

UNIVERSITY OF ZIELONA GÓRA

FACULTY OF MATHEMATICS, COMPUTER SCIENCE AND ECONOMETRICS

FULL-TIME COURSE PROGRAMME

degree course: **MATHEMATICS**

cycle: **second-cycle course**

profile: **general academic**

Recruitment in the academic year

**2022/2023**

Recommended:

Resolution No. 17 of the Mathematics Discipline Council

of 02 March 2022

Approved by Faculty Education Council at the Faculty of Mathematics, Computer Science and Econometrics:

Resolution no 2 of 03 March 2022

## 1. General characteristics of the degree course

<b>Degree course</b>	<b>Mathematics</b>
Cycle	Second cycle
Profile	General academic
Course delivery method	Full-time course
Indication of scientific or artistic disciplines to which the learning outcomes apply (including the major) and specification of the percentage share of ECTS points necessary to obtain qualifications corresponding to the level of education	Exact and natural science  Discipline: Mathematics 100%
Indication of the professional title awarded to graduates	Master's degree
Information on the scientific category held by the basic organisational unit of the university	B

## 2. Indication of the relationship between the degree course and the university's mission and development strategy

The degree course educates specialists with a thorough mathematical and IT expertise that allows them to use the acquired knowledge in various areas, depending on the chosen specialty.

The introduction of this degree course is consistent with the goal [K2] "Expanding the educational offer - orientation of the effects of education towards the needs of the labour market" indicated in the "Development strategy of the University of Zielona Góra until 2020" in the area of "Education".

In addition, the field of study fits in with the "Digital agenda for Europe" and the "Agenda for new skills and jobs" in the EU's "Europe 2020" strategy.

## 3. Description of the competencies expected from candidates applying for admission to the first- and second cycles or a uniform graduate cycle.

Persons with M.A., M.Sc. Bachelor' degrees or equivalent are eligible for the graduate cycle.

Candidates applying for admission should possess competences necessary to undertake education at a graduate cycle in the field Mathematics, in particular:

- they should have thorough knowledge of Mathematics and Computer Science;

- they should be able to use mathematical models;
- They should be able to use IT tools to solve theoretical and practical mathematical problems.

#### **4. Analysis of the compliance of the assumed learning outcomes with the needs of the labour market**

Graduates acquire a thorough mathematical and IT education that allows them to use the acquired knowledge in various fields, depending on the chosen specialty. They can use mathematical models necessary in the application of mathematics and can make use of IT tools to solve theoretical and practical mathematical problems.

Graduates in *IT Mathematics* can find employment in IT companies and IT centres.

Graduates in *Mathematics with IT in Economics* can find employment in economic, planning and management departments of production and commercial companies or state institutions, as well as in consulting companies.

Graduates in *Mathematics with IT in Finance and Insurance* can find employment in companies where financial decisions play an important role, i.e. in banks or insurance companies.

Graduates in *Mathematical Modeling* can find employment in industrial plants, laboratories and centres implementing new technologies, as well as in consulting companies.

Graduates of the teaching specialty are prepared to teach Mathematics in primary schools. Pursuant to the Regulation of the Minister of Science and Higher Education of July 25, 2019 on the standard of education preparing for the teaching profession, graduates are qualified to teach Mathematics in primary and secondary schools after completing undergraduate and graduate cycles in the field of mathematics with a teaching specialty.

#### **5. Description of methods of verifying and evaluating students' learning outcomes achieved throughout the entire educational process**

The methods of verification and assessment of students' assumed learning outcomes are included in syllabuses for individual subjects.

#### **6. Course programme:**

1.1 Description of the assumed learning outcomes, assigning the degree course to particular applicable scientific or artistic disciplines.

