

The PhD Programme

PhD Courses

The following courses are likely to be offered in each of the corresponding semesters.

First Semester

Course Code	Name of the Course
MA 811	Algebra I
MA 813	Measure Theory
MA 815	Differential Topology
MA 817	Partial Differential Equations I
MA 833	Weak Convergence and Martingale Theory
MA 839	Advanced Commutative Algebra
MA 861	Combinatorics-I
MA 863	Theoretical Statistics I
MA 867	Statistical Modelling- I

Second Semester

Course Code	Name of the Course
MA 812	Algebra II
MA 814	Complex Analysis

Course Code	Name of the Course
MA 816	Algebraic Topology
MA 818	Partial Differential Equations II
MA 820	Stochastic Processes
MA 823	Probability I
MA 824	Functional Analysis
MA 862	Combinatorics-II

1. The credit requirements for students having M.Sc. or equivalent qualification shall be 34 to 46 credits.
2. Credits acquired through PG level courses shall be 24 or more.
3. Students may earn upto a maximum of 8 credits through seminars which should be spread over two semesters.
4. Each student must credit at least 3 of the 13 courses MA 813 – 822 & MA 824.

PhD students are also required to take two courses on communication skills, viz, HS791 (Communication Skills I) offered by the HSS department and MA792 (Communication Skills II) offered by the Mathematics department

- a) These courses are compulsory for all Ph.D. students.
- b) Ph.D. students are normally required to clear the Communication skills course within the first two semesters.
- c) These courses are an addition to the minimum course credit requirement prescribed by the DPGCs/IDPCs.
- d) Students having a qualifying degree from IIT who have cleared the 'Communication Skills' course during their M.Tech. Programme are exempted from this requirement.

In addition to the above courses, some or all of the following courses may be offered subject to sufficient demand from the students and availability of faculty.

First Semester

Course Code	Name of the Course
MA 841	Topics in Algebra I
MA 843	Topics in Analysis I
MA 845	Topics in Combinatorics I
MA 847	Topics in Geometry I
MA 849	Topics in Topology I
MA 851	Topics in Number Theory I
MA 853	Topics in Differential Equations I
MA 855	Topics in Numerical Analysis I
MA 857	Topics in Probability I
MA 859	Topics in Statistics I
MA 864	Topics in Category Theory I
MAS 801	Seminar
<u>Second Semester</u>	
Course Code	Name of the Course
MA 842	Topics in Algebra II
MA 844	Topics in Analysis II

Course Code	Name of the Course
MA 846	Topics in Combinatorics II
MA 848	Topics in Geometry II
MA 850	Topics in Topology II
MA 852	Topics in Number Theory II
MA 854	Topics in Differential Equations II
MA 856	Topics in Numerical Analysis II
MA 858	Topics in Probability II
MA 860	Topics in Statistics II
MA 865	Topics in Category Theory II
MAS 802	Seminar