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| <b>Study Programme: PHYTOMEDICINE</b>  |                     |                           |        |
| <b>Course Unit Title: BIOINDICATIVE ZOOLOGY</b>  |                     |                           |        |
| <b>Course Unit Code: 19.FT1014</b>   |                     |                           |        |
| <b>Name of Lecturer(s): prof. Aleksandar Jurišić, PhD; prof. Aleksandra Petrović, PhD, doc. Ivana Ivanović, PhD</b>  |                     |                           |        |
| <b>Type and Level of Studies:</b> Undergraduate academic studies   |                     |                           |        |
| <b>Course Status (compulsory/elective):</b> elective   |                     |                           |        |
| <b>Semester (winter/summer):</b> summer  |                     |                           |        |
| <b>Language of instruction:</b> English  |                     |                           |        |
| <b>Mode of course unit delivery (face-to-face/distance learning):</b> face-to-face   |                     |                           |        |
| <b>Number of ECTS Allocated:</b> 6   |                     |                           |        |
| <b>Prerequisites:</b> none   |                     |                           |        |
| <b>Course Aims:</b><br>Introducing students to bioindicative zoology in agriculture and environmental protection. Student education for independent identification of animal species used as bioindicators and biomonitors. Introduction to the structure, functions and organization of animal organisms of importance for bioindicative zoology. Training to assess the status of ecosystems.  |                     |                           |        |
| <b>Learning Outcomes:</b><br>Theoretical and practical knowledge of bioindicative zoology. Independent assessment and use of animal species in ecosystem monitoring protocols and methods. Knowledge of biology and ecology of selected animal species.  |                     |                           |        |
| <b>Syllabus:</b><br><i>Theory</i><br>Introduction to bioindicative zoology. History and development of bioindicative zoology within the ecological sciences. Animal taxa used as bioindicators, biomarkers and biomonitors. Invertebrates: Nematode, Annelida, Mollusca, Arthropoda. Vertebrata: Pisces, Amphibia, Aves, Mammalia. Biology, ecology and physiology of these species. Definition of stress, plasticity and adaptation in the animal world.<br><i>Practice</i><br>Sampling, identification and utilization of zooplankton, macro-, microinvertebrates and vertebrates. Biology, ecology, physiology and behavior of these species. Calculation of ecological indices and biodiversity indices. |                     |                           |        |
| <b>Required Reading:</b><br>Markert B.A., Breure A.M., Zechmeister H.G. (eds) (2003): Bioindicators and Biomonitors. Elsevier.<br>Jeffrey D.W., Madden B. (eds) (1991): Bioindicators and Environmental Management. Academic Press.<br>McKenzie D.H., Hyatt D.E., McDonald V.J. (eds) (1992): Ecological Indicators: Volume 1. Springer-Science + Business Media, B.V.<br>Hickman, Jr. C.P., Roberts, L.S., Keen, S.L., Larson, A., I'Anson, H., Eisenhour, D.J. (2008): Integrated Principles Of Zoology, 14th Ed. McGraw-Hill, New York, USA   |                     |                           |        |
| <b>Weekly Contact Hours:</b>   | <b>Lectures: 15</b> | <b>Practical work: 30</b> |        |
| <b>Teaching Methods:</b><br>Lectures: presentations and consultations;<br>Practical classes: independent laboratory exercises with microscopic and macroscopic samples, calculations   |                     |                           |        |
| <b>Knowledge Assessment (maximum of 100 points):</b>   |                     |                           |        |
| <b>Pre-exam obligations</b>  | points              | <b>Final exam</b>         | points |
| Active class participation   | 5                   | written exam              | 30     |
| Practical work   | 5                   | oral exam                 | 30     |
| Preliminary exam(s)  | 30                  | .....                     |        |
| Seminar(s)   |                     |                           |        |
| The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam,  |                     |                           |        |

project presentation, seminars, etc.