

Level: bachelor				
Course title: Natural Antioxidants, IB-302				
Status: elective				
ECTS: 6				
Requirements: none				
Learning objectives (1) to provide students with basic knowledge of free radicals as chemical particles with significant roles in metabolism and development of diseases in humans, (2) to introduce students to the most important classes of natural antioxidants, their occurrence in nature and chemical structure, (3) to provide students with basic knowledge of the mechanism of action of natural antioxidants and their use in the diet, prevention and treatment of various diseases, (4) to enable students to apply the basic methods for the experimental determination of antioxidant activity.				
Learning outcomes Upon successful completion of this course, the student is able to: (1) demonstrate basic knowledge of the most reactive radical species in the body and the ways of their formation; (2) define and describe the causes of oxidative stress and list the effects of oxidative stress on living organisms; (3) list the most important mechanisms of antioxidant protection; (4) list the most important classes of natural antioxidants, their sources and applications; (5) apply basic experimental methods for determination of antioxidant potential and interpret the results.				
Syllabus <i>Theoretical instruction</i> The formation and properties of toxic forms of oxygen and nitrogen. Cellular sources of free radicals and oxidative stress concept. Toxic effects of free radicals in the body. Types of antioxidant protection: endogenous and exogenous antioxidants. Main classes of natural antioxidants and their sources in nature. Natural antioxidants as dietary supplements and additives. Direct and indirect methods for determination of antioxidant activity. <i>Practical instruction</i> Laboratory work follows theoretical instruction.				
Weekly teaching load				Other: /
Lectures: 2	Exercises: 3	Other forms of teaching:	Student research: /	