ELTE Senate 2017.06.26.

DOCTORAL SCHOOL IN BIOLOGY

Faculty of Sciences

Discipline: Biological Sciences

Training form: Doctorate (PhD) training

Aim: preparing for a doctoral (PhD) degree and practice in higher education

Training period: 6 semesters

School: full time

Financing: covered by a state scholarship or self-financed

Prerequisite for the doctoral training: MSc degree and a successful preliminary exam

Language prerequisite: a certified 'C' type medium level exam

Training close: absolutorium

The number of credits required for the absolutorium: 180

Modes/modules of getting credits: course credits (32), research credits (148)

I. Program Ecology, Conservation Biology and Systematics

Program leader: Dr. János Podani

Training/Education module (credits required: 32)

BIO/1/2 Grass ecology

4 credits, theoretical, optional, non-repeatable

BIO/1/4 The theory and practice of botanical sampling

4 credits, theoretical, optional, non-repeatable

BIO/1/5 Introduction to computational analysis of multivariate biological data

4 credits, practice, optional, non-repeatable

BIO/1/6 Conservation Biology

4 credits, theoretical, optional, repeatable

BIO/1/7 Ecological basis of seed bank

4 credits, theoretical, optional, non-repeatable

BIO/1/14 Population dynamics and evolution of clonal plants

4 credits, theoretical, obligatory, repeatable

BIO/1/17 Preservation of biological diversity in forests

4 credits, theoretical, optional, non-repeatable

BIO/1/18 Moss Ecology

6 credits, practice, optional, non-repeatable

BIO/1/19 General Ecology

4 credits, practice, optional, non-repeatable

BIO/1/20 Spatial Ecology

4 credits, theoretical, optional, non-repeatable

BIO/1/20P Spatial Ecology

4 credits, practice, optional, non-repeatable

BIO/1/21 Vegetation Dynamics

2 credits, theoretical, optional, non-repeatable

BIO/1/22 Conservationist Phylogenetics

2 credits, theoretical, optional, non-repeatable

BIO/1/23 Forest Ecology

2 credits, theoretical, optional, non-repeatable

BIO/1/24 Application of spatial informatics in ecological analysis

2 credits, theoretical, optional, non-repeatable

BIO/1/25 Holocene vegetation dynamics and phylogeography

BIO-RK-KV partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT Supervised research work

1 credit/30 working hours, PhD research, obligatory, repeatable

II. **Program Ethology**

Program leader: Dr. Ádám Miklósi

Training/Education module (credits required: 32)

BIO/2/1 Behavioural Genetics

4 credits, theoretical, obligatory, non-repeatable

BIO/2/2 Cognitive Ethology

4 credits, theoretical, optional, non-repeatable

BIO/2/3 Human Ethology

4 credits, theoretical, obligatory, non-repeatable

BIO/2/4 Ethology

4 credits, theoretical, obligatory, non-repeatable

BIO/2/5 Research Management

4 credits, theoretical, obligatory, non-repeatable

BIO/2/6 Integrated research methods in ethology

6 credits, theoretical, optional, non-repeatable

BIO/2/7 Behavioural Ecology

4 credits, theoretical, optional, non-repeatable

BIO/2/8 Dog Ethology

4 credits, theoretical, optional, non-repeatable

BIO/2/9 Progress Reports

4 credits, lectures in blocks, optional, repeatable

BIO/2/10 Animal Welfare

4 credits, theoretical, optional, non-repeatable

BIO/2/11 Synthetic Ethology

4 credits, theoretical, optional, non-repeatable

BIO/2/12 Personality of animals

4 credits, theoretical, optional, non-repeatable

BIO/RK-KV partial education, credit transfer (credits available: 16)

Research module (credits available: 148)

1 credit/30 working hours, PhD research, obligatory, repeatable

III. Program Immunology

Program leader: Dr. Anna Erdei

Training/Education module (credits required: 32)

