Maulana Azad College
Department of Mathematics
Teaching / Lesson Plan 2018-19, Undergraduate Mathematics (Honours and General)

Semester	Period of Semester	Tentative Dates of University Exam* (*Follow the latest notification by CU)	Name of the Faculty	Course Code	Paper Name	Brief Description of the Topics	No. of Lectures
Sem-1 (CC1)	**July'18 – Dec.'18**	**Follow the latest notification by CU**	Dr. Nanda Das Dr. Kartik Chandra Basak	CC1-(TH+TU)	Calculus, Geometry & Vector Analysis	Unit-1: Calculus	25+5
						Unit-2: Geometry-2D	10
						Unit-2: Geometry-3D	20
						Unit-3: Vector Analysis	15
Sem-1 (CC2)			Dr. Babli Saha Dr. Somnath Bandyopadhyay	CC2-(TH+TU)	Algebra	Unit-1: Complex Number, Theory of Equation, Inequality, Linear difference Equation.	30
						Unit-3: Matrix Algebra, Solution of System of Linear Equations.	15
						Unit-2: Relation, Mapping and Integers.	30
Sem-1 (GE1)			Dr. Somnath Bandyopadhyay Dr. Babli Saha Dr. Kartik Chandra Basak Dr. Nanda Das	GE1-(TH+TU)	Mathematics-GE1	Unit-1: Algebra-I	10
						Unit-2: Differential Calculus-I	20
						Unit-3: Differential Equation-I	10
						Unit-4: Coordinate Geometry	20
Sem-2 (CC3)	**Jan'19-Jun'19**	**Follow the latest notification by CU**	Dr. Somnath Bandyopadhyay	CC3-(TH+TU)	Real Analysis	Unit-1: Real Numbers	30
						Unit-2: Real Sequence	30
						Unit-3: Infinite Series	10+5
Sem-2 (CC4)			Dr. Babli Saha	CC4-(TH+TU)	Group Theory-I	Unit-1: Group & Subgroup	30
						Unit-2: Cyclic Group	25
						Unit-3: Normal Subgroup	20
Sem-2 (GE2)			Dr. Babli Saha Dr. Kartik Chandra Basak Dr. Nanda Das Dr. Somnath Bandyopadhyay	GE2-(TH+TU)	Mathematics GE2	Unit-1: Differential Calculus-II	15
						Unit-2: Differential Equation-II	10
						Unit-3: Vector Algebra	10
						Unit-4: Discrete Mathematics	25

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Dr. Kartik Chandra Basak	Part-II (Hons.)	Paper-III	Mod-VI	Group-B (35 Marks)	Differential Equation up to Second order Variable Coefficients and Homogeneous Equations.	30	Rest of ODE and the PDE.	30	Details to be found in the Syllabus of Calcutta University
		Paper-IV	Mod-VIII	Group-C (25Marks)	Analytical Dynamics of a Particle: Motion in a Straight Line, Simple Harmonic Motion, Vertical motion under resistance, Work Power Energy, Collision of elastic bodies.	25	Motion in a plane(Cartesian & Polar Coordinates), Projectile motion under resistance. Constraints Motion without Friction.	20	
	Part-III (Hons.)	Paper-VI	Mod-XI	Group-A (10 Marks)	Vector Integration: Line Integral.	10	Surface Integral and Volume Integral and related theorems.	10	Details to be found in the Syllabus of Calcutta University
			Mod-XI	Group-B (20 Marks)	Statics-II: Virtual Work, Centre of Gravity.	20	Statics-II: Stable and Unstable equilibrium, Forces in three dimensions.	20	
			Mod-XII	Group-A (25 Marks)	Equilibrium of fluids in a given field of forces, Thrust in Plane Surface, Centre of Pressure.	20	Rotating Fluid, Stable and Unstable equilibrium and Gas.	20	
		Paper-VIII	Mod-XVI	Group-A (25 Marks)	Numerical Analysis: Integration , Solution of Transcendental equation.	20	Solution of Ordinary Differential Equation.	15	

