



## COURSE OVERVIEW

Course title:	Mathematics
Profile:	Academic
Cycle:	Undergraduate
Mode:	Full-time
Honours:	BA

### **The education concept in accordance with the University's Mission and Strategies**

Mathematics is among the classical academic courses, indispensable to the offer of any university in Poland as well as abroad. Teaching mathematics is perfectly in line with the University's endeavour towards an education fulfilling the society's needs and ambitions and furthering the national goals. As such it is essential to the mission and strategy of the University as a whole, and the Faculty of Mathematics and Physics in particular.

The aim of the undergraduate course in mathematics is to provide the students with a broad, general knowledge and understanding of mathematics as well as self-learning skills for individual further development, enabling them to work professionally in different fields where mathematical tools are applied, and to continue their studies into the Master Programme.

### **Learning objectives**

The learning outcomes for the BA in Mathematics are fully within the field of Natural Sciences and the Discipline of Mathematics. The above is true for both the course majors as well as the options, which are all conducted with the applications of mathematics in mind. The teaching staff of both obligatories and options in the Faculty of Mathematics predominantly possess academic degrees in mathematics and pursue their individual research within this discipline.

The objective of the basic courses is to convey essential knowledge to the students and provide them with certain skills from the main branches of higher mathematics. The programme also comprises various courses which provide the space to familiarise the students with the current state of research in mathematics. These are, i.a. lectures and the thesis preparation seminar.

The specialisation contains sets of specific optional courses, aimed at providing the students with an understanding of the current applications of mathematics and developing the skills to apply mathematical tools in other fields of knowledge, especially in finance, cryptography, IT and in education.

**Undergraduates of the specialization in Informatics possess the IT knowledge and skills including i.a. programming languages, algorithms and data structure, operating systems and software engineering databases, being well-prepared to work in the IT sector.**

**Undergraduates are thus well-prepared to co-operate with experts in other disciplines and more likely to find their employment in industry, banking, insurance, IT, administration, academics or education.**

The general-area courses, together with the Humanities and Social science, are aimed at providing the students with basic knowledge in different fields, and accounting for their physical well-being as well as their communication skills in foreign languages. These are conducted by specifically qualified staff in co-operation with the University's other Faculties, such as the Foreign Languages of Physical Education, which is to guarantee a high standard of teaching.

The Undergraduate Programme in Mathematics also contains a 120-hour methodological internship, with the objective of acquiring practical skills to complement and expand the theoretical knowledge gained by the students during the university classes.

An Undergraduate in Mathematics has the key knowledge of mathematics and its applications, can conduct mathematical reasoning, run computations and convey mathematical knowledge in speech and writing, as well as deduct qualitative information from quantitative data, build and use mathematical models essential to the science's applications, and is skilled in using computer-aided methods to solve mathematical problems.

They are prepared to continue the studies into the Master Programme and to further develop their knowledge and skills by individual self-learning.

Potential areas of employment for Undergraduates of all specialisations include: institutions where mathematical methods are applied, research facilities and research & development teams.

### **Learning objective verification and graduation process**

The graduation process is conducted in accordance with the general instruction for the University's Faculty of Mathematics, Physics and Technology, with the added particularities for the Faculty of Mathematics.

Learning objective verification regulations for the Faculty of Mathematics are detailed in the Faculty's Procedure of Learning Objective Verification.

#### **Recruitment regulations**

The recruitment regulations for all the University's faculties are detailed yearly in the Recruitment Resolution by the University's Senate. The Application process is conducted online. The learning programme of the Undergraduate Studies in Mathematics is addressed at candidates in possession of a high-school certificate. The recruitment process is based on the ranking of the average of the grades (points) received in the high-school examination.

#### **Quantitative indicators**

**The 'S' count of the ECTS points received during interactive classes** is calculated in accordance with the below rules:

- a) if the classes are part of a typical learning module of the programme, i.e. are a course with the type and hours detailed in the programme and are interactive, requiring the direct attendance of an academic teacher, the ECTS points attributed to this module/course are fully included into the 'S' count;
- b) the 'S' count does not include the ECTS points attributed after the successful completion of an internship;
- c) the 'S' count includes half of the points attributed to the thesis preparation seminar;
  - for Financial Mathematics and Data Security the 'S' =177 ECTS
  - for Education the 'S' =168 ECTS

**Sum of ECTS points for the general-area courses: 114 ECTS**

**Sum of ECTS points for the practical-skills classes:**

– for Financial Mathematics and Data Security: 100 ECTS

– for Education: 102 ECTS

**Sum of ECTS points for the general courses at the University: 1 ECTS**

**Sum of ECTS points for classes in Humanities and Social Science:**

– for Financial Mathematics and Data Security: 5 ECTS

– for Education: 10 ECTS

**Sum of ECTS points for the internship:**

– for Financial Mathematics and Data Security: 3 ECTS

– for Education: 7 ECTS (continuous internship) + 3 ECTS (midyear internship)

**Sum of ECTS points for options:**

– for Financial Mathematics and Data Security: 69 ECTS (36%)

– for Education: 62 ECTS (34%)

**Sum of ECTS points for Foreign Language classes: 8 ECTS**

**Sum of ECTS points for Physical Education classes: 1 ECTS**

### **Additional information**

The Institute of Mathematics conducts research in the field of mathematical sciences. The areas of research are varied and dependent on the current human resources of the academic staff. The Institute works benefits from formalised and informal bonds with multiple partner institutions from both within the country and abroad, which allows for the learning requirements of the work market and international standards to be integrated into the Institute's development and improvement process.

The learning process is under the regular supervision of the Programme Board of the Faculty of Mathematics. The learning programme of the Faculty of Mathematics is under continuous development, based on the Coordinators' Reports, Career Monitoring reports, consultations with the External Stakeholder Board in the field of the adequacy of the learning process to the work market requirements and in collaboration with the Internal Stakeholders.