BIO/3/1 Journal Club

4 credits, practice, obligatory, repeatable

BIO/3/2 Progress Reports

4 credits, individual research, optional, repeatable

BIO/3/3 PhD Day

4 credits, theoretical, obligatory, repeatable

BIO/3/4B MIT Conference

4 credits, theoretical, optional, non-repeatable

BIO/3/E Impulse Conference

4 credits, theoretical, optional, non-repeatable

BIO/3/5 Fluorescence flow and imaging cytometry

4 credits, theoretical, optional, non-repeatable

BIO/3/6 Immunology of Infections

4 credits, theoretical, optional, non-repeatable

BIO/3/7 Immunopathology

4 credits, theoretical, optional, non-repeatable

BIO/3/9 Signal transduction in immune cells

4 credits, theoretical, optional, non-repeatable

BIO/3/10 Cell communication in the immune system

4 credits, theoretical, optional, non-repeatable

BIO/3/11 B-cell ontogenesis

4 credits, theoretical, optional, non-repeatable

BIO/3/12 T-cell ontogenesis

4 credits, theoretical, optional, non-repeatable

BIO/3/14 Innate immunity, the evolution of immune system

4 credits, theoretical, optional, non-repeatable

BIO/3/17 Immunological applications of microfluidics

4 credits, theoretical, optional, non-repeatable

BIO/3/18 The immunology of pregnancy (a systems biology view)

4 credits, theoretical, optional, non-repeatable

BIO/RK-KV Partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT Supervised research work

1 credit/30 working hours, PhD research, obligatory, non-repeatable

IV. Program Experimental Plant Biology

Program leader: Dr. Gábor M. Kovács

Training/Education module (credits required: 32)

BIO/4/1 Plant Biotechnology

4 credits, theoretical, optional, non-repeatable

BIO/4/3 Electromicroscopic techniques I.

8 credits, practice, optional, non-repeatable

BIO/4/4 Pharmacobotanics

4 credits, theoretical, optional, repeatable

BIO/4/5 Writing scientific papers in English

4 credits, theoretical, optional, non-repeatable

BIO/4/6 Plant molecular biology

4 credits, theoretical, optional, repeatable

BIO/4/7 Plant metabolism-physiology

4 credits, theoretical, optional, repeatable

BIO/4/8 Separation techniques of plant materials

8 credits, practice, optional, non-repeatable

BIO/4/9 Absorption and fluorescence spectroscopy in the analysis of plant materials and metabolism

8 credits, practice, optional, non-repeatable

BIO/4/11 Ion absorption and mineral nutrition in plants

4 credits, theoretical, optional, non-repeatable

BIO/4/12 Biogenesis and evolution of photosynthetic apparatus

4 credits, theoretical, optional, non-repeatable

BIO/4/13 Plant-microbe interactions

4 credits, theoretical, optional, non-repeatable

BIO/4/14 Plant-fungus interactions

4 credits, theoretical, optional, non-repeatable

BIO/4/15 Secondary plant metabolism

4 credits, theoretical, optional, non-repeatable

BIO/4/16 Plant stress physiology

4 credits, theoretical, optional, non-repeatable

BIO/4/18 Plant reproduction biology

4 credits, theoretical, optional, non-repeatable

BIO/4/19 Fluorescence imaging techniques

4 credits, practice, optional, non-repeatable

BIO/4/20 Ultrastructural bases of plant cell functions

4 credits, theoretical, optional, non-repeatable

BIO/4/21 Plant molecular virology

4 credits, theoretical, optional, non-repeatable

BIO/4/22 Electromicroscopic techniques II.

8 credits, practice, optional, non-repeatable

BIO/4/23 Plant transformation and transgenic plants

4 credits, theoretical, optional, non-repeatable

BIO/4/24 PCR techniques in plant molecular biology I.

