

**Maulana Azad College**  
**Department of Mathematics**

**Teaching / Lesson Plan 2021-22, Undergraduate Mathematics (Honours and General) under CBCS, 2018**

| Semester       | Period of Semester              | Tentative Dates of University Exam*<br>(*Follow the latest notification by CU) | Name of the Faculty       | Course Code                 | Paper Name                           | Brief Description of the Topics   | Minimum No. of Lectures |
|----------------|---------------------------------|--|---------------------------|-----------------------------|--------------------------------------|---|-------------------------|
| Sem-1<br>(CC1) | July'21 - Dec.'21               | Follow the latest notification by CU   | Dr. Nanda Das             | CC1-(TH+TU)                 | Calculus, Geometry & Vector Analysis | Unit-1: Calculus  | 25+5                    |
|                |                                 |  | Dr. Kartik Chandra Basak  |                             |                                      | Unit-2: Geometry-2D   | 10                      |
|                |                                 |  |                           |                             |                                      | Unit-2: Geometry-3D   | 20                      |
|                |                                 |  |                           |                             |                                      | Unit-3: Vector Analysis   | 15                      |
| Sem-1<br>(CC2) |                                 |  | Dr. Babli Saha            | CC2-(TH+TU)                 | Algebra                              | Unit-1: Complex Number, Theory of Equation, Inequality, Linear Difference | 30                      |
|                |                                 |  |                           |                             |                                      | Unit-3: Matrix Algebra, Solution of System of Linear Equations.           | 15                      |
| Sem-1<br>(GE1) |                                 |  | Dr. Somnath Bandyopadhyay | GE1-(TH+TU)                 | Mathematics-GE1                      | Unit-2: Relation, Mapping and Integers.                                   | 30                      |
|                |                                 |  |                           |                             |                                      | Unit-1: Algebra-I   | 10                      |
|                | Unit-2: Differential Calculus-I | 20   |                           |                             |                                      |   |                         |
|                | Unit-3: Differential Equation-I | 10   |                           |                             |                                      |   |                         |
|                | Dr. Nanda Das                   |  |                           | Unit-4: Coordinate Geometry | 20                                   |   |                         |

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| Sem-2<br>(CC3) | Jan'22 - Jun'22                  | 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<br>(CC4) |                                  |  | Dr. Babli Saha            | CC4-(TH+TU)                  | Group Theory-I  | Unit-1: Group & Subgroup        | 30                      |
|                |                                  |  |                           |                              |                 | Unit-2: Cyclic Group            | 25                      |
| Sem-2<br>(GE2) |                                  |  | Dr. Babli Saha            | GE2-(TH+TU)                  | Mathematics GE2 | Unit-3: Normal Subgroup         | 20                      |
|                | Unit-1: Differential Calculus-II | 15   |                           |                              |                 |                                 |                         |
|                | Unit-2: Differential Equation-II | 10   |                           |                              |                 |                                 |                         |
|                | Unit-3: Vector Algebra           | 10   |                           |                              |                 |                                 |                         |
|                | Dr. Somnath Bandyopadhyay        |  |                           | Unit-4: Discrete Mathematics | 25              |                                 |                         |

