

## **English Language Courses for Erasmus+ Students at the Institute of Biology, University of Bialystok**

1. **ECOLOGY - 5 ECTS.** Problems of general and population ecology in connection with biodiversity of the north-eastern Poland.

List of the examples courses in the module:

- ✓ Physiological Ecology -lecture
- ✓ Evolutionary Ecology - lecture
- ✓ Avian Biology - lecture
- ✓ Host-parasitoid coevolution - lecture and field course
- ✓ Ecological genetics – laboratory
- ✓ Animal population ecology – 3 days field course in Gugny Field Station, Biebrza National Park
- ✓ “Going wild”, methods in field ecology – field course in Gugny Field Station, Biebrza National Park
- ✓ Ecology of butterflies – lecture and field course
- ✓ Plant population ecology
- ✓ Thermal biology- lecture
- ✓ Scientific methodology and experimental design - seminar

2. **HYDROBIOLOGY - 5 ECTS.** Basic treatise on life of freshwater with respect to their production and food chains and their functioning including nutrient recycling and relation to terrestrial ecosystems.

List of the examples courses in the module:

- ✓ Floodplain ecology – lecture
- ✓ Harmful algae - lecture
- ✓ Freshwater ecology – lecture and laboratory
- ✓ Freshwater ecosystem – field course in Wigry National Park
- ✓ Monitoring of freshwater ecosystems - lecture and laboratory

3. **NATURAL AND CULTURAL ENVIRONMENT OF NORTH-EASTERN POLAND – 5 ECTS.** Inanimate nature as a place for organisms’ activities, diversity of organisms’ habitats and niches, adaptations of organisms to life conditions, contribution of humans in formation of environment, national and landscape parks in north–eastern Poland.

List of the examples courses in the module:

- ✓ Natural Environment of North East Poland - lecture
- ✓ Soils and landscape - field course in Suwalki Landscape Park and Wigry National Park
- ✓ Nature 2000 areas functioning - lecture and field course

4. **ENVIRONMENTAL BIOCHEMISTRY AND MICROBIOLOGY - 5 ECTS.** Biochemical processes taking place in the environment, specificity of biochemical pathways in connection with a type of environment, organism adaptation to specificity of environment at the biochemical level, interactions between organisms in natural environment observed at the biochemical level, environmental toxicology.

List of the examples courses in the module:

- ✓ Environmental biochemistry - laboratory
- ✓ Basics of food microbiology - laboratory
- ✓ Clinical virology – seminar

5. **METHODS IN CURRENT BIOLOGY – 5 ECTS.** Exemplary technics used in paleobiology, plant physiology, animal physiology, microbiology, ecology and molecular biology.

List of the examples courses in the module:

- ✓ Techniques in plant physiology - laboratory
- ✓ Techniques of molecular biology - laboratory
- ✓ Selected data analysis techniques for biologists - laboratory
- ✓ Experimental Botany - field course
- ✓ Approaches to estimating density of large mammals

6. **MOLECULAR AND MEDICAL BIOPHYSICS – 5 ECTS.** This course offers study of the biophysical aspects of membranes function and their role in the regulation of signaling, energetic parameters and oxidative stress in cells; new biophysical techniques in investigation of the mechanism action of compounds with potential application in medicine at molecular and cells levels as: electron paramagnetic resonance (EPR), UV-Vis-NIR spectroscopy, spectrophotometry, spectrofluorimetry, differential scanning calorimetry (DSC).

List of the examples courses in the module:

- ✓ Molecular Biophysics, Introduction - lecture and laboratory
  - ✓ Membranology - seminar and laboratory
  - ✓ Reactive oxygen and nitrogen species in health and disease - seminar and laboratory
  - ✓ Principles of enzymology
- \*exemplary of **RESEARCH PROJECT:** Molecular mechanisms of interaction of compounds of plant origin with proteins, lipids and cells.

7. **RESEARCH PROJECT – 150 hours of laboratory and field work**

**If you are interested in research project you must find supervisor:** <http://biol-chem.uwb.edu.pl/IP/ENG/biologia/strukt.htm>

**\*MOST OF THE FIELD COURSES ARE AVAILABLE ONLY IN THE SPRING SEMESTER**