4 credits, theoretical, optional, non-repeatable

BIO/4/24P PCR techniques in plant molecular biology II. P

4 credits, practice, optional, non-repeatable

BIO/4/25 Plant cell and tissue culturing

4 credits, theoretical + practice, optional, non-repeatable

BIO/RK-KV partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT Supervised research work

1 credit/30 working hours, PhD research, obligatory, repeatable

V. Program Genetics

Program leader: Dr. Tibor Vellai

Training/Education module (credits required: 32)

BIO/5/1 Genetic Analysis (advanced)

4 credits, theoretical, obligatory, non-repeatable

BIO/5/2 Developmental Genetics

4 credits, theoretical, optional, non-repeatable

BIO/5/3 Gene technology, recombination

4 credits, theoretical, optional, non-repeatable

BIO/5/4 Clinical human genetics

4 credits, theoretical, optional, non-repeatable

BIO/5/5 Genetics of osteo-metabolism

4 credits, theoretical, optional, non-repeatable

BIO/5/6 Molecular taxonomy, evolution

4 credits, theoretical, optional, non-repeatable

BIO/5/7 Exon shuffling, molecular evolution, genomics

4 credits, theoretical, optional, non-repeatable

BIO/5/8 Applications of transgenic plants

4 credits, theoretical, optional, non-repeatable

BIO/5/9 Gene silencing, RNA interference

4 credits, theoretical, optional, non-repeatable

BIO/5/11 DNA-protein sequence-specific interactions (prokaryote, eukaryote)

4 credits, theoretical, optional, non-repeatable

BIO/5/12 Seminars in Bioinformatics

4 credits, theoretical, optional, non-repeatable

BIO/5/13 Transgenic animals: developmental genetics applications

4 credits, practice, optional, non-repeatable

BIO/5/15 From transcription to translation: proteins, genes, diseases

4 credits, theoretical, optional, non-repeatable

BIO/%/16 Bacterial and (new) phage genetics

4 credits, theoretical, optional, non-repeatable

BIO/5/17 Molecular tumour genetics

4 credits, theoretical, optional, non-repeatable

BIO/5/18 Biogenesis and function of plant regulatory small RNAs

4 credits, theoretical, optional, non-repeatable

BIO/5/19 Functional genomics

4 credits, theoretical, optional, non-repeatable

BIO/5/21 Plant-microbe symbiosis: genetic analysis of mycorrhiza relationship and symbiotic nitrogen fixation

4 credits, theoretical, optional, non-repeatable

BIO/5/22 Models for recombination, gene conversion, enzymes, gene map

4 credits, theoretical, obligatory, non-repeatable

BIO/5/24 Mathematical and statistical methods in genetic identification and genealogy

4 credits, theoretical, optional, non-repeatable

BIO/RK-KV Partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT supervised research work

1 credit/30 working hours, PhD research, obligatory, repeatable

VI. Program Molecular Cell and Neurobiology

Program leader: Dr. Gábor Juhász

Training/Education module (credits required: 32)

BIO/6/1 Introduction to molecular neurobiology

4 credits, theoretical, optional, non-repeatable

BIO/6/2 Cell biology of neurodegenerative diseases

4 credits, theoretical, optional, non-repeatable

BIO/6/3 Developmental biology

4 credits, theoretical, optional, non-repeatable

BIO/6/4 Light- and electromicroscopical immunohistochemistry

6 credits, practice, optional, non-repeatable

BIO/6/6 Membrane biology

4 credits, theoretical, optional, non-repeatable

BIO/6/7 Neuroanatomy I.

4 credits, practice, optional, non-repeatable

BIO/6/8 Neuroanatomy II.

4 credits, practice, optional, non-repeatable

BIO/6/9 Methods in neurobiology

4 credits, theoretical, optional, non-repeatable

BIO/6/10 Stem cell biology

4 credits, theoretical, optional, non-repeatable

BIO/6/11 Receptors, signal transduction, cell-cell communication

4 credits, theoretical, optional, non-repeatable

BIO/6/13 Cell adhesion: cell-cell, cell-matrix interactions

4 credits, theoretical, optional, non-repeatable

BIO/6/16 Cell skeleton, motility, cytomatrix

4 credits, theoretical, optional, non-repeatable

BIO/6/20 Transgene techniques: GFP, gene knock out, gene therapy

4 credits, theoretical, optional, non-repeatable

BIO/6/21 The ubiqutin-proteasome system and its functions

4 credits, theoretical, optional, non-repeatable

BIO/6/22 Tumour biology

4 credits, theoretical, optional, non-repeatable

BIO/6/23 Molecular cell biology of celf-digestion, cell death and rejuvenation

8 credits, theoretical, optional, non-repeatable

BIO/RK-KV Partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT supervised research work

1 credit/30 working hours, PhD research, obligatory, repeatable

VII. Program Neuroscience and Human Biology

Program leader: Dr. László Détári

BIO/7/1 Molecular biology of learning and memory

4 credits, theoretical, optional, non-repeatable

BIO/7/2 Neuronal differentiation I.

