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| **Study program:** Doctoral academic studies **-** Chemistry | | |
| **Course title:** Identification of Natural Products (H304C) | | |
| **Name of lecturer/lecturers:** Goran M. Petrović, Ivan R. Palić | | |
| **Type of course:** elective | | |
| **Number of ECTS allocated:** 10 | | |
| **Course objectives**  The goal of this course is to train students for independent work on acquiring knowledge about modern methods for identification and characterization of natural products based on chromatographic methods and combinations of  chromatographic and spectroscopic methods. | | |
| **Course outcomes**  Upon successful completion of this course, the student will be able to independently selects and apples appropriate methods for the identification of a certain group of natural products, as well as to interpret the results obtained by these methods and successfully determines the structure or characterizes given compound. | | |
| **SYLLABUS**  *Lectures*  1. Chemical identification: identification with TLC-developing reagents, biochemical and chemical tests for individual non-selective bioactive compounds, artifacts.  2. Combined techniques: GC-MS, GC-MS/MS. LCUV, LC-MS, LC-NMR, LC-IR.  3. Application of appropriate software (AMDIS, MAS HUNTER and others) for determination the structure.  4. Bioactivity tests: antibiotic and anticancer activity, specific binding tests, immunochemical techniques.  5. Objectives of dereplication: resources of natural products, reliability factors of identification, priorities when examining extracts, directions of future development.  *Practical work*  Work on real samples using the mentioned instrumental methods within the framework of theoretical teaching, as well as use of professional software for work on identification and characterization of analyzed prepared samples of natural products. | | |
| **References**  1. F. VanMiddlesworth, R. J. P. Cannell, Dereplication and Partial Identification of Natural Products (in: R. J. P. Cannell, Natural Products Isolation, Humana Press, Totowa, New Jersey (1998))  2. R. P. Adams, Identification of Essential Oil Components by Gas Chromatography/Mass Spectrometry, 4th Edition. Allured Publishing Corporation, Carol Stream, Illinois (2007). | | |
| **Active teaching classes** | **Lectures:** 105 | **Laboratory work:** / |
| **Teaching mode:** interactive lectures, seminars, consultations, work on modern instruments | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | |
| activity during lectures - 5 points; colloquiums - 60 points; written exam - 35 points | | |