the gradient, optimization)	27.03.2024	12	20
		Unit-IV(Green's theorem, Stoke's theorem, Divergence theorem)	26.05.24	08	

	Ring Theory and Linear Algebra-I (C10T)	Unit 1(rings, subrings, integral domains, fields, Ideal)	21.03.2024	06	18
		Unit 2(Ring homomorphisms, Isomorphism theorems I, II and III, field of quotients)	16.04.24	06	
		Unit-IV (Linear transformations, , matrix representation of a linear transformation, Isomorphism)	07.05.24	06	
Dr. Sambhu Charan Barman	Multivariate Calculus(C9T)	Unit-II(Double integration, triple integration)	28.02.2023	12	20
		Unit-III(vector field, divergence and curl. Line integrals)		08	
	Ring Theory and Linear Algebra-I (C10T)	Unit-III (Vector spaces, subspaces, basis and dimension)	02.03.2023	10	10
	Graph Theory (SEC-2T)	Unit-I(Basic terminologies of graphs)	09.04.24.03.2023	06	18
		Unit-II(Eulerian graph, Hamiltonian graph Representation of a graph by matrix)	02.05.24	06	
		Unit-III (TSP, shortest path, Tree Dijkstra's algorithm, Warshall algorithm)	20.06.24	06	

Semester: Fourth
Course: B.Sc. General

Name of the Teacher	Title of the teaching assignment	Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus	Date of commencement of the assignment	Number of classes required to complete each unit	Total number of classes required to complete the assignment
Deepankar Das	Differential Equations (CC-4, DSC1DT)	Rings, Integral Domain, Fiels	.25.03.2024	16	32
Dr. Sambhu Charan Barman	Differential Equations (CC-4, DSC1DT)	Groups, Cyclic groups the general linear group GLn (R), groups of symmetries Subgroups, Cosets, Index of subgroup, Lagrange's theorem, Normal subgroups: Quotient groups.	26.03.2024	16	

Semester: Sixth
Course: Hons

Name of the Teacher	Title of the teaching assignment	Dividing the assignment into number of units along with detailed lesson plan as per the university syllabus	Date of commencement of the assignment	Number of classes required to complete each unit	Total number of classes required to complete the assignment
Deepankar Das	Ring Theory and Linear Algebra-II (C14T)	Unit-I(Ring & Field)	12.02.2024	15	45
		Unit-II(Dual spaces & Eigen Spaces)	08.4.24	15	
		Unit-III(Inner product spaces, Least square approximation & Spectral theorem)	20.05.24	15	
	Number Theory (DSE3T)	Unit-I(prime counting function, linear congruences, residues, Chinese remainder theorem, Fermat's little theorem, Wilson's theorem)	27.03.2024	13	38
		Unit-II (Dirichlet product, Mobius Inversion formula, greatest integer function, Euler's phi-function, Euler's theorem, reduced set of residues)	03.05.24	12	
		Unit-III(primitive roots for primes and composite numbers, Euler's criterion, Legendre symbol quadratic congruence's, Public key encryption, RSA encryption and decryption)	04.06.24	13	

Dr. Sambhu Charan Barman	Metric Space and Complex Analysis (C13T)	Unit-I (Sequences in metric spaces)	13.02.2024	06	42
		Unit-II (continuous mapping, Connectedness, Compactness)	27.02.24	10	
		Unit-III(limit, continuity of functions of complex variable)	26,04.24	06	
		Unit-IV(Analytic functions, differentiation and integration of functions of complex variable)	10.05.24	08	
		Unit-V(Convergence of sequences and series)	07.06.24	07	
		Unit-VI(absolute and uniform convergence of power series)	25.06.24	05	
	Mathematical Modelling (DSE4T)	Unit-I(solution of Bessel's equation and Legendre's equation, Laplace transform)	27.02.2024	16	32
		Unit-II(Monte Carlo simulation modelling, Simulation, optimization modelling, Linear programming model, sensitivity analysis)	25.04.24	17	