4 credits, theoretical, optional, non-repeatable

BIO/7/3 Phychopharmacology

4 credits, theoretical, optional, non-repeatable

BIO/7/4 Neurochemistry

4 credits, theoretical, optional, non-repeatable

BIO/7/6 Behavioural physiology I.

4 credits, theoretical, optional, non-repeatable

BIO/7/7 Daily rhythms, sleeping-wakefulness

4 credits, theoretical, optional, non-repeatable

BIO/7/8 Behavioural neurobiology and pharmacology

4 credits, theoretical, optional, non-repeatable

BIO/7/9 Cognitive Physchophysiology

4 credits, theoretical, optional, non-repeatable

BIO/7/10 Antropogenetics

4 credits, theoretical, optional, non-repeatable

BIO/7/12 Evolution of primates

4 credits, theoretical, optional, non-repeatable

BIO/7/14 The history and sources of paleodemography

4 credits, theoretical, optional, non-repeatable

BIO/7/15 Anatomical variations and developmental abnormalities

4 credits, theoretical, optional, non-repeatable

BIO/7/16 Modelling of the nervous system

4 credits, theoretical, optional, non-repeatable

BIO/7/17 Imaging of brain structure and function

4 credits, theoretical, optional, non-repeatable

BIO/7/18 Electrophysiology

4 credits, theoretical, optional, non-repeatable

BIO/7/19 In vitro cell technology

4 credits, theoretical, optional, non-repeatable

BIO/7/20 Experimental surgery, animal care

4 credits, theoretical, optional, non-repeatable

BIO/7/21 Molecular basis of learning and memory

4 credits, theoretical, optional, non-repeatable

BIO/7/22 Emergence and radiation of anatomically modern Homo sapiens

4 credits, theoretical, optional, non-repeatable

BIO/7/23 Critical stages of hominid evolution

4 credits, theoretical, optional, non-repeatable

BIO/7/24 Critical stages of hominid evolution

4 credits, theoretical, optional, non-repeatable

BIO/7/27 Methods for data processing and modelling in human biology

4 credits, theoretical, optional, non-repeatable

BIO/7/28 Applied anthropometry

4 credits, theoretical, optional, non-repeatable

BIO/7/29 Auxology

4 credits, theoretical, optional, non-repeatable

BIO/7/30 Human ecology: men and its environment I.

4 credits, theoretical, optional, non-repeatable

BIO/7/31 Human ecology: men and its environment II.

4 credits, theoretical, optional, non-repeatable

BIO/7/32 Methodology of thesis preparing

4 credits, theoretical, optional, non-repeatable

BIO/7/33 Genetics of human growth

4 credits, theoretical, optional, non-repeatable

BIO/7/34 Paleopathology

4 credits, theoretical, optional, non-repeatable

BIO/7/35 Natural and social aspects of human races

4 credits, theoretical, optional, non-repeatable

BIO/7/36 Neuronal differentiation II.

4 credits, theoretical, optional, non-repeatable

BIO/7/37 Behavioural physiology II.

4 credits, theoretical, optional, non-repeatable

BIO/7/39 Neuroinformatics: bases and neurobiological applications

4 credits, theoretical, optional, non-repeatable

BIO/7/40 Preparing scientific presentation (manuscripts, lectures, posters, theses)

2 credits, practice, optional, non-repeatable

BIO/7/41 Discussing scientific papers

2 credits, theoretical, optional, repeatable

BIO/7/42 Neurotoxicology

4 credits, theoretical, optional, non-repeatable

BIO/7/43 Microscopic techniques in neurobiology

4 credits, theoretical, optional, non-repeatable

BIO/7/44 Neuropeptides

4 credits, theoretical, optional, non-repeatable

BIO/7/45 Experimental stem cell biology: organ development and cell regeneration

4 credits, theoretical, optional, non-repeatable

VIII. Program Structural Biochemistry

Program leader: Dr. Mihály Kovács

Training/Research module (credits required: 32)

