Study programmes: Master studies – Mathematics	
Course name: Number theory 2	
Lecturers: Aleksandar Lipkovski, Zoran Petrović	
Status: Optional	
ECTS: 8	
Attendance prerequisites: Number theory 1	
Course aims: Acquisition of more advanced knowledge in algebraic number theory.	
Course outcome: Upon completion of the course, the students have more advanced knowledge in algebraic number theory. The students understand the following concepts: Dedekind zeta function, L-function, class group. The students know fundamental theorems from algebraic number theory. They are able to solve problems in the field, and to attend more advanced courses in number theory and algebra.	
Course content: Diophantine approximations, continued fractions, lattices in R^n, Minkowski theorem, Dirichlet's theorem about units in rings of algebraic integers. Dedekind zeta function, Dirichlet L-function, Dirichlet theorem about primes in arithmetic progressions. Gauss sums, L-functions and characters. Quadratic number fields. Elliptic curves and applications in cryptography.	
Literature: 1. A. Baker, *A concise introduction to the theory of numbers*, Cambridge Univ. Press, 1984; 2. K. Ireland, M. Rosen, *A classical introduction to number theory*, Springer, New York 1993; 3. T. Ono, *An Introduction to Algebraic Number* Theory, Plenum Press, New York and London, 1990.	

Number of hours: **5**	Lectures: **3**	Tutorials: **2**	Laboratory: **-**	Research: **-**

Teaching and learning methods: Lectures/ Tutorials

Assessment (maximal 100 points)			
Course assignments	**points**	**Final exam**	**points**
Lectures	-	Written exam	20
Exercises / Tutorials	-	Oral exam	40
Colloquia	20	Written-oral exam	-
Essay / Project	20		