(Table 5.2) Course unit description

Study program : **MATHEMATICS**

Type and level of studies: **UNDERGRADUATE ACADEMIC STIDIES**

Course unit: COMPLEX ANALYSIS

Teacher in charge : Full-time professor, PHD LJILJANA PAVLOVIC

Language of instruction: **English**

ECTS: **8**

Prerequisites:

Semester: **Summer Semester**

Course unit objective

Course unit objective is transferring to students the necessary theoretical knowledge and mathematical methods from complex analysis . This creates the basis for analysis and carrying out different problems from this field of mathematics

Learning outcomes of Course unit

Student acquired the necessary theoretical knowledge from complex analysis and conquered appropriate mathematical methods for analysis different problems with complex variables. Student is qualified to analysis given problem with complex variables, to make its mathematical model and to get accurate solution.

Course unit contents

Theoretical classes

The complex field. Topology of complex plane. Path and curve. Region. Complex valued functions of one complex variable. Differentiability. Geometric interpretation. Conformal functions. Bilinear functions. Model of Lobachevski geometry. Exponential functions. Trigonometric functions. Line integral. Primitive function. Cauchy theorem. General Cauchy theorem. Integral Cauchy formula. Taylor's series. Properties of holomorphic functions. Uniqueness theorem. Loran's series. Singular points. Residue theorem. Analytic extension. Geometric principles.
Practical classes are from the same units contest as for theoretical classes.

Literature

1. Lars V. Ahlfors, Complex Analysis, McGraw-Hill, Inc. 1978.
2. Maurice Heins, Complex Function Theory, Academic Press, New York and London, 1968.

Number of active teaching hours				**Other classes**
Lectures: **3**	Practice: **3**	Other forms of classes. Mentoring system: **2**	Independent work: **2**	**0**

Teaching methods

Professor's lectures, case studies, home work, discussion, seminar.

Examination methods (maximum 100 points)

Exam prerequisites	**No. of points:**	**Final exam**	**No. of points:**
Student's activity during lectures	**6**	oral examination	**50**
practical classes/tests	**44**	written examination	
Seminars/homework	**20**	.....	
Project			
Other			

Grading system

Grade	**No. of points**	**Description**
10	**91-100**	Excellent
9	**81-90**	Exceptionally good
8	**71-80**	Very good
7	**61-70**	Good
6	**51-60**	Passing
5	**0-50**	Failing