

Study Programme: All programs
Course Unit Title: Liquid chromatography of biologically active compounds
Course Unit Code:
Name of Lecturer(s): Full Professor Marijana M. Ačanski
Type and Level of Studies: Doctoral studies
Course Status (compulsory/elective): Elective
Semester (winter/summer): Winter and summer
Language of instruction: English
Mode of course unit delivery (face-to-face/distance learning): Face-to-face
Number of ECTS Allocated: 10
Prerequisites: None
<p>Course Aims:</p> <p>Course provides students with the acquisition of scientific knowledge and academic skills for independent research in the field of liquid chromatography (TLC, HPTLC, HPLC). Students should also master the preparation of the sample, the proper choice of the chromatographic technique, the stationary phase, the combination of solvents for the preparation of the mobile phase, and thus be able to successfully separate or isolate the desired components from the analyzed material.</p>
<p>Learning Outcomes:</p> <p>After mastering all the above mentioned parameters, the students should be able to stand up for independent scientific and professional work, i.e. to correctly select all parameters and find the most optimal conditions for performing chromatographic analysis of complex mixtures of samples of the biotechnology and pharmaceutical industries. Students should also be able to independently evaluate and present results in the form of professional written material.</p>
<p>Syllabus:</p> <p><i>Theory</i></p> <p>The subject is designed so that students are able to correctly analyze the components usually present in the biotechnology and pharmaceutical industry in the most economical way by correctly choosing the parameters that make up the chromatographic system. They would also get the latest information on innovations of stationary phases, whose continuous improvement, shortens the time of chromatographic analysis, and improves the quality of separation. Also, one of the aspects could be that the student learns how to obtain the results and analyze them statistically so that they simultaneously serve in the research of chromatography theory. This would contribute to explaining the mechanisms of chromatographic processes which are still not sufficiently explained in the theory of chromatography.</p> <p><i>Practice</i></p> <p>Preparation of samples for chromatography, column and mobile phase selection, selection of a suitable liquid chromatography device in combination with different devices for the detection of biologically active components.</p>
<p>Required Reading:</p> <ol style="list-style-type: none"> 1. M. M. Ačanski, Liquid Chromatography of Estradiol and Estrone Derivatives, Monograph, Faculty of Technology, Novi Sad, 2007 2. M. M. Ačanski, Liquid Chromatography of Benzimidazole Derivatives, Monograph, Faculty of Technology, Novi Sad, 2010 3. Encyclopedia of Chromatography, Edited by Jack Cazes, Marcel Dekker 2004 4. Ultra Performance Liquid Chromatography Mass Spectrometry, Edited by Mu Naushad, Mahommad Rizwan Khan,

CRC Press, Taylor & Francis Group, 2014

5. Veronika Meyer, Practical High-Performance Liquid Chromatography, John Wiley and Sons, 2010

6. J. Švarc-Gajić, Sampling and preparation of samples for analysis, Faculty of Technology Novi Sad, Novi Sad, Serbia, 2012

Weekly Contact Hours:

Lectures: 4

Practical work: 2

Teaching Methods:

Theoretical and practical lessons will be organized through interactive lectures and consultations in a group or independently depending on the number of students; computer work, use of the Internet, creation and presentation of seminars.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	20	oral exam	50
Seminar	30		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.