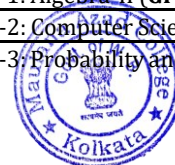


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| Sem-3 (CC5)    | July'21 - Dec.'21          | Follow the latest notification by CU | Dr. Somnath Bandyopadhyay            | CC3-(TH+TU)   | Theory of Real Functions                    | Unit-1: Limit and Continuity of functions   | 40                      |
| Sem-3 (CC6)    |                            |                                      | Dr. Babli Saha                       | CC4-(TH+TU)   | Ring Theory & Linear Algebra-I              | Unit-2: Differentiability of Functions  | 35                      |
| Sem-3 (CC7)    |                            |                                      | Dr. K. C. Basak                      | CC6-(TH+TU)   | Ordinary Differential                       | Unit-1: Ring Theory   | 35                      |
| Sem-3 (SEC-A1) |                            |                                      | Dr. Nanda Das                        |   |   | Unit-2: Linear Algebra  | 40                      |
| Sem-3 (GE-3)   |                            |                                      | Dr. Nanda Das                        | SEC-A1-TH   | C-Programming Language                      | Unit-1: Ordinary Differential Equation  | 40                      |
|                |                            |                                      | Dr. Babli Saha                       | GE3-(TH+TU)   | Mathematics-GE3                             | Unit-2: Multivariate Calculus-I   | 35                      |
|                |                            |                                      | Dr. K.C. Basak                       |   |   | Unit-1: Integral Calculus   | 10                      |
|                |                            |                                      | Dr. Somnath Bandyopadhyay            |   |   | Unit-2: Numerical Methods   | 25                      |
|                |                            |                                      | Dr. Nanda Das                        |   |   | Unit-3: Linear Programming (Theory)   | 10                      |
|                |                            |                                      |                                      |   |   | Unit-3: Linear Programming (Theory)   | 15                      |
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| Sem-4 (CC8)    | Jan'22 - Jun'22            | Follow the latest notification by CU | Dr. Somnath Bandyopadhyay            | CC8-(TH+TU)   | Riemann Integration and Series of Functions | Unit-1: Riemann Integration   | 35                      |
| Sem-4 (CC9)    |                            |                                      | Dr. Babli Saha                       |   |   | Unit-3: Power Series  | 5                       |
| Sem-4 (CC10)   |                            |                                      | Dr. K.C. Basak                       | CC9-(TH+TU)   | PDE & Multivariate Calculus-II              | Unit-2: Improper Integral   | 10                      |
| Sem-4 (SEC-B)  |                            |                                      | Dr. Nanda Das                        |   |   | Unit-3: Sequence of Functions, Series of Functions and Fourier Series.                          | 25                      |
| Sem-4 (GE4)    |                            |                                      | Dr. Kartik Chandra Basak             | CC10-(TH+TU)  | Mechanics                                   | Unit-1: Partial Differential Equation.  | 40                      |
|                |                            |                                      | Dr. Nanda Das                        |   |   | Unit-2: Multivariate Calculus-II  | 35                      |
|                |                            |                                      | Dr. Kartik Chandra Basak             |   |   | Unit-3: Kinematics of a Particle, Newton Laws of motion and Law of gravitation.                 | 20                      |
|                |                            |                                      | Dr. Nanda Das                        |   |   | Unit-4: Problems in particle dynamics, Planar motion of a particle, Motion of a particle in 3D. | 20                      |
|                |                            |                                      | Dr. Nanda Das                        |   |   | Unit-1: Coplanar forces, Force system in space, Friction  | 15                      |
|                |                            |                                      | Dr. Nanda Das                        |   |   | Unit-2: Virtual work, Stability of equilibrium.   | 10                      |
|                | Dr. Kartik Chandra Basak   | SEC-B-TH                             | Scientific Computing with Sage Math. | Unit-5: Many particles system: Principle of (i) Linear momentum, (ii) Angular momentum. The Energy Principle. | 10  |   |                         |
|                | Dr. Babli Saha             | GE4-(TH+TU)                          | Mathematics GE4                      | Numeric Computation, Plotting of functions, Programming and Applications.                                     | 30  |   |                         |
|                | Dr. Somnath Bandyopadhyay  | GE4-(TH+TU)                          | Mathematics GE4                      | Unit-1: Algebra-II (Vector Space)   | 10  |   |                         |
|                | Dr. Nanda Das              | GE4-(TH+TU)                          | Mathematics GE4                      | Unit-1: Algebra-II (Group Theory, Ring and Field)   | 10  |   |                         |
|                | Dr. . Kartik Chandra Basak | GE4-(TH+TU)                          | Mathematics GE4                      | Unit-2: Computer Science and Programming.   | 15  |   |                         |
|                |                            |                                      |                                      | Unit-3: Probability and Statistics  | 25  |   |                         |