In the attachments:

- *Learning outcomes;*
- *Reference table of PQF results to particular learning outcomes.*

1.2 Programme indicators

<b>Programme indicators concerning the evaluated course</b>	
Number of ECTS credits necessary to obtain qualifications corresponding to the level of education	120 ECTS credits(minimum)
Number of semesters necessary to obtain qualifications corresponding to the level of education	4
The number of ECTS credits assigned to classes requiring direct participation of academic teachers and students	min 90 (50%)
Number of ECTS credits assigned to modules of classes related to research conducted within the discipline or disciplines relevant to the evaluated degree course, for students to acquire in-depth knowledge and the ability to conduct scientific research (for a general academic degree course)	min 105 (87%)
Number of ECTS credits assigned to modules of classes related to practical vocational preparation, aimed at students' acquisition of practical skills and social competences (for degree courses with a practical profile)	-
Number of ECTS credits assigned to classes in the field of humanities or social sciences (in the case of degree courses assigned to disciplines other than humanities or social sciences, respectively)	Humanities – min 3 Social sciences –min 2
Number of ECTS credits assigned to elective courses/modules	min 54 (45%)
Number of ECTS credits assigned to internship and number of hours in internship (if the syllabus provides for internship)	-
Number of hours of Physical Education classes - in the case of full-time undergraduate and uniform graduate cycles	-

<b>Modules of classes related to scientific research conducted in the discipline or disciplines related to the degree course, aimed at students gaining in-depth knowledge and skills in conducting scientific research</b>			
Module	Instructional method	Total numbers of hours	ECTS credits
Foundation subjects	L, C, Lab.	180	20

Core subjects	L, C, Lab., S	360	42
Subjects offered for the degree course/compulsory subjects for the specialty	L, C, Lab., P, Pra	420	min 43
<b>Total:</b>		960	105 (87%)

**General academic profile** - includes classes related to the scientific activity conducted at the university in the discipline or disciplines to which the degree course is assigned, in more than 50% of the number of ECTS points and takes into account students' participation of in classes preparing for conducting scientific activity or participation in this activity.

<b>Modules for elective classes</b>			
Module	Instructional method	Total numbers of hours	ECTS credits
Subjects offered for the degree course/compulsory subjects for the specialty	L, C, Lab., P, Pra	420	min 43
Humanities and social subjects	C C	30 30	min 3 min 2
Elective subjects necessary to obtain 30 ECTS points per semester	L, C, Lab., P	60	min 6
<b>Total:</b>		540	min 54 (45%)

*The programme allows students to choose classes to which ECTS points are assigned in the number of not fewer than 30% of ECTS points.*

1.3 Subjects or subject modules - together with learning outcomes and curriculum content to each module, forms and methods ensuring the achievement of these effects, as well as the number of ECTS points;

Attachment - catalogue of subjects in the SylabUZ system.

1.4 Methods of verifying and evaluating students' achievements of the assumed learning outcomes

They are included in the syllabuses for individual subjects.

Rules regarding diplomas are set out in the resolution:

Rules for the preparation and evaluation of diploma theses at the Faculty of Mathematics, Computer Science and Econometrics.

### 1.5 Study programme including subject modules

In the attachment.

### **Graduation conditions**

The graduate degree course in Mathematics last 2 years (4 semesters). The minimum number of ECTS credits is 120. Students should obtain a minimum of 30 ECTS credits in each semester.

- Students of Mathematics receive a master's degree when:
  1. they have passed their subjects with at least 120 ECTS credits, including:
    - a module of compulsory subjects for the degree course,
    - modules of additional subjects offered with at least 43 ECTS credits,
    - modules of humanities subjects (for a minimum of 3 ECTS credits) and modules of social sciences subjects (for a minimum of 2 ECTS credits) offered with a total number of at least 5 ECTS credits,
  2. they have passed the diploma exam with at least a satisfactory result.
- Students of Mathematics receive a master's degree with a specialty: *IT Mathematics, Mathematics with IT in Economics, Mathematics with IT in Finance and Insurance, Mathematical Modeling*, when
  1. they have passed subjects with at least 120 ECTS credits, including:
    - a module of compulsory subjects for the degree course,
    - modules of additional subjects offered with at least 43 ECTS credits, including internship,
    - modules of humanities subjects (for a minimum of 3 ECTS credits) and modules of social sciences subjects (for a minimum of 2 ECTS credits) offered with a total number of at least 5 ECTS credits,
  2. they have passed the diploma exam with at least a satisfactory result.

### 1.6 Duration, principles and form of teaching internship.