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| **Course unit**  **Descriptor** | **Faculty of Education** | | logo_UNS.png |
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| **GENERAL INFORMATION** | | | |
| Study program in which the course unit is offered | | **BA in Primary Teacher Education, BA in Preschool Teacher Education** | |
| Course unit title | | Natural Sciences III - Biology | |
| Course unit code | |  | |
| Type of course unit[[1]](#footnote-2) | | Compulsory | |
| Level of course unit[[2]](#footnote-3) | | Bachelor | |
| Semester when the course unit is offered | | IV | |
| Year of study (if applicable) | | Second | |
| Number of ECTS allocated | | 4 | |
| Name of lecturer/lecturers | | Danijela Petrovic Graovac | |
| Mode of course unit delivery[[3]](#footnote-4) | | Face-to-face | |
| Course unit pre-requisites (if any) | | / | |
| **PURPOSE AND OVERVIEW (max 5-10 sentences)** | | | |
| Students will acquire the necessary knowledge of certain areas of biology: structure and biochemistry of the cell, developmental biology, genetics, systematic of living organisms, anatomy and physiology of plants and animals. These findings provide understanding of biological phenomena and processes related to interdisciplinary approach to the natural sciences. | | | |
| **LEARNING OUTCOMES (knowledge and skills)** | | | |
| After successful completion of the course, it is expected that students gain necessary knowledge about the basic characteristics of living unicellular and multicellular organisms as well as about modern understanding of the developmental processes, inheritance and variability. Students will also adopt the basic principles of physiology and anatomy of plants and animals, as well as basic determination of flora and fauna. The knowledge gained during this course, graduate teachers and preschool teachers will be able to widely implement in their teaching activities. | | | |
| **SYLLABUS (outline and summary of topics)** | | | |
| Theoretical classes: History of biology; The concept of nature, animate and inanimate matter, the origin of life; Cytology - cell organelles; Physiology and biochemistry of the cells (anabolism, catabolism, biocatalysts); Embryology - developmental biology (cell division, gametogenesis, fertilization, embryogenesis and postembryonic development); Genetics - biological inheritance and variability, with the basic rules of inheritance and the basic concepts of human and medical genetics; The concept of systematics and taxonomy; The morphology and systematics of invertebrates; The morphology and systematics of vertebrates. Practical classes: Laboratory exercises  The microscopic techniques; The morphology of plants (basic principles of plant anatomy, timber plant organs, deciduous and coniferous plant reproduction, pollination, fertilization, seeding); Elements of phytophysiology, phytoecology, phytogeography; Systematics and determination of plants; Elements of zoomorphology. | | | |
| **LEARNING AND TEACHING (**planned learning activities and teaching methods) | | | |
| Classes per week: 2+2 (lectures + practical training)  Verbal, Textual, Audio-visual teaching methods; Demonstrations; Laboratory | | | |
| **REQUIRED READING** | | | |
| Petrovic, D. (2016): Lecture notes  Bogosavljevic - Sijakov, M., Petrovic, D., Krivokucin, I. (2016): Practicum/Manual for practical work;  Bailey, E.R. (2009): Concepts in Biology | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | |
| Practical training – 5 points, Seminar paper – 10 points, Herbarium/collection of seeds/miniature garden – 10 points, Test – 10 points, Written exam – 30 points, Oral exam – 35 points | | | |
| **LANGUAGE OF INSTRUCTION** | | | |
| English | | | |

1. Compulsory, optional [↑](#footnote-ref-2)
2. First, second or third cycle (Bachelor, Master's, Doctoral) [↑](#footnote-ref-3)
3. Face-to-face, distance learning, etc. [↑](#footnote-ref-4)