Level : Bachelor		
Course title: Organic chemistry I	**Шифра:**	Z-103
Наставник: dr Andrea R. Nikolić		
Status: obligatory		
ECTS: 8		
Requirements: none		

Learning objectives

To provide the students with core theoretical and practical knowledge of Organic Chemistry and the ability to apply it to further studies in Chemistry or multidisciplinary areas involving Chemistry or employment in Chemistry based industry. The ability to reason logically and creatively. The ability to conduct an experiment precisely and safely. The ability to interpret experimental information and deduce appropriate conclusions.

Learning outcomes

After completing the course, the student will be able to demonstrate basic knowledge of Organic Chemistry. The characteristic reactions of functional groups, the structural, stereochemical and reactivity features of main groups of organic compounds.

Syllabus

Theoretical instruction

Introduction to organic chemistry. Structure and bonding. Organic acids and bases. Structure of Methane, Ethane and Acetylene. The nature of organic reactions. Functional groups. Alkanes and alkyl groups. Naming alkanes. Drawing chemical structures. Cycloalkanes. Alkenes. Naming and electronic structure of alkenes. Kinds of organic reactions. Markovnikov's rule. Reactions of alkenes. Alkynes. Reactions of alkynes. Aromatic compounds. Structure and reactions of benzene. Alkyl halides. Nucleophilic substitution reactions. Eliminations. Alcohols, ethers, and phenols. Synthesis and reactions. Cyclic ethers. Aldehydes and ketones. Synthesis and reactions of aldehydes and ketones. Grignard reagents. Carboxylic acids and derivatives. Fats and oils. Soaps. Amines. Structure and properties of amines. Synthesis and reactions of amines. Heterocyclic amines. Carbohydrates. Fischer projections and cyclic structures. Reactions of monosaccharide. Glycosides. Disaccharides. Polysaccharides. Amino acids, peptides, and proteins.

Practical instruction

Detailed written instructions will be given for carrying out basic laboratory operations (distillations and pre-crystallizations) and reactions on organic compounds.

Weekly teaching load	**Lecture:** 4 (60)	**Exercises:** 3 (45)