

Level: bachelor				IHO-404
Course title: Chemical Processing of Natural Organic Raw Materials				
Status: elective				
ECTS: 6				
Requirements: none				
Learning objectives The course will introduce students to the natural organic raw materials and their industrial processing.				
Learning outcomes Students will acquire the necessary theoretical and practical knowledge in chemical processing of natural organic raw materials.				
Syllabus <i>Theoretical instruction</i> Chemical processing of vegetable raw materials. Biomass. Energy production from biomass. Biofuels. Biogas. Chemical and biochemical processing of fats and oils as organic raw materials. Biodiesel. Catalysts and biocatalysts. Industrial methods of biodiesel production. Raw materials for starch production. Modified starch and starch derivatives. Oxidized and hydrolyzed starches. Starch esters and ethers. Cardiotonic glycosides (raw materials for obtaining, process of isolation, application). Soy protein (obtaining, chemical and physical properties, application). Industrial production of textured soy protein products. Extrusion in the food industry. Production of cellulose, lignocellulose and nanocellulose. Phytosterols (important industrial raw materials, the procedures for isolation, chemical transformations). Chemical processing of natural raw materials of animal origin. Animal bile as raw material. Isolation and application of bile acids. Preparation of selected bile acids. Bile acids in nanotechnology. Insulin (methods for isolation, purification, structural determination and application). Nanotechnology and natural organic raw materials. <i>Practical instruction</i> Laboratory isolation, purification and modification of the selected organic compounds from natural organic materials.				
Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	Student research:	