

SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	Babes-Bolyai university, Cluj-Napoca
1.2 Faculty	Mathematics and Informatics
1.3 Department	Mathematics
1.4 Field of study	Mathematics
1.5 Study cycle	Master degree
1.6 Study programme / Qualification	Advanced Mathematics

2. Information regarding the discipline

2.1 Name of the discipline	Methodology of Scientific Research in Mathematics						
2.2 Course coordinator	Chiorean Ioana						
2.3 Seminar coordinator							
2.4. Year of study	1	2.5 Semester	1	2.6. Type of evaluation	C	2.7 Type of discipline	compulsory

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

3.1 Hours per week	3	Of which: 3.2 course	2	3.3 seminar/laboratory	1	
3.4 Total hours in the curriculum	3	Of which: 3.5 course	2	3.6 seminar/laboratory	1	
Time allotment:						hours
Learning using manual, course support, bibliography, course notes						2
Additional documentation (in libraries, on electronic platforms, field documentation)						1
Preparation for seminars/labs, homework, papers, portfolios and essays						1/2
Tutorship						1/2
Evaluations						1
Other activities:						
3.7 Total individual study hours			5			
3.8 Total hours per semester			70			
3.9 Number of ECTS credits			6			

4. Prerequisites (if necessary)

4.1. curriculum	•
4.2. competencies	•

5. Conditions (if necessary)

5.1. for the course	•
5.2. for the seminar /lab activities	•

6. Specific competencies acquired

Professional competencies	<ul style="list-style-type: none"> - The student is guided in the basic tools of the research activities in Mathematics: how to be informed, how to get new ideas and new tools, getting new results in Mathematics, how to follow your own research activities and results, cooperation with other researchers, ethical and academic integrity aspects in the research activity. - The student is guided to make connections between the different disciplines of mathematics as well as mathematics and other positive sciences.
Transversal competencies	<ul style="list-style-type: none"> - Abilities to be informed, to work independent or collectively for doing research studies or to solve complex problems - Ability to self-development throughout study and work - Ability to utilize advanced knowledge to get progress in carrier.

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

7.1 General objective of the discipline	<ul style="list-style-type: none"> • The main objective of the course is to offer general information for its progress in the research activity in Mathematics. Another general objective is to point out the importance and the necessity to respect and follow the ethical principles in science
7.2 Specific objective of the discipline	<ul style="list-style-type: none"> • Specific objectives are to teach students how to write scientific and didactical papers, to be able to use the international data bases in science, to evaluate a scientific or didactical work.

8. Contents

8.1 Course	Teaching methods	Remarks
Cursul 1. Problems of the young researcher. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 2. Classifying scientific subjects. Notions of ethics and academic integrity in teaching Mathematics	Lecture, dialog	
Cursul 3. Types of mathematical objects. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 4. The dynamic of Math Developing	Lecture, dialog	
Cursul 5. Understanding Mathematics. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 6. Mathematics and teaching	Lecture, dialog	
Cursul 7. Communication in Mathematics. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 8. Research in Mathematics. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 9. Data bases	Lecture, dialog	
Cursul 10. Tools for research in Mathematics. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 11. Where and how we publish our new results ? Ethical aspects and academic integrity	Lecture, dialog	
Cursul 12. Evaluation of mathematicians activity. Ethical aspects and academic integrity	Lecture, dialog	
Cursul 13. Romanian Mathematical School	Lecture, dialog	
Cursul 14. Examination		
References		
1. I.A. Rus, E. Muntean, Matematica si informatica. Trecut, prezent si viitor, Promedia plus, Cluj-Napoca,		

- 1998.
2. S. Mac Lane, Mathematics. Form and Function, Springer, Berlin, 1986.
 3. H.F. Moed, Citation Analysis in Research Evaluation, Springer, 2005.
 4. P. Odifreddi, The Mathematical Century. The 30 greatest problems of the last 100 years, Princeton Univ. Press, 2004.
 5. S. Ramon, Y. Cojal, Drumul spre stiinta, Editura Politica, Bucuresti, 1967.
 6. J.P. Pier (ed), Development of mathematics: 1950-2000, Birkhauser, Basel, 2000.
 7. R. Descartes, Reguli utile si clare pentru indrumarea mintii in cercetarea adevarului, Editura Stiintifica, Bucuresti, 1964.
 8. Sercan, E., Deontologie academica. Ghid practic. Universitatea Bucuresti.
<http://www.ftcub.ro/doctorat/Ghid-Practic-Deontologie-Academica.pdf>

8.2 Seminar	Teching Methods	Remarks
Seminar 1. Problems of the young resercher. Ethical aspects and academic integrity	Dialog	
Seminar 2. Types of mathematical objects. Ethical aspects and academic integrity	Dialog	
Seminar 3. Understanding Mathematics. Ethical aspects and academic integrity	Dialog	
Seminar 4. Tools in Mathematics. Ethical aspects and academic integrity	Dialog	
Seminar 5. How to publish our research. Ethical aspects and academic integrity, Plagiarism	Dialog	
Seminar 6. Romanian School in Mathematics.	Dialog	
Seminar 7. Coloqium		

- References
1. I.A. Rus, E. Muntean, Matematica si informatica. Trecut, prezent si viitor, Promedia plus, Cluj-Napoca, 1998.
 2. S. Mac Lane, Mathematics. Form and Function, Springer, Berlin, 1986.
 3. H.F. Moed, Citation Analysis in Research Evaluation, Springer, 2005.
 4. P. Odifreddi, The Mathematical Century. The 30 greatest problems of the last 100 years, Princeton Univ. Press, 2004.
 5. S. Ramon, Y. Cojal, Drumul spre stiinta, Editura Politica, Bucuresti, 1967.
 6. J.P. Pier (ed), Development of mathematics: 1950-2000, Birkhauser, Basel, 2000.
 7. G. Polya, Descoperirea in matematica. Editura Stiintifica, Bucuresti, 1971.
 8. E. Sercan, Deontologie academica. Ghid practic. Universitatea Bucuresti.
<http://www.ftcub.ro/doctorat/Ghid-Practic-Deontologie-Academica.pd>

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 content of this course is designed to meet the expectations of various expert groups with a recognized authority.

10.Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Methods of evaluation	10.3 Share in the grade
10.4 Course		Dialog	

Data completării

11 apr. 2018

Semnătura titularului de curs

conf.dr.Ioana Chiorean.....conf.dr.Ioana Chiorean

Semnătura titularului de seminar

Data avizării în departament

Semnătura directorului de departament