UNIVERSITY OF NOVI SAD
FACULTY OF MEDICINE

Study program: Doctoral Academic Studies in Biomedical Sciences

Name of the subject: ANALYSIS OF DRUGS, POISONS AND NATURAL PRODUCTS

Teacher(s): Branislava U. Srđenović Čonić, Jelena M. Helen Cvejić, Ljilja D. Torović, Milica T. Atanacković Krstonošić, Neda S. Gavarić, Mira P. Mikulić

Status of the subject: elective

Number of ЕСПБ points: 20

Condition: -

Goal of the subject:
The overarching goal of the subject is to gain, analyse and evaluate knowledge in the field of drug analysis, analytical toxicology, analysis of natural products

Outcome of the subject
Knowledge: Students broaden their basic theoretical knowledge of pharmaceutical, toxicological and natural products analysis and obtain professional experience upon working with state-of-the-art analytical equipment.
Skills: Graduates will be well qualified to manage and work in different types of analytical laboratories.

Content of the subject
Theoretical lectures
- Collection, transport and storage of different types of samples; sample preparation; common interferences
- Application of modern analytical techniques in pharmaceutical and toxicological analysis and analysis of natural products (selected spectrometric and chromatographic techniques and techniques of thermal analysis,…)
- Strategies for the development and validation of analytical methods; problem solving approaches
- Role of analytical toxicology in basic, forensic, clinical and occupational toxicology
- Biomarkers in biomonitoring of xenobiotics
- Chemical and organoleptic quality control of raw materials of natural origin (herbal, animal and microbial) and products derived from them
- Standardization of products of natural origin
- Screening of biological activities of isolates and final products of natural origin
- Health safety parameters of products of natural origin
- Interpretation of analytical results

Practical lectures
Interpretation of selected examples of application of modern analytical methods in student's area of interest

Recommended literature

1. Clarke's Analysis of Drugs and Poisons: In Pharmaceuticals, Body Fluids and Postmortem Material. London: Pharmaceutical Press, 2011.
2. Fundamentals of Analytical Toxicology. West Sussex: John Wiley & Sons Ltd, 2007.
3. Biomarkers in Toxicology. London: Academic Press, 2014.
4. Ahuja S, Scypinski S. Handbook of modern pharmaceutical analysis. 2nd ed. Amsterdam: Elsevier, 2011.
5. Paul M. Dewik. Medicinal natural products: A biosynthetic approach. 3rd ed. New Jersey: John Wiley & Sons, 2009.
6. Heinrich M, Barnes J, Gibbons S, Williamson E. Fundamentals of Pharmacognosy and Phytotherapy. Churchill Livingstone, Edinburgh, London, 2004.

Number of active classes	**Theory:** 60	**Practice:** 45

Methods of delivering lectures
Interactive theoretical and practical lectures, seminar papers, lectures of invited

Evaluation of knowledge (maximum number of points 100)
activities during lectures: 5
practices: 25
seminars: 10
written exam: 50
oral exam: 10