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| **Study program:** Doctoral academic studies **-** Chemistry |
| **Course title:** Chemistry of Plant Pigments (H306C) |
| **Name of lecturer/lecturers:** Danijela A. Kostić |
| **Type of course:** elective |
| **Number of ECTS allocated:** 10 |
| **Course objectives:**- getting to know the types of plant pigments and their roles,- getting to know their chemical properties,- getting to know the experimental application of methods for isolating and purifying plant pigments,- familiarization with instrumental methods for their identification,- training students for the application and development of scientific and professional knowledge in the field of plant pigment chemistry. |
| **Course outcomes** Upon successful completion of this course, the student will be able to: - successfully apply the acquired knowledge in the processes of isolation, purification and characterization of biomolecules, - interpret experimental results and proceeds further professionally and scientific training in this field. |
| **SYLLABUS***Lectures*Color, physical-chemical characteristics of colors. Introduction to the chemistry of plant pigments.Pigments derived from natural phenolic compounds.Flavonoids.Other plant pigments: chlorophyll, betalains, carotenoids.Theoretical bases and experimental techniques for the isolation of plant pigments.Theoretical bases and experimental techniques for the purification of plant pigments.Application of instrumental methods (UV/Vis, HPLC) for the identification of plant pigments.Application of instrumental methods (NMR, GC-MS) for the identification of plant pigments.Methods for testing the antioxidant activity of extracts containing plant pigments.Methods for testing the antimicrobial activity of extracts containing plant pigments.The role of plant pigments in physiological processes.Plant pigments and protection against UV radiation.Application of plant pigments in industry, the use of plant pigments as analytical reagents, as antioxidant and antimicrobial preparations in the pharmaceutical and cosmetic industry. |
| **References**1. J. Mabry, M. B. Tomson, The systematic identification of flavonoids, Springer Verlag, New York, 1970.2. S. Miletić, Hemija biljnih pigmenata, monografija, Filozofski fakultet, Niš, 1996. |
| **Active teaching classes** | **Lectures:** 105 | **Laboratory work:** / |
| **Teaching mode:** lectures, PowerPoint presentations |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** |
| activity during the lecture - 10 points; colloquium - 30 points; seminar - 20 points; oral exam - 40 points |