**Course:** Model Theory

Course instructors: Predrag Tanovic

Course type: elective

**Credit points ECTS:** 12

## **Prerequisites:**

**Course objectives:** Introduction to the basic ideas and techniques of model theory, as well as applications in other areas of mathematics.

**Learning outcomes:** At the end of the course, the student should master the basic techniques of model theory and be able to apply them in other areas of mathematics, especially in algebra.

# **Course description (outline):**

Theoretical classes

Definable sets, relations and functions in first order structures. Elementary mappings and extensions. Compactness theorem. Elimination of quantifiers. Types, saturated structures. Omitting types theorem. Homogeneous and universal structures, prime models. Categorical theories.

#### **References:**

- 1. David Marker. Model Theory: An Introduction. Graduate texts in mathematics vol.217. Springer 2002.
- 2. Bruno Poizat. A Course in Model Theory. Springer-Verlag New York 2000.
- 3. C.C.Chang, H.J.Keisler. Model Theory, 3rd edition. Elsevier Science Publishers. 1990.
- 4. A.Marcja, C.Toffalori. A guide to Clasiccal and Modern Model Theory. Kluwer Academic Publishers. 2003.

Active teaching hours: 5 Theoretical classes: 5 Practice classes:

### Methods of teaching:

The lectures use classical teaching methods with the use of video projectors and interaction with students. Students' knowledge is tested through homework and defense of seminar papers. The final oral exam checks the comprehensive understanding of the presented material.

#### Grading structure (100 points)

- activity during the lectures 10 points
- seminar paper or seminar talk held 30 points

• oral exam 60 points