


Maulana Azad College
Department of Mathematics

Teaching / Lesson Plan 2023-24, Undergraduate Mathematics (Honours and General) under CBCS, 2018 & CCF, 2022

Four-Year (Eight-Semester) B. Sc. Degree Course in Mathematics (CCF, 2022) under the University of Calcutta					
Semester, [Honours / General], [Period of Semester]	Course Code	Course Name	Brief Description of the Topics	Name of the Faculty	No. of Lectures
[CCF, 2022] Sem - 1 Honours (July – December, 2023)	MATH-H-CC1-1-Th	Calculus, Geometry & Vector Analysis	Group-A: Calculus	Dr. Babli Saha	16
			Group-B: Geometry-2D	Dr. Somnath Bandyopadhyay	10
			Group-B: Geometry-3D	Dr. Somnath Bandyopadhyay	18
			Group-C: Vector Analysis	Dr. Nanda Das	16
	MATH-H-SEC1-1-Th	C-Language with Mathematical Applications	1: Computer Architecture of Computer	Dr. Nanda Das	6
			2: Constants, Variables & Data Type of C-Program		8
			3: Operation & Expressions		8
			4: Decision Making & Branching		8
			5: Control Statements		8
			6: Arrays		8
7: User-defined Functions	8				
8: Library Functions	6				
[CCF, 2022] Sem - 1 Minor (July – December, 2023)	MATH-H-MC1-1-Th	Calculus, Geometry & Vector Analysis	Unit-1: Algebra-I	Dr. Babli Saha	16
			Unit-2: Differential Calculus-I	Dr. Somnath Bandyopadhyay	10
			Unit-3: Differential Equation-I	Dr. Somnath Bandyopadhyay	18
			Unit-4: Coordinate Geometry	Dr. Nanda Das	16
[CCF, 2022] Sem – 1 IDC-1 (July – December, 2023)	MATH-H-IDC-1-Th	Mathematics in Daily life	Group A: Basic Set Theory	Dr. Babli Saha	4
			Group B: Understanding Integers	Dr. Somnath Bandyopadhyay	8
			Group C: Mathematical Logic	Dr. Babli Saha	6
			Group D: Basic Operation Research	Dr. Nanda Das	8
			Group E: Financial Mathematics	Dr. Nanda Das	9





