

Annex 1 – List of all Courses for Individual DSPs

A) DSP Biology and Ecology

- I. Compulsory courses (45 credits):
 - Collection and Evaluation of Biological Data (15 credits);
 - Publication Writing (15 credits);
 - Specialised English (15 credits).
- II. Compulsory elective courses (selection of 3 courses; 45 credits):
 - Laboratory Methods in Genomics and Proteomics (15 credits);
 - Environmental Toxicology (15 credits);
 - Landscape and Biodiversity (15 credits);
 - Environmental and Health Risk Analysis in Biological Systems (15 credits);
 - Forest Ecosystem Management (15 credits);
 - Specialised Geoinformatics Methods (15 credits);
 - Environmental Zoology (15 credits);
 - Ecology of Restoration and Management of Anthropogenic Habitats (15 credits);
 - Plant Stress Physiology (15 credits);
 - Electron Microscopy (15 credits);
 - Instrumental Analysis (15 credits);
 - Methods in Palynology (15 credits);
 - Biologically Active Natural Substances (15 credits);
 - Course at another higher education institution (15 credits) – upon agreement with the supervisor, the guarantor of the study programme and the guarantor of the given course.
- III. Completing all courses means obtaining:
 - 45 credits for compulsory courses;
 - 45 credits for compulsory elective courses.

B) DSP Toxicology

- I. Compulsory courses (40 credits):
 - Toxicology (15 credits);
 - Applied Toxicology (15 credits);
 - Specialised English (10 credits).
- II. Compulsory elective courses (choice of 1 course; 15 credits):
 - Analytical Toxicology (15 credits);
 - Environmental Toxicology and Ecotoxicology (15 credits).
- III. Compulsory courses (45 credits):
 - Introductory Course (10 credits);
 - Introduction to Toxicological Methods (laboratory exercises; 15 credits);
 - Advanced Methods in Toxicology (laboratory exercises; 20 credits).

- IV. Completing all courses means obtaining:
- 40 credits for compulsory courses;
 - 15 credits for a compulsory elective course;
 - 45 credits for compulsory courses.

C) DSP Didactics of Physics

- I. Compulsory course (15 credits):
- Specialised English (15 credits).
- II. Compulsory elective course blocks (90 credits):
- Block 1 – Theoretical Physics (15 to 30 credits*):
 - Quantum Physics (15 credits);
 - Mathematics for Theoretical Physics (15 credits);
 - Modelling in Physics (15 credits);
 - Theoretical Mechanics (15 credits);
 - Theoretical Electrodynamics (15 credits);
 - Thermodynamics and Statistical Physics (15 credits);
 - Theory of Relativity and Gravitation (15 credits).
 - Block 2 – Applied Physics (15 to 30 credits*):
 - Computer-Controlled Experiment (15 credits);
 - Astronomy and Astrophysics (15 credits);
 - Meteorology and Climatology (15 credits);
 - Biophysics, Biomechanics and Medical Technology (15 credits);
 - Experiments in Modern Physics (15 credits).
 - Block 3 – General Didactics of Physics (15 to 30 credits**):
 - Development of Physical Knowledge; History of Physics (15 credits);
 - Methodology of Pedagogical Research; Statistical Methods (15 credits);
 - Educational Technology (15 credits);
 - Theory of eLearning (15 credits);
 - Fundamental Problems of School Physics (15 credits);
 - Psychology of Education (15 credits);
 - Social Psychology – Teamwork (15 credits);
 - Physics Curriculum Development (15 credits).
 - Block 4 – Special Didactics of Physics (15 to 30 credits**):
 - Didactic Aspects of the Process of Physics Learning (15 credits);
 - Methods of Solving Physics Problems (15 credits);
 - School Physics Textbooks and Their Creation (15 credits);
 - Physics and the Development of Talented Individuals (15 credits);
 - Comparative Didactics of Physics (15 credits);
 - Project-Based Teaching in Physics (15 credits);
 - Integrated Teaching of Natural Sciences (15 credits).
- III. Completing all courses means obtaining:

- 15 credits for a compulsory course;
- 45 credits from blocks B1 or B2 ...*); a total of 3 courses from blocks B1 or B2;
- 45 credits from blocks B3 or B4 ...**); a total of 3 courses from blocks B3 or B4.

D) DSP Information and Communication Technologies in Education

- I. Compulsory course (10 credits):
 - Specialised English (10 credits).
- II. Blocks of compulsory elective courses (60 credits):
 - Block 1 – Compulsory elective courses in the field of pedagogy; psychology and philosophy (20 credits):
 - Philosophy of Upbringing and Education (10 credits);
 - Methods of Quantitative and Qualitative Research (10 credits);
 - Presentation and Publication of Research Results (10 credits);
 - Psychology of Education (10 credits);
 - Social Psychology – Teamwork (10 credits);
 - School Pedagogy and Psychology (10 credits);
 - Theory of eLearning (10 credits);
 - Creation of an IT Curriculum (10 credits);
 - Educational Technology (10 credits).
 - Block 2 – Compulsory elective courses in the field of Informatics (20 credits):
 - Authoring Systems (10 credits);
 - Discrete Optimisation (10 credits);
 - Intelligent Systems (10 credits);
 - Object-Oriented Programming (10 credits);
 - Computer Networks (10 credits);
 - Programming and Development of Thinking (10 credits);
 - Graphical Application Programming (10 credits);
 - Robotic Kits in Programming Education (10 credits);
 - Selected Issues in Informatics (10 credits);
 - Web Technologies (10 credits);
 - Acquiring Knowledge from the Web (10 credits).
 - Block 3 – Compulsory elective course-specific courses (20 credits):
 - Linear Programming (10 credits);
 - Mathematica Mathematical Software (10 credits);
 - Mathematical and Statistical Software R (10 credits);
 - Modelling and Simulation in Education (10 credits);
 - Advanced Chemical Software (10 credits);
 - Development of Talented Individuals from the Perspective of Physics (10 credits);

- Statistical Methods (10 credits).

III. Completing all courses means earning:

- 10 credits for a compulsory course;
- 20 credits from blocks B1;
- 20 credits from blocks B2;
- 20 credits from blocks B3.