

**PhD Program:** Mathematical analysis  
**Professional Branch:** 4.5 Mathematics  
**Major Field of Study:** Mathematical analysis  
**Faculty:** Faculty of Mathematics and Natural Sciences  
**Department:** Mathematics

**Brief annotation:**

The education of the PhD degree is organized as 6 semesters. The students obtain serious theoretical knowledge of different areas-uniformly distributed sequences, numerical methods Monte Carlo and quasi-Monte Carlo. The possibilities the obtained knowledge to be applied in many branches of the science, like financial mathematics, the practice of the numerical integration and other.

During the education the PhD students develop dissertation (thesis), which in the end of the education will be defended in front of jury. The jury is compound of specialists of above presented scientific branches.

The graduated this doctoral program will be realized as: researches in scientific institutes in Bulgaria and foreign country, to be assistants on mathematical analysis or mathematical in universities and colleges.

**Competences of PhD students completed this program:**

The graduated the doctoral programs must to have the following knowledge, abilities and competences:

- profound knowledge on the qualitative and quantitative theory of the uniformly distributed sequences, Monte Carlo and quasi-Monte Carlo integration and a possibilities to apply these knowledge in different applied branches;
- to build and apply software programs for solving theoretical and applied problems;
- to write scientific papers;
- to prepare presentations and to present him to conferences.

**Curriculum**

The curriculum of the PhD student is elaborated by the tutor depending on the subject of the PhD thesis. At least 4 subjects among the following should be included in the curriculum (including of other subjects is also allowed):

**Sample list of courses**

- Functional analysis - Prof. Oleg Mushkarov, DCs
- Uniformly distributed sequences - Assoc. prof. V. Grozdanov, PhD
- Monte Carlo methods - Assoc. Prof. V. Grozdanov, PhD
- Development and management of scientific projects
- Foreign language - Assis. Prof. B. Georgieva, PhD

**Graduation:**

- Exams - after taking all exams provided in the curriculum, the doctoral student can be admitted to the defense of the dissertation.
- Defense of the PhD thesis - after elaborating and presenting of the thesis, according to the legal provisions.