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the Teacher	Title of the Teaching Assignment	Paper	Module	Group	Unit-I Topic to be covered before Mid-Term Examination	Number of Classes Required	Unit-II Topic to be covered before Test Examination.	Number of Classes Required	Remarks
Dr. Somnath Bandyopadhyay	Part-II (Hons.)	Paper-III	Mod-V	Group-A (15 Marks)	Modern Algebra II : Cosets and Lagrange's theorem, Cyclic groups.	15	Modern Algebra II: Rings and Fields	15	Details to be found in the Syllabus of Calcutta University
			Mod-VI	Group-A (15 Marks)	Analysis II: Infinite series of Real numbers	15	Analysis II: Derivative of Real-valued Function of real variables.	20	
		Paper-IV	Mod-VIII	Group-A (15 Marks)	Analytical Geometry of Three Dimensions: Sphere, Cone , Cylinder and Conicoid.	15	Analytical Geometry of Three Dimensions: Tangents and Normals, Enveloping Cone, Surface of Revolution, Generating Lines, Canonical form.	20	
	Part-III (Hons.)	Paper-V	Mod-IX	Group-A (50 Marks)	Analysis III: Compactness in R, Bounded Variation, Riemann Integration.	30	Analysis III: Sequence and Series of Functions of a real variable, Power Series.	25	Details to be found in the Syllabus of Calcutta University
			Mod-X	Group-A (20 Marks)	Modern Algebra III : Linear Transformation on Vector Spaces. Linear Transformation and Matrices.	15	Linear Algebra II : Normal Subgroup, Homomorphism and Isomorphism of Groups.	15	
				Group-B (15 Marks)	Tensor Calculus: Generalised concept of a vector. Contravariant and Covariant vectors.	10	Tensor Caculus: Rest of the Tensor Calculus.	10	
				Group-C (15 Marks)	Differential Equation-II: Series Solution at an Ordinary Point.	10	Differential Equation-II: Laplace Transformation and its Application in ODE.	10	

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Dr. Babli Saha	**Part-II (Hons.)**	Paper-IV	Mod-VII	Group-A (30 Marks)	Function of Several Variables: Defination, Double limit , Repeated limit, Partial differentiation, Chain rule, related theorem.	20	Homogeneous function and its applications, Jacobian and its applications, Implicit function and simple problems.	20	Details to be found in the Syllabus of Calcutta University
				Group-B (20 Marks)	Application of Calculus: Tangents and Normals, Asymptotes, Curvature.	15	Envelopes, Singular Points, Curve Tracing, Area enclosed by a curve, C.G, Moments and Products of Inertia.	20	
	Part-III (Hons.)	Paper-VII	Mod-XIII	Group-A (20 Marks)	Analysis-IV: Fourier Series, Multiplr Integral and its application to determination of volume and surface area.	15	Analysis-IV: Improper Integration and their convergence.	15	Details to be found in the Syllabus of Calcutta University
				Group-B (15 Marks)	Metric Space:	20			
				Group-C (15 Marks)			Complex Analysis	20	
			Mod-IV	Group-A (30 Marks)	Probability: Upto Expectation-II	40	Some Special Distribution, Convergence in Probability.	15	
				Group-B (20 Marks)	Statistics: Upto Sampling Distribution	10	Statistics: Bivariate Sample, Confidance Interval, Testing of Hypothesis.	20	

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Dr. Nanda Das	Part-II (Hons.)	Paper-III	Mod-V	Group-B (35 Marks)	Linear Programming	40	Game Theory	20	Details to be found in the Syllabus of Calcutta University
		Paper-IV	Mod-VIII	Group-B (10 Marks)	Statics: Coplanar Forces	10	Statics: Friction.	10	
	Part-III (Hons.)		Mod-XII	Group-B (25 Marks)	Rigid Dynamics: Moment of Inertia, D'Alembert Principle, Motion about Fixed Axis up to Compound Pendulum.	25	Reaction on Fixed axis, Motion in Two-dimension, Impulse in 2D, Angular momentum & Energy equation.	20	**Details to be found in the Syllabus of Calcutta University**
		Paper-VIII	Mod-XV	Group-A (25 Marks)	Numerical Analysis: Interpolation , Numerical Differentiation & Integration.	20	Numerical Solution of Linear System of Equations, Transcendental equation and ODE.	20	
				Group-B (25 Marks)	Boolean Algebra: Basic Idea of Boolean Algebra and Switching Circuits and their applications.	10	Computer Programming: Concept of Algorithm, Flowchart and corresponding Programming in C	20	
			Mod-IV	Group-B (25 Marks)	Numerical Practical.(with Calculator)	25	Computer Practical in C	20	

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Dr. Nanda Das	**Part-II (General)**	Paper-III	Mod-V	Group-A (20 Marks)	Numerical Methods:	10			Details to be found in the Syllabus of Calcutta University
			Mod-V	Group-B (30 Marks)			Linear Programming	12	
			Mod-VI	Group-A (50 Marks)	Velocity and acceleration of a particle, Motion in a plane curve, Work Power Energy, Impluse.	6	Motion in a Straightline, Simple Harmonic Motion, Motion in two-dimensions, Central Orbit, Motion under Inverse Square law.	9	
Dr. Babli Saha	**Part-II (General)**	Paper-II	Mod-IV	Group-A (25 Marks)			Differential Calculus:	20	Details to be found in the Syllabus of Calcutta University
				Group-B (15 Marks)			Integral Calculus:	10	
				Group-A (10 Marks)			Differential Equation:	8	
Dr. Somnath Bandyopadhyay	**Part-II (General)**	Paper-II	Mod-III	Group-A (25 Marks)	Modern Algebra: Concept of Set, Mappings, Group Theory, Vector Space.	25			Details to be found in the Syllabus of Calcutta University
				Group-B (25 Marks)			Rectangular Cartesian Coordinates, Equation of Plane, Straight line, Sphere and Cone.	20	

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