Level: bachelor IHO-401

Course title: Synthesis of Biologically Active Molecules

Status: elective

ECTS: 5

Requirements: none

Learning objectives

The course will introduce students to the new developments in synthesis of biologically active compounds.

Learning outcomes

Students will acquire the necessary theoretical and practical knowledge in the synthesis of biologically active molecules. Acquired knowledge will allow students to extend their knowledge of methods in organic synthesis and efficiently solve synthetic problems in the field of biologically active molecules; Capacity to select and apply synthetic procedures in order to solve synthetic problems in the domain of research work.

Syllabus

Theoretical instruction

Synthesis of drugs based on estrane and androstane derivatives. Synthesis of antiestrogens and antiandrogens and their applications in treating cancer. Synthesis of antitumor agents. Chemistry and pharmacology of bile acids. Therapeutic agents based on the progestins and corticosteroids. Synthesis and properties. Synthesis and use of anabolic-androgenic steroids. Synthesis of penicillin, cephalosporins and antibacterial sulfonamides. Synthesis of antidepressant drugs and antidiabetic drugs. Synthesis of angiotensin converting enzyme inhibitors and related compounds. Application of click chemistry in the synthesis of biologically active compounds. Biologically active compounds in nanochemistry.

Practical instruction

Synthesis of the selected biologically active organic compounds and confirming their structures by spectroscopic methods.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	Student research:	