Course Unit Descriptor

| |
|---|
| **Study Programme:** BSc in Biology |
| **Course Unit Title:** Phycology |
| **Course Unit Code**: DBO10 |
| **Name of Lecturer(s):** Dr Zorica Svirčev |
| **Type and Level of Studies:** Bachelor 4th year |
| **Course Status (compulsory/elective):** Elective |
| **Semester (winter/summer):** Summer |
| **Language of instruction:** English or Serbian |
| **Mode of course unit delivery (face-to-face/distance learning):** face-to-face |
| **Number of ECTS Allocated:** 8 |
| **Prerequisites:** none |
| **Course Aims:** The course is designed to elucidate the importance of microalgae and cyanobacteria in natural ecosystems, in order to prepare students for the application of knowledge through solving various problems related to quality and environmental protection and implementation of the principles of sustainable development. The emphases are also placed on understanding the importance of algae and cyanobacteria regarding their biochemical, physiological and genetic potentials as well as biotechnological applications. |
| **Learning Outcomes:** After passing the course of Phycology students are expected to:<br>demonstrate understanding of specific cell organisation and growth patterns of microalgiae and cyanobacteria; explain the main pathways in physiology and genetics of microalgae and cyanobacteria; describe the role of microalgae and cyanobacteria in the ecosystem and explain the specific relationships among microalgae, cyanobacteria and other organisms; explain the role of microalgi and cyanobacteria in various biotechnological processes; work independently in the algological laboratory. |
| **Syllabus:**<br>*Theoretical part:* Classification of algae and cyanobacteria, the functional structure of algal and cyanobacterial cells, the basic physiological processes-comparative approach, ecology of algae and cyanobacteria, algae and cyanobacteria in extreme condition, bioindicator significance, production of secondary metabolites, toxins of algae and cyanobacteria, biologically active substances: antibiotics and antitumor substances, mikroalge and cyanobacteria in the soil, the waste water purification, phyco and cyanoremediation, recultivation, algae and cyanobacteria as a food and feed.<br><br>*Practical part:* Preparing fhe mineral media for isolation and purification of microalgae and cyanobacteria, the isolation of soil microalgal and cyanobacterial strains, classification and purification of isolates, quantitative determination of microalgal biomass, the importance of cultivating method in determing the biodiversity and taxonomy of microalgae and cyanobacteria, cyanobacteria and microalgae in saprobiology, the importance of microalgal and cyanobacterial toxins and pigments. |
| **Required Reading:**<br>1. Svirčev Z. (2005): Microalgae and Cyanobacteria in Biotechnology. Faculty of Sciences, University of N. Sad, (In Serbian).<br><br>2. Blaženčić J. (1988): Systematics of Algae. Naučna knjiga, Belgrade (In Serbian).<br><br>3. Lee R. (2018): Phycology. Colorado State University, USA. |

| | | |
|---|---|---|
| **Weekly Contact Hours:** 5 | **Lectures:** 2 | **Practical work:** 3 |

| | | | |
|---|---|---|---|
| **Teaching Methods:**<br>Lectures, practical laboratory work in student groups | | | |
| **Knowledge Assessment (maximum of 100 points):** | | | |
| **Pre-exam obligations** | points | **Final exam** | points |
| Active class participation | 5+5 | written exam (practical) | 10 |
| Practical work | | oral exam | 40 |
| Preliminary exam(s) | 30 | ……. | |
| 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. | | | |