Course Unit Descriptor

Study Programme: Pharmaceutical Engineering

Course Unit Title: Analysis of Pharmaceutical Products

Course Unit Code: O8FI01

Name of Lecturer(s): Full professor Radomir Malbaša, Associate professor Jasmina Vitas

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Summer

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): Face-to-face

Number of ECTS Allocated: 5

Prerequisites: None

Course Aims:

Acquisition of basic scientific and academic knowledge and skills necessary for application in control, development and research laboratories of the pharmaceutical industry.

Learning Outcomes:

Through lectures and laboratory exercises students will be introduced to methods of control and methods of analysis (qualitative, semi-quantitative and quantitative) described in *Ph. Jug.V* and their application in the analysis of end products and active substances of the pharmaceutical industry.

Syllabus:

Theory

General requirements in the analysis of pharmaceutical products. Description and Introduction to Pharmacopoeia (*Ph.Jug.V*). Physical and physico-chemical methods described in *Ph.Jug.V*. Semi-quantitative determinations-Limit tests (*Ph.Jug.V*). Determination of the content of active substances and other components of pharmaceutical preparations according to *Ph.Jug.V*. Application of instrumental methods for identification, limit tests and determination of components of pharmaceutical preparations according to *Ph.Jug.V*. Biological tests according to *Ph.Jug.V*. Physico-chemical methods in pharmacognosis.

Practice

Prearrangement for the analysis and analysis of the pharmaceutical preparation according to the monograph from *Ph.Jug.V*. Presentation of results, written report and oral defense.

Required Reading:

1. *Pharmacopoea jugoslavica*, *Ph. Jug. V*, 2000.

2. Vitas, J., Malbaša, R. (2019): Analysis of Pharmaceutical Products, Practicum with Workbook, ISBN: 978-86-6253-094-3, University of Novi Sad, Faculty of Technology Novi Sad (in Serbian).

3. Malbaša, R., Vitas, J., Vukmanović, S. (2021): Analytical Chemistry, Practicum with Workbook, ISBN: 978-86-6523-124-7, University of Novi Sad, Faculty of Technology Novi Sad (in Serbian).

4. Hansen, Steen H.; Pedersen-Bjergaard, Stig; Rasmussen, Knut E. Introduction to Pharmaceutical Chemical Analysis. Wiley, 2012.

5. Pedersen, Ole. Pharmaceutical Chemical Analysis: Methods for Identification and Limit Tests. Taylor & Francis, 2006.

Weekly Contact Hours: 5	**Lectures:** 2	**Practical work:** 3

Teaching Methods:

Interactive lectures using video presentations; consultations; laboratory exercises - independent or in smaller groups.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	60
Practical work	25	oral exam	
Preliminary exam(s)			
Seminar(s)	10		

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