

Undergraduate Studies-Mathematics, module Applied Mathematics (1MP)

Duration of Studies: 4 Years (8 semesters)

Total Number of ECTS: 240

This studying program is active starting from the academic year 2022/23

Notation:

- L – number of hours of lectures
- E – number of hours of excersises
- P – number of hours of laboratory excersises/ research or practical student's work
- ECTS – number of credits
- **Fall Semester**
- **Spring Semester**

1st YEAR

	L	E	P	ECTS
Analysis 1 (two semester course)	4	4	0	0
Linear Algebra (two semester course)	2	3	0	0
Introduction to Mathematical Logic	2	2	0	5
Programming 1	2	3	0	6
Course from Elective block M	0	2	0	3
Analysis 1	4	4	0	18
Linear Algebra	3	2	0	12
Analytic Geometry	2	3	0	6

1st YEAR

Programming 2	2	3	0	6
Foreign Language	3	0	0	4
				60

Elective block M	L	E	P	ECTS
------------------	---	---	---	------

Elementary Mathematics	0	2	0	3
Elementary Mathematics – Advanced Concepts	0	2	0	3

2nd YEAR

	L	E	P	ECTS
Analysis 2 (two semester course)	4	4	0	0
Discrete Structures	2	2	1	5
Introduction to Geometry	3	3	0	6
Algebra 1	3	3	0	6
Course from Elective block MP1	2	2	0	5
Analysis 2	4	4	0	18
Object-oriented Programming	2	2	0	5
Geometry of Curves and Surfaces	2	2	0	5
Introduction to Numerical Mathematics	2	2	1	5

2nd YEAR

Course from Elective block MP2	2	2	0	5
				60

Elective block MP1	L	E	P	ECTS
--------------------	---	---	---	------

Introduction to Algorithms and Data Structures (променити и у верзији на српском у Увод у алгоритме и структуре података)	2	2	0	5
---	---	---	---	---

Introduction to Financial Mathematics	2	2	0	5
---------------------------------------	---	---	---	---

Mathematical Software	2	2	0	5
-----------------------	---	---	---	---

Elective block MP2	L	E	P	ECTS
--------------------	---	---	---	------

Web Programming	2	2	0	5
-----------------	---	---	---	---

Geometric Modeling	2	2	1	5
--------------------	---	---	---	---

Programming Packages in Mathematics	2	2	0	5
-------------------------------------	---	---	---	---

3rd YEAR

	L	E	P	ECTS
--	---	---	---	------

Analysis 3A	3	2	0	5
-------------	---	---	---	---

Functions of a Complex Variable	3	2	0	5
---------------------------------	---	---	---	---

Linear Programming	2	2	0	5
--------------------	---	---	---	---

Differential Equations A	2	2	0	5
--------------------------	---	---	---	---

3rd YEAR

Numerical Analysis 1A	2	2	0	5
Course from Elective block MP3	2	2	0	5
Analysis 3B	3	2	0	5
Convex Analysis	3	1	0	5
Numerical Analysis 1B	2	2	0	5
Differential Equations B	2	2	0	5
Nonlinear Programming	2	2	0	5
Course from Elective block MP4	2	2	0	5
				60

Elective Block MP3	L	E	P	ECTS
Selected Topics in Astronomy	2	2	0	5
Approximation Theory	2	2	0	5
Introduction to Theoretical Mechanics	2	2	0	5
Elective Block MP4	L	E	P	ECTS
Optimization Software	2	2	0	5
Signal Processing	2	2	0	5
Dynamic Systems in Mathematical Modeling	2	2	0	5

4th YEAR

	L	E	P	ECTS
Probability and Statistics A	2	2	0	5
Numerical Analysis 2A	2	2	0	5
Equations of Mathematical Physics	2	2	0	5
Operations Research	2	2	0	5
Intorduction to Mathematical Modeling	2	2	0	5
Course from Elective block MP5	2	2	0	5
Probability and Statistics B	2	2	0	5
Numerical analysis 2B	2	2	0	5
Extremal Problems With applications	2	2	1	6
Practical Work 1 (Internship)	0	0	6	3
Heuristic Methods	3	2	0	6
Course from Elective block MP6	2	2	0	5

60

Elective Block MP5	L	E	P	ECTS
Algebra 2	2	2	0	5

Elective Block MP5	L	E	P	ECTS
Financial Modeling	2	2	0	5
Numerical Software Libraries	2	2	0	5
Introduction to Relational Databasis	2	2	0	5
Elective block MP6	L	E	P	ECTS
Partial Equations	3	2	0	5
Advanced Algorithms on Graphs	2	2	0	5
Game Theory with Applications	2	2	0	5
Intorduction to Theory of Stochastic Processes	2	2	0	5
Machine Learning	2	2	0	5