



DEPARTMENT OF BIOLOGY AND ECOLOGY

**POSTGRADUATE ACADEMIC STUDIES
BIOLOGY**

for obtaining the education degree and professional title

Doctor of Biological Science

THE STRUCTURE OF THE STUDY PROGRAM

TITLE AND AIMS OF THE STUDY PROGRAM

Postgraduate academic studies of Biology last three years (6 semesters). Upon completion these studies, student acquires the professional title:

PhD – Biology

Aims of the study program is education of PhD students in the field biological sciences which will have job opportunities in Serbia, EU and other countries in area of education system, biology and applied biology, natural sciences, environmental protection, health care, agriculture, veterinary medicine, medicine, as well as in other related fields; introduction of candidates into independent and team scientific research; the advancement of knowledge to PhD level that would provide a basis for further work, and deal with fundamental and applicative research in the field of biology; training of candidates for writing a scientific papers, solving scientific problems and results, the use of modern information technology; acquiring the skills of planning experiments, laboratory and external work, and interpretation of the obtained results.

PURPOSE OF THE STUDY PROGRAM

The study program purpose of Postgraduate academic studies is obtaining of PhD academic level in Biology. By mastering a given study program, students acquire knowledge, skills and attitudes necessary to perform tasks in educational and research institutions, obtain the theoretical and/or experimental knowledge for further education and independent scientific work, knowledge of the principles of presentation of their results in the form of a scientific article or presentation at a scientific meeting.

ADMISSION REQUIREMENTS FOR THE STUDY PROGRAM

The postgradual studies may enroll candidates who have completed the previous levels of education in biology, ecology, molecular biology and physiology and related scientific fields and achieved a minimum of 300 ECTS credits and a minimum average grade 8.00. For admission to Postgraduate studies it is required the knowledge of the English language.

VALUE OF PHD THESIS DENOMINATED IN ECTS

PhD thesis is a result of a research study work and represents the final exam for obtaining the academic title doctor of biological science.

A distribution of the study program courses into semesters and academic years

PhD ACADEMIC STUDIES BIOLOGY

	C	Course Title	S	Course Status	Active Teaching		ECTS
					L	OFT	
FIRST YEAR							
1.	B300	Methodology of scientific research	1	E	3	0	6
2.	B301	Biostatistics and bioinformatics	1	E	4	0	6
3.		Courses of elective block 1	1	EB1	7	0	12
4.	B311	Research Block 1	1	E	0	6	6
5.		Courses of elective block 2	2	EB2	7	0	12
6.	B323	Research Block 2	2	E	0	13	18
Total classes of Active Teaching (L+OFT) = 21 + 19 = 40							60
SECOND YEAR							
1.		Courses of elective block 3	3	EB3	7	0	12
				EB3	7	0	12
2.	B339	Research Block 3	3	E	0	6	6
3.		Courses of elective block 4	4	EB4	7	0	12
4.	B352	Research Block 4	4	E	0	13	18
Total classes of Active Teaching (L+OFT) = 21 + 19 = 40							60
THIRD YEAR							
1.	B353	PhD thesis - Research study	5	E	0	20	30
2.	B354	PhD thesis	6	E	0	20	30
Total classes of Active Teaching (L+OFT) = 0 + 40 = 40							60
							Total ECTS 180

The list of elective courses in the study program

PhD ACADEMIC STUDIES BIOLOGY

S.N.	C	Course Title	Course Status	Active Teaching		ECTS
				L	SR	
1.	B300	Methodology of scientific research	E	3	0	6
2.	B301	Biostatistics and bioinformatics	E	4	0	6

Courses of elective block 1 – one subject is chosen.