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[CCF, 2022] Sem - 2 Honours (January – June, 2024)	MATH-H-CC2-2-Th	Basic Algebra	Group-A: Complex Number, Theory of Equation, Inequalities	Dr. Babli Saha	20
			BGroup-B: Relation, Mapping, Integers	Dr. Somnath Bandyopadhyay	20
			Group-C: System of Linear Equations	Dr. Somnath Bandyopadhyay	10
			Group-C: Vector Space	Dr. Babli Saha	10
	MATH-H-SEC 2.1-2-Th	Python Programming and Introduction to LaTeX	Group-A: Python Programming	Dr. Abhishek De	40
			Group-B: Introduction to LaTeX	Dr. Nanda Das	20
[CCF, 2022] Sem – 2 Minor (January – June, 2024)	MATH-H-MC2-2-Th	Basic Algebra	Group-A: Complex Number, Theory of Equation, Inequalities	Dr. Babli Saha	20
			BGroup-B: Relation, Mapping, Integers	Dr. Somnath Bandyopadhyay	20
			Group-C: System of Linear Equations	Dr. Somnath Bandyopadhyay	10
			Group-C: Vector Space	Dr. Babli Saha	10
[CCF, 2022] Sem – 2 IDC-2 (January – June, 2024)	MATH-H-IDC-2-Th	Mathematics in Daily life	Group A: Basic Set Theory	Dr. Babli Saha	4
			Group B: Understanding Integers	Dr. Somnath Bandyopadhyay	8
			Group C: Mathematical Logic	Dr. Babli Saha	6
			Group D: Basic Operation Research	Dr. Nanda Das	8
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[CBCS, 2018] Sem - 3 Honours (July – December, 2023)	CC-5 (TH+TU)	Theory of Real Functions	Unit-1: Limit of functions	Dr. Somnath Bandyopadhyay	8
			Unit-1: Continuity of functions		8
			Unit-1: Bounded functions		8
			Unit-1: Discontinuity of functions		8
			Unit-1: Uniform Continuity of functions		8
	CC-6 (TH+TU)	Ring Theory & Linear Algebra-I	Unit-1: Ring Theory	Dr. Babli Saha	35
			Unit-2: Linear Algebra	Dr. Babli Saha	40
			Unit-1: Ordinary Differential Equation (Sub Unit :1-5)	Dr. Bimal Kumar Sett	25
	CC-7 (TH+TU)	Ordinary Differential Equation & Multivariate Calculus-I	Unit-1: Ordinary Differential Equation (Sub Unit : 6-7)	Dr. Debashis Biswas	15
			Unit-2: Multivariate Calculus-I: Concept of Neighbourhood, Interior Point, Limit Point, Open set, Closed Set.	Dr. Nanda Das	10
			Functions from R^n to R^m , Limit & Continuity		8
			Partial derivatives, Differentiability, Chain Rule,		7
			Directional Derivatives, gradient & its properties, tangent planes		5
			Extremum of functions of two variables, Method of Lagrange's Multiplier, Constraint Optimization Problem.		5
			SEC-A1 (TH)	C-Programming Language	1: Computer Architecture of Computer
2: Constants, Variables & Data Type of C-Program	7				
3: Operation & Expressions, Decision Making & Branching	8				
4: Control Statements, Arrays	6				
5: User-defined Functions, Library Functions	4				
[CBCS, 2018] Sem - 3 General (July – December, 2023)	GE-3 (TH+TU)	Mathematics-GE3	Unit-1: Integral Calculus	Dr. Babli Saha	10
			Unit-2: Numerical Methods	Dr. Nanda das	25
			Unit-3: Linear Programming (Theory)	Dr. Somnath Bandyopadhyay	25





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[CBCS, 2018] Sem - 4 Honours (January – June, 2024)	CC-8 (TH+TU)	Riemann Integration and Series of Functions	Unit-1: Riemann Integration	Dr. Somnath Bandyopadhyay	35
			Unit-3: Power Series		5
			Unit-2: Improper Integral	Dr. Babli Saha	10
			Unit-3: Sequence of Functions, Series of Functions and Fourier Series.		25
	CC-9 (TH+TU)	PDE & Multivariate Calculus-II	Unit-1: Partial Differential Equation.	Dr. Debashis Biswas	10
			Unit-1: Partial Differential Equation.		10
			Unit-1: Partial Differential Equation.		10
			Unit-1: Partial Differential Equation.		10
			Unit-2: Multivariate Calculus-II	Dr. Nanda Das	10
			Unit-2: Multivariate Calculus-II		10
			Unit-2: Multivariate Calculus-II		8
	Unit-2: Multivariate Calculus-II		7		
	CC-10 (TH+TU)	Mechanics	Unit-1: Coplanar forces, Force system in space, Friction	Dr. Bimal Kumar Sett	15
			Unit-2: Virtual work, Stability of equilibrium.	Dr. Bimal Kumar Sett	10
			Unit-3: Kinematics of a Particle, Newton Laws of motion and Law of gravitation.	Dr. Nanda Das	20
Unit-4: Problems in particle dynamics, Planar motion of a particle, Motion of a particle in 3D.			Dr. Nanda Das	20	
Unit-5: Many particles system: Principle of (i) Linear momentum, (ii) Angular momentum. The Energy Principle.			Dr. Nanda Das	10	
SEC-B1 (TH)	Scientific Computing with R Software.	Numeric Computation, Plotting of functions, Programming and Applications.	Dr. Nanda Das	30	
[CBCS, 2018] Sem - 4 General (January – June, 2024)	GE-4 (TH+TU)	Mathematics GE4	Unit-1: Algebra-II (Vector Space)	Dr. Babli Saha	10
			Unit-1: Algebra-II (Group Theory, Ring and Field)	Dr. Somnath Bandyopadhyay	10
			Unit-2: Computer Science and Programming.	Dr. Nanda Das	15
			Unit-3: Probability and Statistics	Dr. Nanda das	25





