Study programmes: BACHELOR STUDIES - Mathematics

Course name: CODE M2.19 - Geometric function theory

Lecturers: Miodrag Mateljević,Vladimir Božin, Miljan Knežević

Status: Compulsory

ECTS: 5

Attendance prerequisites: Complex analysis A

Course aims: Acquisition of basic knowledge in geometric function theory

Course outcome: Upon completion of the course, the student has knowledge in geometric principles of complex analysis, in properties of quasiconformal mappings and harmonic mappings.

Course content: Boundary Correspondence. The uniformation theorem, Möbius transformations and hyperbolic metrics. The Poincaré disk model. Conformal invariants - Modules of a family of curves and potential theory. Quasiconformal mappings. Fundamentals of Teichmüller's theory. Harmonic mappings.

Literature:

1. Miodrag Mateljević: Kompleksne funkcije 1&2, Društvo matematičara, Beograd, 2006.
2. Б.В.Шабат: Введение в комплекснии анализ, Част 1, Наука, Москва 1976.
3. L. Ahlfors: Complex analysis, McGraw Hill, 1979.
4. Miodrag Mateljević: Topics in HQC mappings, Завод за уџбенике, Београд, 2011.
5. Olli Lehto: Univalent functions and Teichmüller spaces. Graduate Texts in Mathematics, vol. 109, Springer-Verlag, 1987.

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

Teaching and learning methods: Frontal / Tutorial

Assessment (maximal 100 points)

Course assignments	points	Final exam	points
Lectures	-	Written exam	30
Exercises / Tutorials	-	Oral exam	40
Colloquia	15+15	Written-oral exam	-
Essay / Project	-		