

# Advanced Combinatorics

Moscow Institute of Physics and Technology (National Research University)

Degree or qualification is awarded: **Master's degree**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **435 000 RUB per year**

Programme webpage at the university website: <https://mipt.ru/english/edu/master/combinatorics>

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The programme is focused on modern aspects of combinatorics (discrete mathematics) and its applications in computer science and in the theory of complex networks.

## KEY ADVANTAGES:

We admit students with solid knowledge of basic math (algebra, analysis, probability, discrete mathematics), who wish to study advanced combinatorial techniques and applications.

We teach advanced state-of-the-art methods used in discrete mathematics and foster intuition of working with discrete objects and models. We employ leading MIPT professors and invite visiting professors from renowned research groups in the field of combinatorial mathematics.

We provide our students with an opportunity to do research in various topics of discrete mathematics – both pure and applied.

## STUDIED COURSES INCLUDE:

“Introductory” courses with emphasis on combinatorial viewpoint:

Combinatorics;

Graph Theory;

Probability;

Calculus and algebra;

Common methods:

Discrete Analysis;

Extremal combinatorics;

Specialized topics:

Random graphs;

Advanced graph theory;

Combinatorial geometry;

Additive combinatorics;

Courses with applied flavour:

Game theory;

Discrete Optimization;

Computational complexity;

Complex networks.

## Specializations within this programme