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[CBCS, 2018] Sem - 5 Honours (July – December, 2023)	CC-11 (TH+TU)	Probability & Statistics	Unit-1: Basic theory, Distribution-I, Expectation-I.	Tuhin Subhra Bhattacharya	20
			Unit-2: Distribution-II, Expectation-II.	Tuhin Subhra Bhattacharya	15+5
			Unit-3: Convergence in Probability.	Dr. Nanda Das	5
			Unit-4: Sampling Distribution, Estimation of Parameters.	Dr. Nanda Das	15
			Unit-5: Statistical Hypothesis.	Dr. Nanda Das	15
	CC-12 (TH+TU)	Group Theory-II & Linear Algebra-II	Unit-1: Group Theory	Dr. Somnath Bandyopadhyay	35
			Unit-2: Linear Algebra	Dr. Babli Saha	40
	DSE-A1 (TH+TU)	Bio Mathematics	Unit-1: Math. Biology and Modelling process.	Dr. Nanda Das	25
			Unit-2: Activator and Inhibitor system model.	Dr. Nanda Das	30
			Unit-3: Discrete models.	Dr. Nanda Das	15+5
	DSE-B1 (TH+TU)	Linear Programming & Game Theory	Unit-1: Formulation and Basic theory of LPP.	Dr. Babli Saha	15
			Unit-2: Simplex method, Two-phase method.	Dr. Babli Saha	20
			Unit-3: Duality Theory and applications.	Dr. Somnath Bandyopadhyay	10
			Unit-4: Transportation and Assignment problems and Game Theory.	Dr. Somnath Bandyopadhyay	30




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[CBCS, 2018] Sem -6 Honours (January – June, 2024)	CC-13 (TH+TU)	Metric Space & Complex Analysis	Unit-1: Metric Space	Dr. Babli Saha	40
			Unit-2: Complex Analysis	Dr. Babli Saha	35
	CC-14 (TH+P)	Numerical Methods	Unit-1: Error & Numerical Algorithms	Dr. Bimal Kumar Sett	5
			Unit-2: Approximation and Interpolation	Dr. Bimal Kumar Sett	15
			Unit-3: Differentiation and Integration.	Dr. Bimal Kumar Sett	10
			Unit-4: Solution of Transcendental Equations.	Dr. Nanda Das	10
			Unit-5: Solution of linear system of equations.	Dr. Nanda Das	10
			Unit-6: Solution of ODE	Dr. Nanda Das	5
		Numerical Methods LAB	Using C Programming (Computer Lab)	Dr. Nanda Das / Dr. Bimal Kumar Sett	20
	DSE-A2 (TH+TU)	Mathematical Modelling	Unit-1: Power Series Solution of Bessel's, Legendre's equations, Laplace Transform.	Dr. Debashis Biswas	20
			Unit-2: Monte Carlo Simulation modelling, Queuing models, Harbor system, Optimization modelling, LP model, Simplex Method, Sensitivity analysis.	Dr. Nanda Das	45+10
	DSE-B2 (TH+TU)	Point Set Topology	Unit-1: Topological Space, basis up to isometry and metric invariants.	Dr. Somnath Bandyopadhyay	35
			Unit-2: First Countability, etc. up to Heine's continuity criterion.	Dr. Somnath Bandyopadhyay	15
Unit-3: Connected Spaces, etc upto Bolzano- Weiertrass property of metric space X.			Dr. Somnath Bandyopadhyay	25	




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