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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Science and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Chemistry** |
| Study Module (if applicable) | Chemistry |
| Course title | H-127 Food Additives  |
| Level of study | X Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory X Elective |
| Semester  |  X Autumn ☐Spring |
| Year of study  | Third |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Prof. dr Milena N. Miljkovic |
| Teaching mode | X Lectures ☐Group tutorials ☐ Individual tutorials X Laboratory work ☐ Project X Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Because of the widespread use of additives in food, cosmetic and pharmaceutical industry, it is necessary for students to be introduced with the chemical structure, toxicological properties, law regulative and areas of the application of additives in light of the latest scientific knowledge in the field. Overcoming of problems of the identification and determination of additives, introducing with physiological properties of additives obtained in experiments with animals using completely pure additive. Introducing with problems of permitted quantities for particular additives in food products and control of their content, introducing with the quantities of daily additive intake, as well as interactions of additives with food constituents.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| *Lectures* 1. ***Аntioxidants,***
2. ***Spoilage of fats and oils, Causes of oxidation, Recognizing the problem of the oxidation,***
3. ***Organic food antioxidants,***
4. ***Mechanism and functions, Individual properties of important antioxidants,***
5. ***Acid synergists,***
6. ***Solutions of antioxidants,***
7. ***The choice of antioxidants, Methods of the addition of antioxidants, Estimation of the efficacy of antioxidants,***
8. ***Behaviour of antioxidants in important applications;***
9. ***Sweeteners, Polyhydroxylic alcohols, Saccharin, Cyclamates, Аspartame, Аcesulfame-К, Stevioside, Тhaumatin, Neohesperidin dihydrochalcone, Saccharose, RTI-001;***
10. ***Flavors, Natural flavors, Synthetic flavorings;***
11. ***Colours, Natural colours, Synthetic colours;***
12. ***Preservatives;***
13. ***Еnzymes, The choice of enzymes for food application;***
14. ***Vitamins, Fat-soluble vitamins, Water soluble vitamins.***
15. ***Еmulsifiers, anionic emulsifiers, nonionic emulsifiers, emulsifiers of natural originе, micelle coloids*.**

***Practical teaching: Exercises, Other forms of teaching, Study work**** ***Determination of sugars in fruit juices***
* ***Determination of free and bound acidity of fruit juices***
* ***Determiantion of free sulphurous acid in white wine***
* ***Determination of vitamin C according to Harris***
* ***Proving of water soluble artificial colours***
* ***Proving of impurities binding water-determination of added water (Feder’s number) in meet products***
* ***Proving of nitrites in meet products***
* ***Proving of sulphites in meet products***
* ***Proving of boric acid in meet products***
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| **LANGUAGE OF INSTRUCTION** |
| X Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **12** | **Written examination** | **/** |
| **Practical teaching** | **24** | **Oral examination** | **40** |
| **Teaching colloquia** | **24** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |