Study Programme : B.Sc. BIOLOGY

Degree level: Bachelor degree

Course Title: Phycology OB072

Professor: Dr Zorica Svirčev

Elective Course

Number of ECTS: 8

Prerequisites: -

Course Objective: 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.

Course Outcome: After passing the course of Phycology students are expected to:
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.

Course Content:
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.

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.

Reading List:
1. Svirčev Z. (2005): Microalgae and Cyanobacteria in Biotechnology. Faculty of Sciences, University of N. Sad, (In Serbian).
2. Blaženčić J. (1988): Systematics of Algae. Naučna knjiga, Belgrade (In Serbian).

Total hours:				
Lectures: 2	Practicals:	Other: 3	Student research work: 5	

Methods of instruction: Lectures, practicals, consultations, seminars, colloquia, field work. Classes will be realized in the form of lectures and seminar work. Lectures are conducted using a computer presentation to a video projector, projection of films and slides, as well as the field continues. The exercises are carried out effectively in the laboratory and field teaching.

Assessment (maximum number of points 100)

Requirements	**points**	**Final exam**	**points**
Active participation in lectures	5	Practical exam	10
Active participation in practicals	5	Oral exam	40
Test(s) or	30	Seminar	10
Pre-exam testing			

Remark: