

**01S1-CHOR**

**ORGANIC CHEMISTRY**

**ECTS: 3.5**

**HOURS PER SEMESTER/WEEK:** LECTURES: 10/1; CLASSES: 20/2

**COURSE CONTENTS**

**LECTURES:** Structure of organic compounds, type of hybridization of carbon atoms in organic compounds, types of bonds, types of isomerism, functional groups. Current rules for the naming of organic compounds. Synthesis, application, physical and chemical properties of selected groups of organic compounds. Esters, waxes, fats- biological significance of these compounds. Amines, alkaloids, amino acids, proteins - structure, properties, physiological and biochemical importance. Carbohydrates - structure, naming rules and their meaning in nature.

**CLASSES:** Selected methods of purification of organic compounds: crystallization, extraction, distillation, sublimation. Characteristic reactions of individual groups of organic compounds. Elements of organic preparation - Synthesis of 2,5-dimethylbenzenesulfonic acid. Preparation of popular drugs - aspirin. Usage classical quantitative analysis methods for the determination of organic compounds.

**EDUCATIONAL PURPOSE:** Learning the basics of organic chemistry needed in further studies. Acquiring the ability to use basic laboratory equipment, perform simple analyses and syntheses of organic compounds and interpret their results.

**LEARNING OUTCOMES**

**Knowledge.** The student knows the properties of the basic groups of organic compounds. He knows the types of bonds and their influence on properties of organic compounds. He knows the nomenclature of chemical compounds in the field of organic chemistry. He understands the role of experimental work in natural sciences.

**Skills.** Student knows how to write down the transformations of organic compounds by means of the equations of chemical reactions. He understands their relationship with changes taking place in nature, correctly uses the nomenclature of organic compounds. He can design and assemble simple apparatus for organic syntheses.

**Social competences.** The student understands the need for lifelong learning. Can work in a group, performing various functions in it. He understands the need to adopt an pro-ecological attitude.

**TEACHING FORMS AND METHODS**

**Lectures.** Information lecture with multimedia presentation.

**Classes.** Laboratory classes - performing laboratory tasks in small teams of 2 students.

**FORM AND CONDITIONS FOR VERIFICATION OF LEARNING OUTCOMES**

**Lectures.** Written test - credit with a grade.

**Classes.** Written test - credit with grade.

**BASIC LITERATURE**

1) McMurry J.E., Fundamentals of Organic Chemistry. Brooks/Cole, Belmont, USA. 2011. Available on line: [www.cengage.com/OWL/](http://www.cengage.com/OWL/)

**ADDITIONAL LITERATURE**

1) Norris J.F., Experimental Organic Chemistry. Lightning Source UK Ltd, 2017.

**THE TEACHER/S CONDUCTING THE CLASSES:**

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