

**M.Sc. Mathematics (Maths)**

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**M.Sc. Mathematics (Maths & Computing)**

**Course Structure**

| Semester I                               |           | Semester II                  |           | Semester III                               |           | Semester IV                |           |
|--|-----------|------------------------------|-----------|--|-----------|----------------------------|-----------|
| Analysis of functions of Single Variable | 3         | Complex Analysis             | 3         | Analysis of Functions of Several Variables | 3         | Advanced Course-I          | 3         |
| Linear Algebra                           | 3         | Elements of Groups and Rings | 3         | Functional Analysis                        | 3         | Advanced Course-II         | 3         |
| Ordinary Differential Eqns               | 3         | Measure and Integration      | 3         | Partial Differential Eqns                  | 3         | Elective III               | 3         |
| Probability Theory                       | 3         | Discrete structures          | 3         | Elective II                                | 3         | Elective IV                | 3         |
| Basics of Programming                    | 3         | Elective I                   | 3         | Thesis I                                   | 6         | Thesis II                  | 6         |
|  |           |                              |           |  |           |                            |           |
| <b>Total</b>                             | <b>15</b> |                              | <b>15</b> |  | <b>18</b> |                            | <b>18</b> |
|  |           |                              |           |  |           |                            |           |
| 4 Core + 1 Lab                           |           | 4 Core + 1 Elec              |           | 3 Core + 1 Elec + 1 Thesis                 |           | 2 Core + 2 Elec + 1 Thesis |           |

## List of Electives

MA5050 MATHEMATICAL METHODS  
MA5040 TOPOLOGY  
MA5100 INTRODUCTION TO ALGEBRAIC TOPOLOGY  
MA5110 FOURIER ANALYSIS AND APPLICATIONS  
MA5140 MATHEMATICAL INTRODUCTION TO ELLIPTIC CURVES  
MA5150 ALGEBRAIC NUMBER THEORY  
MA5160 AN INTRODUCTION TO MODULAR FORMS  
MA5170 BASIC INTRODUCTION TO ALGEBRAIC GEOMETRY  
MA5180 ADVANCED MEASURE THEORY  
MA5190 ADVANCED PARTIAL DIFFERENTIAL EQUATIONS  
MA6070 APPROXIMATION THEORY  
MA6090 OPERATOR THEORY  
MA6110 CONVEX FUNCTIONS AND THEIR APPLICATIONS  
MA6120 AN INTRODUCTION TO OPERATOR ALGEBRAS  
MA6130 BANACH SPACE THEORY  
MA6150 DISCRETE DYNAMICAL SYSTEMS  
MA6160 BANACH ALGEBRAS  
MA6190 TRANSCENDENTAL NUMBER THEORY  
MA6080 MEASURE THEORETIC PROBABILITY  
MA6100 MATHEMATICS BEHIND MACHINE LEARNING  
MA5120 NUMERICAL LINEAR ALGEBRA  
MA6050 WAVELETS AND APPLICATIONS  
MA6060 REDUNDANT AND SPARSE REPRESENTATION THEORY  
MA6040 FUZZY LOGIC CONNECTIVES AND THEIR APPLICATIONS  
MA6140 COMPRESSIVE SENSING