Course Unit Descriptor

Study Programme: PHYTOMEDICINE

Course Unit Title: Safety and Health of Agricultural Products

Course Unit Code: 19.FTM029

Name of Lecturer(s): prof. Vojislava Bursić and prof. Dušan Marinković

Type and Level of Studies: Undergraduate studies

Course Status (compulsory/elective): compulsory course

Semester (winter/summer):summer

Language of instruction: English

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

Number of ECTS Allocated: 5

Prerequisites: none

Course Aims: Mastering the knowledge and skills from the course subject, which provides the basis for residues and food contaminants, as well as getting acquainted with the methods of their qualitative and quantitative determination in various agricultural products.

Learning Outcomes: The student is trained for independent theoretical, practical, field and scientific research work by applying the acquired knowledge in the field of residues and contaminants analysis in order to control the food health and the burden on the environment.

Syllabus:

Theory: Introduction to the agricultural policy that should provide consumers with high standards of food safety while protecting the environment. Students will be introduced to food safety standards prescribed by the EU. Contaminants and residues of agricultural products (mycotoxins, biogenic amines, pesticides, microcystins, tropical alkaloids, acrylamide). Good manufacturing practice (GMP), good hygiene practice (GHP), good laboratory practice (GLP), risk analysis and critical control points (HACCAP). Food safety legislation is just some of the topics that will be covered. Students will be introduced to European food laws, EFSA, the work of the RASFF portal (rapid response and alert systems), the traceability of agricultural and animal products, the method of plant and animal health control and agricultural waste management. New trends in the world such as food fraud, advanced methodologies for assessing product safety as well as population exposure assessment and risk management methods.

Practice: Introduction to the instrumental laboratory techniques used in the control of safety of agricultural products. Multiresidual, single and QuPP methods of extraction and detection of analytes (pesticides, mycotoxins, microcystins, antibiotics, tropical alkaloids) in agricultural products. Computational tasks in which the exposures of populations by deterministic and probabilistic approach would be calculated on the basis of input components (detected contaminants), as well as risk categorization based on estimated daily contaminant intake and reference dose (PMTDI).

Required Reading: 1. Bickel R., Rossier R. (2015). Sustainability and quality of organic food, 2nd Edition, FiBL & ORC.

2. Cooper J., Leifert C., Niggli U. (2017). Handbook of Organic Food Safety and Quality, Elsevier Science
3. Nathan N.(2016). Mold & Mycotoxins: Current Evaluation and Treatment, Kindle Edition.
4. Belitz H.D., Grosch W., Schieberle P. (2009). Food Chemistry, 4th revised and extended ed., Springer

Fanali C., Haddad П.P. (2017). Liquid Chromatography: Fundamentals and Instrumentation (Handbooks in Separation Science), Elsevier; 2 edition.

Weekly Contact Hours:	**Lectures: 45**	**Practical work: 30**

Teaching Methods: The theoretical classes are conducted through lessons, presentations and other didactic tools. Practical classes concern individual student work and demonstrative/illustrative methods.Class discussion conducted by teacher. Practical knowledge testing. Consultations related to theoretical/ practical lessons.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	30
Practical work	5	oral exam	40
Seminar(s)	20		

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