

## **BA IN BIOLOGY – GENERAL AND APPLIED (TAUGHT IN BULGARIAN)**

**Brief presentation of the program:** BP "Biology - General and applied" combines classical and modern biology. Training in the program during the first two years covers general education such as the foundation of Biology, Biological anthropology; Fundamentals of Informatics; practical courses - Zoology of invertebrates and vertebrates, Anatomy and morphology of plants, Botany, Plant Physiology, Human Body, Chemistry, Organic Chemistry, Analytical Chemistry, Cytology, Cell Biology, Histology, Mycology, Parasitology and others. To each one of the biological disciplines are being conducted practical exercises. During the first and second year are held summer practices with students.

During the third and fourth year the program contains specialized biological subjects such as Biochemistry, Fundamentals of Microbiology, Genetics, Virology, Molecular Biology, Physical methods in biology, Enzymology, Bioinformatics, Pharmacology, etc.

Over the last two years of the course the students are required practices, independent work and internships in other disciplines.

### **Major and professional qualification**

**Specialization:** General Biology

**Major:** Biology

**Qualification:** Biologist

**Specialization:** Microbiology

**Major:** Biology

**Qualification:** Biologist

### **PPROGRAM**

#### **First semester courses**

##### ***BASIC COURSES***

**GENB007 Biology** 30 academic hours, 1/2, 3 credits

**GENB001A Mathematics** 30 academic hours, 1/2, 3 credits

**GENB053 Physics and Astronomy** 30 academic hours, 1/2, 3 credits

##### ***PRACTICAL CREDIT COURSES***

**OOOK009 Introduction to Anthropology** 30 academic hours, 3 credits

**OOOK020 Ecology for everyone** 30 academic hours, 3 credits

**OOOK140 Gems and Minerals** 30 academic hours, 3 credits

#### **Second semester courses**

##### ***BASIC COURSES***

**GENB007 Biology** 30 academic hours, 2/2, 3 credits

**GENB001A Mathematics** 30 academic hours, 2/2, 3 credits

**GENB053 Physics and Astronomy** 30 academic hours, 2/2, 3 credits

##### ***PRACTICAL CREDIT COURSES***

**OOOK017 World development regionalization and globalization** 30 academic hours, 3 credits

**OOOK021 Universal Geology and Astronomy** 30 academic hours, 3 credits  
**OOOK090 Reproduction as game of nature** 30 academic hours, 3 credits

### Third semester courses

#### ***BASIC COURSES***

**GENB056 Chemistry** 30 academic hours, 1/2, 3 credits  
**GENB018 Global world** 30 academic hours, 1/2, 3 credits  
**GENB049 Brain and behavior** 30 academic hours, 1/2, 3 credits  
**GENB054 Earth and environment sciences** 30 academic hours, 1/2, 3 credits

#### ***PRACTICAL CREDIT COURSES***

**OOOK024 Telecommunications** 30 academic hours, 3 credits  
**OOOK025 Informatics introduction** 30 academic hours, 3 credits  
**OOOK056 Evolution and Archaeology** 30 academic hours, 3 credits  
**OOOK148 Modern Biological achievements** 30 academic hours, 3 credits  
**OOOK149 Modern concepts of Natural History** 30 academic hours, 3 credits  
**OOOK150 Man and Environment** 30 academic hours, 3 credits

### Fourth semester courses

#### ***BASIC COURSES***

**GENB056 Chemistry** 30 academic hours, 2/2, 3 credits  
**GENB018 Global world** 30 academic hours, 2/2, 3 credits  
**GENB049 Brain and behavior** 30 academic hours, 2/2, 3 credits  
**GENB054 Earth and environment sciences** 30 academic hours, 2/2, 3 credits

#### ***PRACTICAL CREDIT COURSES***

**OOOK034 University worlds** 30 academic hours, 3 credits  
**OOOK053 Gender and Culture** 30 academic hours, 3 credits  
**OOOK080 Key communication skills** 30 academic hours, 3 credits  
**OOOK109 What is Photography** 30 academic hours, 3 credits  
**OOOK152 Natural disasters and risks** 30 academic hours, 3 credits  
**OOOK153 Food, diet, health** 30 academic hours, 3 credits

### Fifth semester courses

#### ***BASIC COURSES***

**BIOB008 Bioethics** 30 academic hours, 3 credits  
**CELB011 Fundamentals of Microbiology** 30 academic hours, 3 credits  
**CELB013 Reproductive Biology and Embryology** 30 academic hours, 3 credits  
**CELB014 Biochemistry** 30 academic hours, 3 credits  
**CELB024 Physical and physicochemical methods in Biology** 30 academic hours, 3 credits  
**CELB152 physiology of animals and man** 30 academic hours, 3 credits  
**CELB260 Parasitology** 30 academic hours, 3 credits  
**ESCB821 Human Ecology** 30 academic hours, 3 credits

