

**BULGARIAN ACADEMY OF SCIENCES  
INSTITUTE OF MATHEMATICS AND INFORMATICS**

Approved:

(Acad. V. Drensky, Director of IMI-BAS)

**QUALIFICATION PROFILE**

**Higher Education Area:**

4. Natural Sciences, Mathematics, and Informatics

**Professional Field:**

4.5. Mathematics

**PhD Programme:**

Geometry and Topology

The PhD programme in Geometry and Topology provides the third degree of higher education for acquiring the educational and scientific degree of Doctor of Philosophy.

This Qualification Profile determines the knowledge, skills, personal and professional competences of PhD students who have pursued and completed the PhD programme in Geometry and Topology.

**Requirements for admission and training**

The admission and training of PhD students are in accordance with the legal requirements of:

- the Act on Higher Education;
- the Act on Development of the Academic Staff in the Republic of Bulgaria;
- the Regulations on the Implementation of the Act on Development of the Academic Staff in the Republic of Bulgaria;
- the Regulations on the Conditions and Order for Acquiring Scientific Degrees and Occupying Academic Positions at the Bulgarian Academy of Sciences;
- the Regulations on the Conditions and Order for Acquiring Scientific Degrees and Occupying Academic Positions at the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences;
- the Rules for the Activity of the Training Centre (TC) and the Academic Council (AC) of BAS.

The duration of the programme is:

- 3 years in case of full-time training;
- 4 years in case of part-time training;
- up to 3 years in case of self-study.

The PhD programme in Geometry and Topology provides the opportunity to obtain the educational and scientific degree of Doctor of Philosophy in professional field 4.5. Mathematics upon:

- successful completion of all stages of the PhD student's individual plan;
- successful defence of the thesis.

## **Aim**

The PhD programme in Geometry and Topology aims to train highly qualified specialists with in-depth fundamental and professional competence for individual and team work in research and applied activities as well as teaching in the field of Geometry and Topology, by creating skills for planning, organising and performing scientific and applied research and presenting its results.

The training in the PhD programme in Geometry and Topology is in full compliance with the mission and objectives of IMI-BAS, set out in the Research Development Strategy of the Institute of Mathematics and Informatics, and in particular with its priority area „**Development of fundamental and applied research in the field of mathematical structures**“.

## **Competences**

Holders of the educational and scientific degree of Doctor of Philosophy, awarded by IMI-BAS, shall have acquired intellectual qualities, knowledge, practical skills and habits for:

- independent study;
- teamwork;
- planning and carrying out scientific and practical tasks on time;
- setting problems, proposing solutions, justifying choices of approaches and methods;
- formulating, expressing, and defending scholar arguments, ideas, and concepts;
- carrying out independent theoretical and applied research by applying modern mathematical tools;
- conducting comprehensive scientific studies;
- presenting scientific results orally and in writing;
- doing all of the above fluently in English – the global language of Mathematics.

More specifically, the successful PhD graduates in Geometry and Topology at IMI-BAS shall:

- have acquired a wide professional horizon in the field of the doctoral programme in theoretical and applied aspect;

- have acquired skills for creating and applying modern and original approaches in theoretical and/or applied research in the field of the dissertation;
- be able to use modern information and communication technologies to facilitate research work;
- have gained experience in participating in national and international projects, organizing national and international scientific events;
- be skilled in presenting the achieved results at seminars, national and international conferences and other scientific forums;
- have acquired a high level of awareness of the world scientific achievements in the field of Geometry and Topology.

## Careers

PhD Graduates in Geometry and Topology are highly qualified specialists, who can work as:

- lecturers in universities, colleges, etc.;
- researchers in scientific institutes and laboratories;
- leaders or members of research teams working on national or international projects in fundamental or applied sciences;
- evaluators of projects, dissertations, habilitation theses, publications in specialized journals in the field of mathematical sciences;
- consultants on problems of Geometry, Topology and their applications.

A PhD graduate can:

- participate in various forms of continuing qualification (postdoctoral programmes);
- apply for academic positions and obtain scientific degrees.

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The Qualification Profile was approved by the Scientific Council of IMI-BAS on May 15-18, 2020 (Minutes No. 5).