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| **Study program:** Chemistry (PhD) | | |
| **Course title: Contemporary Chromatographic Methods (H327C)** | | |
| **Name of lecturer/lecturers: Milan N. Mitić** | | |
| **Type of course: elective** | | |
| **Number of ECTS allocated 10** | | |
| **Course objectives**  **The main goal of the course is to provide the students with a higher level of knowledge in the field of chromatographic methods that will be able to apply primarily in experimental scientific work** | | |
| **Course outcomes**  **Within this course, the student should upgrade the existing knowledge of theoretical principles of chromatographic methods. In this way, the student should independently decide on the choice, and optimization and apply accurate modern chromatographic methods for real sample analysis. Also, one of the goals will also be training candidates for fast and efficient literature searches in the field of contemporary separation techniques.** | | |
| **SYLLABUS**  *Lectures*  *The role and importance of modern chromatographic methods. Basic principles in chromatography: distribution,*  *adsorption, ion exchange. Kinetic processes in chromatography. Van Demter's theory. Thermodynamics of the chromatographic process. Characteristics of chromatographic separation. Development, optimization and validation of chromatographic methods. High performance liquid chromatography (HPLC and UPLC systems). Principles of liquid chromatography. High-performance ion chromatography. Gel permeable chromatography. Affinitative chromatography. Gas-liquid chromatography. Gas-liquid principles chromatography. Supercritical fluid chromatography. Purchased chromatographic techniques. Special techniques.* | | |
| **References**  Милан Митић, Хроматографске методе, Прироно математички факултет, Ниш. 2017.  James M. Miller. Chromatography-concepts and Concrast John Wiley, 2005. | | |
| **Active teaching classes** | **Lectures 105** | **Laboratory work** |
| **Teaching mode:** lectures, project teaching, seminar, case studies | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | |
| activity during the lecture - 5 points; seminar work – 50 points; oral exam - 45 points | | |