

SYLLABUS

HISTORY OF MATHEMATICS

University year 2005-2006

1. Information regarding the programme

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|-------------------------------------|-----------------------------------------------|
| 1.1 Higher education institution | Babes-Bolyai University Cluj-Napoca |
| 1.2 Faculty | Faculty of Mathematics and Informatics |
| 1.3 Department | Department of Mathematics |
| 1.4 Field of study | Mathematics |
| 1.5 Study cycle | Bachelor |
| 1.6 Study programme / Qualification | Mathematics-Informatics |
| 1.7. Form of education | with frequency |

2. Information regarding the discipline

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|----------------------------|--------------------------------|-----------------|----------------|-------------------------|----------|------------------------|-----------------|
| 2.1 Name of the discipline | Mathematics history | Discipline code | MLR2006 | | | | |
| 2.2 Course coordinator | Lect. Dr. Veronica Ilea | | | | | | |
| 2.3 Seminar coordinator | - | | | | | | |
| 2.4. Year of study | 3 | 2.5 Semester | 6 | 2.6. Type of evaluation | C | 2.7 Type of discipline | Optional |

3. Total estimated time (hours/semester of didactic activities)

| | | | | | |
|---------------------------------------------------------------------------------------|-----------|--------------------|------------|------------------------|-----------|
| 3.1 Hours per week | 2 | Of which: 3.2 curs | 2 | 3.3 seminar/laboratory | 0 |
| 3.4 Total hours in the curriculum | 24 | Of which: 3.5 curs | 24 | 3.6 seminar/labor. | 0 |
| Time allotment: | | | | | hours |
| Learning using manual, course support, bibliography, course notes | | | | | 40 |
| Additional documentation (in libraries, on electronic platforms, field documentation) | | | | | 40 |
| Preparation for seminars/labs, homework, papers, portfolios and essays | | | | | 30 |
| Tutorship | | | | | 10 |
| Evaluations | | | | | 6 |
| Other activities: | | | | | - |
| 3.7 Total individual study hours | | | 126 | | |
| 3.8 Total hours per semester | | | 150 | | |
| 3.9 Number of ECTS credits | | | 6 | | |

4. Prerequisites (if necessary)

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| 4.1 curriculum | • |
| 4.2 competencies | • |

5. Conditions (if necessary)

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|---------------------|---------------------------------------------------------------------|
| 5.1. for the course | • The courses will be taught at the blackboard, sometimes th evideo |
|---------------------|---------------------------------------------------------------------|

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|--------------------------------------|---------------------|
| | projector is needed |
| 5.2. for the seminar /lab activities | • |

6.1. Specific competencies acquired

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|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Professional competencies | <p>C1.1 The identification of the informations, the description of the theories and the use of the specific language</p> <p>C2.4. The comparative analyze of the results obtained by solving the problems with the preexisting data</p> <p>C5.5 The developement of some / homeworks using different proof methods</p> |
| Transversal competencies | <p>CT3. The efficient use of some information sources and of some comunication resources and asisted resources of comunication and training, studied in romanian and in a professional communication language also.</p> |

6.2. Learning outcomes

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|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Knowledge | The student knows: concepts and can describe using specific language details regarding the concepts taught. |
| Skills | The student is able to use existing resources for a favorable framing of the concepts and problems taught. |
| Responsibility and autonomy: | The student has the ability to work independently to study and develop the concepts taught regarding the history of mathematics, to present them in oral and electronic format. |

7. Objectives of the discipline (outcome of the acquired competencies)

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|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7.1 General objective of the discipline | <ul style="list-style-type: none"> • Be able to understand the mathematical concepts dureing time • To understand methods of solving of different problems |
| 7.2 Specific objective of the discipline | <ul style="list-style-type: none"> • To reach the perfect motivation needed for team work, to develop a professional attitude for the team work |

8. Content

| 8.1 Course | Teaching methods | Remarks |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------|
| 1. Preliminary.Mathematics hystory sources. Specific time for mathematics evolution | Exposure: description, explanation, examples, discussion of case studies | |
| 2. Matematics in antient Greec. Famouse problems of the greecs. | Exposure: description, explanation, examples, discussion of case studies | |
| 3. Mathematics in Middle Age. | Exposure: description, explanation, | |

| | | |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------|--|
| | examples, debate, dialogue | |
| 4. Modern calcul: Newton and Leibniz. Riemann integral | Exposure: description, explanation, examples, discussion of case studies | |
| 5. Geometry and axioms. Solving algebraic equations. | Exposure: description, explanation, examples, proofs | |
| 6. The fundamental problem. The theory of sets or working with the infinit. | Exposure: description, explanation, examples, proofs, debate, dialogue | |
| 7. Categories theory. Computer and algorithms. | Exposure: description, explanation, examples, discussion of case studies | |

Bibliografy

- Both, Nicolae: Istoria matemaicii. Editura ALC Media Group, Cluj-Napoca, 1999.
- Mihaileanu, N.: Istoria matematicii – Antichitatea; Evul mediu; Renasterea si secolul al 17-lea. Editura Enciclopedica Româna, Bucuresti, 1974.
- Mihaileanu, N.: Istoria matematicii -- Secolul al 18-lea; Prima jumătate a secolului a 19-lea; Dezvoltarea ulterioara a matematicii. Editura Stiintifica si Enciclopedica, Bucuresti, 1981.
- Toth Alexandru: Istoria matematicii, Univ. "Babes-Bolyai" Cluj, Facultatea de Matematica si Informatica, Cluj-Napoca, 1971

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course respects the IEEE and ACM Curricula Recommendations for Computer Science studies;
- The course exists in the studying program of all major universities in Romania and abroad;
- The content of the course: basic elements related of mathematical evolution in time

10. Evaluation

| Type of activity | 10.1 Evaluation criteria | 10.2 Evaluation methods | 10.3 Share in the grade (%) |
|------------------|-------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------|
| 10.4 Course | To present in front of the class a paper containing the life or/and work of some important mathematician | Referat | 60% |
| | - know the basic principle of the domain - apply the course concepts -to know the mathematics periods | Written exam | 30% |

10.6 Minimum performance standards

- At least grade 6 (from a scale of 1 to 10) to the referat.

11. Labels ODD (Sustainable Development Goals)

Not applicable.


Date

11.04.2025.

Date of approval

25.04.2025.

Signature of course coordinator

Lect.dr. Veronica Ilea 

Signature of seminar coordinator

Lect.dr. Veronica Ilea 

Signature of the head of department

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