Course Unit Descriptor

Study Programme: Primary Teacher Education, Preschool Teacher Education

Course Unit Title: Sciences III - Biology

Course Unit Code: PTE3

Name of Lecturer(s): Associate Professor Danijela Petrovic Graovac

Type and Level of Studies: Bachelor Academic Degree

Course Status (compulsory/elective): Compulsory

Semester (winter/summer): Summer

Language of instruction: English

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

Number of ECTS Allocated: 4

Prerequisites: None

Course Aims:

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:

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:

Theory

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.

Practice

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.

Required Reading:

1. Bogosavljevic - Sijakov, M., Petrovic, D., Krivokucin, I. (2016): Biology Practicum (Manual for practical work);
2. Bailey, E.R. (2009): Concepts in Biology

Weekly Contact Hours: 4	**Lectures:** 2	**Practical work:** 2

Teaching Methods:

Verbal, Textual, Audio-visual teaching methods; Demonstrations, Laboratory			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	**Final exam**	points
Herbarium/collection of seeds/miniature garden	10	written exam	30
Practical work	5	oral exam	35
Test	10	…….	
Seminar(s)	10		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			