Course: Introduction to Riemannian Surfaces and Algebraic Curves		
Course instructors: Vladimir Dragović, Borislav Gajić, Božidar Jovanović, Milena Radnović		
Course type: elective		
Credit points: 10 ECTS		
Prerequisites: -		
Course objectives: Course dedicated to the basics of the theory of Riemann surfaces and algebraic curves with applications in integrable systems.		
Learning outcomes: Students will learn the basics of the theory of Riemann surfaces and algebraic curves, Jacobian varieties, elliptic and theta functions and their applications in integrable systems.		
Course description (outline): *Theory* 1. Riemann surfaces, holomorphic mappings, differential forms. 2. Divisors, Poincare-Hopf theorem, Riemann-Hurwitz theorem. 3. Line bundles and sheaves on Riemann surfaces. 4. Riemann-Roch theorem. 5. Algebraic curves, singularities, Bezout's theorem, gender formula 6. Normalization. Hyperelliptic curves. 7. Jacobian variety and Abel's theorem. 8. Theta functions and the Jacobi inverse problem. 9. Applications of Theta functions in integrable problems of classical mechanics. *Practice* Homework**,** Seminars talks		
References: 1. P.A. Griffiths, Introduction to Algebraic Curves, AMS, 1989 2 P.A. Griffiths, J. Harris Principles of Algebraic Geometry, Wiley, 1994. 3. S. Donaldson, Riemannian Surfaces, Oxford University Press, 2011. 4. Б. А. Дубровин, “Тэта-функции и нелинейные уравнения”, *УМН*, **36**:2(218) (1981), 11–80. 6. В. Драговић, М. Радновић, Понселеови поризми, квадрике и билијари, Завод за уџбенике, Београд, 2012.		
Active teaching hours: 5	**Theoretical classes:** 5	**Practice classes:**
Methods of teaching: Lectures and practice, with active participation of the students, discussion, seminars, etc.		
Grading structure (100 points)		
Pre-exam obligations Homework (30 points), Seminar talk (30 points)		
Exam Oral Exam (40 points)		