**SYLLABUS**

**regarding the qualification cycle FROM 2023TO 2026.**

1.Basic Course/Module Information

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| --- | --- |
| Course/Module title | Basic Mathematics |
| Course/Module code \* |  |
| Faculty (name of the unit offering the field of study) | College of Social Sciences |
| Name of the unit running the course | Institute of Education (Pedagogy) |
| Field of study | Education |
| Qualification level | BA |
| Profile |  |
| Study mode | Full- time |
| Year and semester of studies | 2023/24spring semester |
| Course type | Lecture and classes |
| Language of instruction | English |
| Coordinator | Bozena Maj-Tatsis, PhD |
| Course instructor | Bozena Maj-Tatsis, PhD |

\* - as agreed at the faculty

1.1.Learning format – number of hours and ECTS credits

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Semester  (n0.) | Lectures | Classes | Colloquia | Lab classes | Seminars | Practical classes | Internships | others | **ECTS credits** |
| 4 | 5 | 5 |  |  |  |  |  |  | 2 |

1.2. Course delivery methods

- conducted in a traditional way

- involving distance educationmethods and techniques

1.3. Course/Module assessment (exam, pass with a grade, pass without a grade)

exam

2.Prerequisites

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| Secondary school mathematical skills, knowledge of the curriculum of mathematics education for pre-school and early childhood education  Intermediate- Advanced English proficiency and the ability to use information technology (IT) |

3.Objectives, Learning Outcomes, Course Content, and Instructional Methods

3.1.Course/Module objectives

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| --- | --- |
| O1 | Substantive preparation of students to conduct educational classes in mathematics in kindergarten and in primary school in grades I – III |
| O2 | Developing the ability to apply mathematical knowledge to solve standard and non-standard problems. |
| O3 | To make students aware of the importance and value of mathematical skills in human development and in the applications of mathematics in practice, including art. |

3.2.Course/Module Learning Outcomes (to be completed by the coordinator)

|  |  |  |
| --- | --- | --- |
| Learning Outcome | The description of the learning outcome  defined for the course/module | Relation to the degree programme outcomes |
| LO\_01 | The students will describe the basic structures of school mathematics and their properties, numerical sets, actions on numbers, graphic representations and discuss the content of teaching in the field of mathematics education in kindergarten and grades I – III of primary school. |  |
| LO\_02 | The students will present the content of teaching mathematics in the level of higher grades of primary school, such as: properties of rational numbers, operations on fractions, algebraic expressions, geometric reasoning, units of measurement, defining geometric figures and its properties, 3D figures, elements of statistics and combinatorics. |  |
| LO\_03 | The students will present mathematical reasoning, including deductive inference and argumentation, perceiving regularities leading to generalizations, justifying generalizations, formulating and verifying hypotheses, and describe the applications of mathematics in everyday life. |  |
| LO\_04 | The students will efficiently use basic mathematical objects and will be able to solve mathematical problems. |  |

**3.3. Course content (to be completed by the coordinator)**

1. Lectures

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| Content outline |
| Mathematics as a science and as a school subject |
| Number theory: divisibility, prime and composite numbers |
| Basic geometric concepts, the structure of Euclidean geometry |
| Combinatorics and elements of statistics |

1. Classes, tutorials/seminars, colloquia, laboratories, practical classes

|  |
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| Content outline |
| Applying mathematical reasoning (defining, proving theorems, deduction, induction) and evaluating the correctness of mathematical reasoning. |
| Using the properties of the numbers operations to solve tasks |
| Solving problems, including problems related to everyday life |
| Illustrating the beauty of mathematics and its identification in various areas of human activity |

3.4.Methods of Instruction

*Lecture: a lecture supported by a multimedia presentation/ distance learning*

*Classes: text analysis and discussion/ group work (problem solving, case study, discussion)/didactic games*

4. Assessment techniques and criteria

4.1 Methods of evaluating learning outcomes

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| --- | --- | --- |
| Learning outcome | Methods of assessment of learning outcomes (e.g., test, oral exam, written exam, project, report, observation during classes) | Learning format (lectures, classes,…) |
| LO-01 | Test, observation during classes, written exam | Lectures, classes |
| LO-o2 | Test, observation during classes, written exam | Lectures, classes |
| LO-03 | Test, observation during classes, written exam | Lectures, classes |
| LO-04 | Test, observation during classes, written exam | Lectures, classes |

4.2 Course assessment criteria

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| --- |
| Passing the test, active work in a group, passing the exam  The student receives points for the test and the exam. Let S be the sum of the points, then:  [0,50%S] – 2.0 (F)  (50%S,60%S] - 3.0 (E)  (60%S,70%S] - 3.5 (D)  (70%S,80%S] - 4.0 (C)  (80%S,90%S] - 4.5 (B)  (90%S,100%S] - 5.0 (A) |

5. Total student workload needed to achieve the intended learning outcomes

– number of hours and ECTS credits

|  |  |
| --- | --- |
| Activity | Number of hours |
| Scheduledcoursecontacthours | 10 |
| Other contact hours involving the teacher (consultation hours, examinations) | 2 |
| Non-contact hours - student's own work (preparation for classes or examinations, projects, etc.) | 48 |
| Total number of hours | 60 |
| Total number of ECTS credits | 2 |

\* One ECTS point corresponds to 25-30 hours of total student workload

6. Internships related to the course/module

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| --- | --- |
| Number of hours |  |
| Internship regulations and procedures |  |

7. Instructional materials

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| Compulsory literature:  Mason J., Burton, L., Stacey, K.: (2010) "Thinking Mathematically", Second Edition, Pearson Education Limited: England.  Williams E., Prindle, K.: (2006), "Arithmetic the Easy Way" (Easy Way Series), Barron's Educational Series, Inc.: USA.  Boaler, J., Munson, J., Williams, C.: (2018-2021) Mindset Mathematics: Visualizing and Investigating Big Ideas, Grade 1-8, Jossey-Bass Publisher.  Selected handbooks in Mathematics |
| Complementary literature:  Selected articles in Mathematics Education |

Approved by the Head of the Department or an authorised person