3.	B302	System physiology	EB1	7	0	12
4.	B303	Molecular biology of eukaryotic cells	EB1	7	0	12
5.	B304	Advanced course in genetics	EB1	7	0	12
6.	B305	Selected chapters in biochemistry	EB1	7	0	12
7.	B306	Selected chapters in microbiology	EB1	7	0	12
8.	B307	Advanced course in mycology	EB1	7	0	12
9.	B308	Structural and functional botany	EB1	7	0	12
10.	B309	Principles of taxonomy and systematics	EB1	7	0	12
11.	B310	Advanced course of hydrobiology and water protection	EB1	7	0	12
12.	B311	Research study 1	E	0	6	6

Courses of elective block 2 – one subject is chosen.

13.	B312	Molecular physiology	EB2	7	0	12
14.	B313	Human and medical genetics	EB2	7	0	12
15.	B314	Selected chapters in enzymology	EB2	7	0	12

16.	B315	Methods of microbiological research	EB2	7	0	12
17.	B316	Methods and techniques in mycology	EB2	7	0	12
18.	B317	Physiological ecology of plants	EB2	7	0	12
19.	B318	Biology and protection of selected taxon of fungus and higher plants	EB2	7	0	12
20.	B319	Biology and protection of selected taxon of invertebrates	EB2	7	0	12
21.	B320	Biology and protection of selected taxon of vertebrates	EB2	7	0	12
22.	B321	Methods in entomological research	EB2	7	0	12
23.	B322	The methodology of hydro-biological research	EB2	7	0	12
24.	B323	Research study 2	E	0	13	18

Courses of elective block 3 – two subjects are chosen.

25.	B324	Toxicology	EB3	7	0	12
26.	B325	Molecular biotechnology	EB3	7	0	12
27.	B326	Biochemistry of food and nutrition	EB3	7	0	12
28.	B327	Biochemistry and physiology of microorganisms	EB3	7	0	12
29.	B328	Biologically active substances of fungus and higher plants	EB3	7	0	12
30.	B329	Biology, ecology and conservation of algae and aquatic plants	EB3	7	0	12
31.	B330	Invasive and toxic algae	EB3	7	0	12
32.	B331	Flora and vegetation of the Balkan Peninsula	EB3	7	0	12
33.	B332	Regulation of plant growth and development	EB3	7	0	12
34.	B333	Morphological adaptations and phenotypic evolution	EB3	7	0	12
35.	B334	Biology, ecology and conservation of aquatic macroinvertebrates and fishes	EB3	7	0	12
36.	B335	The advanced course of conservation ecology of soil invertebrates	EB3	7	0	12
37.	B336	Statistics in biological research	EB3	7	0	12
38.	B337	Applied bioinformatics	EB3	7	0	12
39.	B338	Scientific and project management	EB3	7	0	12
40.	B339	Research study 3	E	0	6	6

Courses of elective block 4 – one subject is chosen.

41.	B340	Molecular mechanisms of pathophysiological processes	EB4	7	0	12
42.	B341	Molecular biology of malignant cells	EB4	7	0	12
43.	B342	Manipulation of cells and tissues	EB4	7	0	12
44.	B343	Cancer genetics	EB4	7	0	12
45.	B344	Pathogenic fungus	EB4	7	0	12
46.	B345	Interactions of organisms in natural ecosystems	EB4	7	0	12
47.	B346	The morphology, systematics and managing hunting species	EB4	7	0	12
48.	B347	Ecological monitoring of aquatic ecosystems	EB4	7	0	12
49.	B348	Advanced course in fisheries and aquaculture	EB4	7	0	12
50.	B349	Conservation biogeography	EB4	7	0	12
51.	B350	Selected chapters in soil ecotoxicology	EB4	7	0	12
52.	B351	Selected chapters of bioremediation	EB4	7	0	12

	****	Course from elective block 1, 2, 3 or 4 the student has not attended, or course from another study program	EB4	7	0	12
53.	B352	Research study 4	E	0	13	18

54.	B353	PhD thesis - Research study	E	0	20	30
55.	B354	PhD thesis - Thesis defense	E	0	20	30