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| Sem-5<br>(CC11)   | July'21 - Dec.'21  | Follow the latest notification by CU | Dr. Kartik Chandra Basak                     | CC11-(TH+TU)  | Probability & Statistics            | Unit-1: Basic theory, Distribution-I, Expectation-I.     | 20                      |
|   |                    |                                      | Dr. Nanda Das                                |   |                                     | Unit-2: Distribution-II, Expectation-II.                 | 15+5                    |
|   |                    |                                      |  |   |                                     | Unit-3: Convergence in Probability.                      | 5                       |
|   |                    |                                      |  |   |                                     | Unit-4: Sampling Distribution, Estimation of Parameters. | 15                      |
|   |                    |                                      | Unit-5: Statistical Hypothesis.              |   |                                     | 15   |                         |
| Sem-5<br>(CC12)   |                    |                                      | Dr. Somnath Bandyopadhyay                    | CC12-(TH+TU)  | Group Theory-II & Linear Algebra-II | Unit-1: Group Theory                                     | 35                      |
|   |                    |                                      |  |   |                                     | Unit-2: Linear Algebra                                   | 40                      |
| Sem-5<br>(DSE-A1)   |                    |                                      | Dr. Nanda Das                                | DSE-A1 (TH+TU)  | Bio Mathematics                     | Unit-1: Math. Biology and Modelling process.             | 25                      |
|   |                    |                                      |  |   |                                     | Unit-2: Activator and Inhibitor system model.            | 30                      |
|   |                    |                                      |  |   |                                     | Unit-3: Discrete models.                                 | 15+5                    |
| Sem-5<br>(DSE-B1)   | Dr. Babli Saha     | DSE-B1 (TH+TU)                       | Linear Programming & Game Theory             | Unit-1: Formulation and Basic theory of LPP.                    | 15                                  |  |                         |
|   |                    |                                      |  | Unit-2: Simplex method, Two-phase method.                       | 20                                  |  |                         |
|   |                    |                                      |  | Unit-3: Duality Theory and applications.                        | 10                                  |  |                         |
|   |                    |                                      |  | Unit-4: Transportation and Assignment problems and Game Theory. | 30                                  |  |                         |
| Dr. Somnath Bandyopadhyay                                       | DSE-B1 (TH+TU)     | Linear Programming & Game Theory     | Unit-1: Formulation and Basic theory of LPP. | 15  |                                     |  |                         |
|   |                    |                                      | Unit-2: Simplex method, Two-phase method.    | 20  |                                     |  |                         |
| Unit-3: Duality Theory and applications.                        | 10                 |                                      |  |   |                                     |  |                         |
| Unit-4: Transportation and Assignment problems and Game Theory. | 30                 |                                      |  |   |                                     |  |                         |

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| Sem-6<br>(CC13)   | Jan'22 - Jun'22              | Follow the latest notification by CU | Dr. Babli Saha                            | CC13-(TH+TU)                                    | Metric Space & Complex Analysis           | Unit-1: Metric Space                           | 40  |                          |
| Sem-6<br>(CC14)   |                              |                                      | Dr. Kartik Chandra Basak                  |   |   | CC14-(TH)                                      | Numerical Methods   | Unit-2: Complex Analysis |
|                   |                              |                                      |   | Unit-1: Error & Numerical Algorithms            | 5   |  |   |                          |
|                   |                              |                                      |   | Unit-2: Approximation and Interpolation         | 15  |  |   |                          |
|                   |                              |                                      |   | Unit-3: Differentiation and Integration.        | 10  |  |   |                          |
|                   |                              |                                      |   | Unit-4: Solution of Transcendental Equations.   | 10  |  |   |                          |
|                   |                              |                                      |   | Unit-5: Solution of linear system of equations. | 10  |  |   |                          |
| Sem-6<br>(DSE-A2) |                              |                                      | Dr. Nanda Das                             | CC14-P  | Numerical Lab                             | Unit-6: Solution of ODE                        | 5   |                          |
|                   |                              |                                      |   |   |   | Using C Programming (Computer Lab)             | 20  |                          |
| Sem-6<br>(DSE-A2) |                              |                                      | Dr. Nanda Das                             | DSE-A2  | Fluid Statics & Elementary Fluid Dynamics | Unit-1: Introduction and Fundamental Concepts. | 20  |                          |
|                   | Unit-2: Hydrostatics and Gas | 25                                   |   |   |   |  |   |                          |
|                   | Unit-3: Kinematics of Fluid  | 15                                   |   |   |   |  |   |                          |
| Sem-6<br>(DSE-B2) | Dr. Kartik Chandra Basak     | DSE-A2                               | Fluid Statics & Elementary Fluid Dynamics | Unit-4: Conservation Equations.                 | 15  |  |   |                          |
|                   |                              |                                      |   | Dr. Somnath Bandyopadhyay                       | DSE-B2                                    | Point Set Topology                             | Unit-1: Topological Space, basis up to isometry and metric invariants.            | 35                       |
|                   |                              |                                      |   |   |   |  | Unit-2: First Countability, etc. up to Heine's continuity criterion.              | 15                       |
|                   |                              |                                      |   |   |   |  | Unit-3: Connected Spaces, etc. up to Bolzano-Weierstrass property of metric space | 25                       |



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