Study programmes: Bachelor studies – Mathematics	
Course name: Elementary number theory	
Lecturers: Dragana Todorić, Zoran Kadelburg, Goran Đanković, Miljan Knežević, Đorđe Krtinić	
Status: Compulsory	
ECTS: 5	
Attendance prerequisites: Algebra 1, Analysis 1	
Course aims: Acquisition of general knowledge from elementary number theory.	
Course outcome: Upon completion of the course, the students have basic knowledge from elementary number theory. The students understand the following concepts: primitive root, algebraic integers, field extensions, cyclotomic fields, number fields. The students know fundamental theorems from elementary number theory. They are able to solve problems in the field, and to attend more advanced courses in number theory and algebra.	
Course content: The ring of integers, divisibility, divisibility criteria, prime numbers, factorization. Arithmetic functions (Euler, Mobius, integer and fractional part, sum of divisors). Basic theorems of elementary number theory (Little Fermat theorem, Euler's theorem, Wilson's theorem). Diophantine equations, solving congruences and systems of congruences, Chinese remainder theorem, Pythagorean triples. Primitive roots. Algebraic and transcendental numbers. Legendre and Jacobi symbols. Gauss' reciprocity law. Diophantine approximations, Farey fractions, Pell's equation. Field extensions, norm, trace, discriminant; Gauss and Jacobi sums. Finite fields, Euler's criterium. Quadratic congruences.	
Literature: 1. V. Mićić, Z. Kadelburg, D. Đukić, *Uvod u teoriju brojeva*, DMS (sveska 15), Beograd 2013. 2. I. Niven, H. Zuckerman, H. Montgomery, *An Introduction to the Theory of Numbers,* John Wiley and Sons, 1991.	

Number of hours: 4	**Lecures: 2**	**Tutorials: 2**	**Laboratory: -**	**Research: -**

Teaching and learning methods: Lectures/ Tutorials	

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	30
Exercises / Tutorials	-	Oral exam	40
Colloquia	30	Written-oral exam	-
Essay / Project	-		