#### ***EXTRACURRICULAR FORMS OF TRAINING (credit courses)***

**CELB018 Individual work in Histology** 30 academic hours, 3 credits  
**CELB250 Practice in Microbiology, Biochemistry and Reproductive Biology and Embryology**  
90 academic hours, 9 credits

## Sixth semester courses

### ***BASIC COURSES***

**CELB003 Zoology of vertebrates** 30 academic hours, 3 credits  
**CELB007 Green Pharmacology** 30 academic hours, 3 credits  
**CELB008 Cytology** 30 academic hours, 3 credits  
**CELB025 Virology** 30 academic hours, 3 credits  
**CELB026 Genetics** 30 academic hours, 3 credits  
**CELB027 Biodiversity and bioresources** 30 academic hours, 3 credits  
**CELB030 Infectious agents and immune response** 30 academic hours, 3 credits  
**CELB148 Anatomy and morphology of plants** 30 academic hours, 3 credits

### ***EXTRACURRICULAR FORMS OF TRAINING (credit courses)***

**CELB251 Practice: genetics, virology, infectious agents and immune response**  
90 academic hours, 9 credits  
**CELB252 Seminar: Preparation of materials for clinical laboratory tests** 30 academic hours, 3 credits

## **1. Specialization Microbiology**

## Seventh semester courses

### ***BASIC COURSES***

**CELB038 Microbiology of water and waste water** 30 academic hours, 3 credits  
**CELB039 Soil Microbiology** 30 academic hours, 3 credits  
**CELB040 Physiology of Microorganisms** 30 academic hours, 3 credits  
**CELB041 Microorganisms genetics** 30 academic hours, 3 credits  
**CELB049 Phytobacteriology** 30 academic hours, 3 credits  
**CELB050 Microbial Biochemistry** 30 academic hours, 3 credits  
**CELB053 Molecular methods in Microbiology** 30 academic hours, 3 credits  
**CELB229 Food Microbiology** 30 academic hours, 3 credits

### ***EXTRACURRICULAR FORMS OF TRAINING (credit courses)***

**CELB042 Internship "Laboratory microbiological analysis of environmental samples"** 120 academic hours, 12 credits

## Eighth semester courses

### ***BASIC COURSES***

**CELB043 Microbiology of human and bacterial pathogenesis** 30 academic hours, 3 credits  
**CELB044 Virus infections** 30 academic hours, 3 credits  
**CELB045 Medical Mycology** 30 academic hours, 3 credits  
**CELB046 Antimicrobial therapeutic agents** 30 academic hours, 3 credits  
**CELB047 Immunotherapy of microbial infections** 30 academic hours, 3 credits  
**CELB260 Parasitology** 30 academic hours, 3 credits

### ***EXTRACURRICULAR FORMS OF TRAINING (credit courses)***

**CELB048 Internship "Analysis in the clinical microbiology laboratory"**  
180 academic hours, 18 credits

## **2. Specialization General Biology**

### **Seventh semester courses**

#### ***BASIC COURSES***

- CELB029 Laboratory testing for clinic** 30 academic hours, 3 credits
- CELB050 Microbial Biochemistry** 30 academic hours, 3 credits
- CELB051 Bio management and quality management** 30 academic hours, 3 credits
- CELB053 Molecular methods in microbiology** 30 academic hours, 3 credits
- CELB055 Computer Biostatistics** 30 academic hours, 3 credits
- CELB149 Mycology** 30 academic hours, 3 credits
- CELB261 Nutrition and Dietetics** 30 academic hours, 3 credits
- CELB262 Radiobiology** 30 academic hours, 3 credits

#### ***EXTRACURRICULAR FORMS OF TRAINING (credit courses)***

- CELB257 Internship in inorganic, organic and analytical chemistry** 120 academic hours, 12 credits

### **Eighth semester courses**

#### ***BASIC COURSES***

- CELB016 Oxidative stress** 30 academic hours, 3 credits
- CELB065 Genetic engineering and GMO** 30 academic hours, 3 credits
- CELB067 Industrial Biotechnology** 30 academic hours, 3 credits
- CELB069 Fundamentals of Pharmacology and Toxicology** 30 academic hours, 3 credits
- CELB097 Biological methods in criminology** 30 academic hours, 3 credits
- CELB264 Molecular Biology** 30 academic hours, 3 credits

#### ***EXTRACURRICULAR FORMS OF TRAINING (credit courses)***

- CELB258 Internship in Plant Physiology with Botany, Zoology and Anatomy and Physiology and Human** 180 academic hours, 18 credits