BIO/8/1 Directed evolution approaches in protein science

4 credits, theoretical, optional, non-repeatable

BIO/8/2 Introduction to protein bioinformatics

4 credits, theoretical, optional, non-repeatable

BIO/8/3 Eukaryotic gene expression systems

4 credits, theoretical, optional, non-repeatable

BIO/8/4 DNA repair mechanisms: intracellular interactions

4 credits, theoretical, optional, non-repeatable

BIO/8/5 Structural biology of DNA repair

4 credits, theoretical, optional, non-repeatable

BIO/8/6 Structure and function of disordered proteins

4 credits, theoretical, optional, non-repeatable

BIO/8/7 Journal Club

4 credits, theoretical, optional, non-repeatable

BIO/8/8 Transient enzyme kinetics

4 credits, practice, optional, non-repeatable

BIO/8/9 Fluorescence spectroscopy

4 credits, practice, optional, non-repeatable

BIO/8/10 Transient enzyme kinetics

4 credits, theoretical, optional, non-repeatable

BIO/8/11 Fluorescence spectroscopy

4 credits, theoretical, optional, non-repeatable

BIO/8/12 Protein folding: mechanisms underlying correct and false structures

4 credits, theoretical, optional, non-repeatable

BIO/8/13 Analysis of protein structure and interactions: methodological overview

4 credits, theoretical, optional, non-repeatable

BIO/8/15 Physical biochemistry

4 credits, theoretical, optional, non-repeatable

BIO/8/16 Eukaryotic signal transduction: protein networks

4 credits, theoretical, optional, non-repeatable

BIO/8/17 Progress reports

4 credits, theoretical, obligatory, repeatable

BIO/8/19 Statistical analysis of biological measurements

4 credits, theoretical, optional, non-repeatable

BIO/8/20 Methods of protein crystallography

4 credits, theoretical, optional, non-repeatable

BIO/8/21 Protein structure, flexibility and stability

4 credits, theoretical, optional, non-repeatable

BIO/8/22 Disordered proteins – a short course

2 credits, theoretical, optional, non-repeatable

BIO/8/23 Szent-Györgyi Albert lecture series

4 credits, theoretical, optional, non-repeatable

BIO/8/24 From basic science to applied cancer therapy

4 credits, theoretical, optional, non-repeatable

BIO/8/26 Calculation of molecular interactions in biology

4 credits, theoretical, optional, non-repeatable

BIO/8/27 Structural bioinformatics of drug design

4 credits, theoretical, optional, non-repeatable

BIO/8/28 Introduction to the modelling of biomolecules

4 credits, theoretical, optional, non-repeatable

BIO/8/29 Application of protein bioinformatic tools in practice

4 credits, theoretical, optional, non-repeatable

BIO/8/30 Analysis of protein and peptide structures by NMR spectroscopy

4 credits, theoretical, optional, non-repeatable

BIO/8/31 Progress reports

0 credits, theoretical, obligatory, repeatable

BIO/RK-KV Partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT supervised research work

1 credit/30 working hours, PHD research, obligatory, repeatable

IX. Program Zootaxonomy, Animal Ecology and Hydrobiology

Program leader: Dr. János Török

Training/academic module (credits required: 32)

BIO/9/1 Advanced Zootaxonomy

4 credits, theoretical, obligatory, non-repeatable

BIO/9/2 Selected chapters in modern ecology

4 credits, theoretical, obligatory, non-repeatable

BIO/9/5 Alternatives of maintaining and regulation of hydro ecosystems

4 credits, theoretical, optional, non-repeatable

BIO/9/6 Development of lake sediments, and their physical and chemical features, their roles in material cycles, particularly in nutrient cycles

4 credits, theoretical, optional, non-repeatable

BIO/9/7 Actual problems of conservation

4 credits, theoretical, optional, non-repeatable

BIO/9/8 Biogeography

4 credits, practice, optional, non-repeatable

BIO/9/9 Ecological informatics

4 credits, practice, optional, non-repeatable

BIO/9/10 Chemical ecology of insects

4 credits, theoretical, optional, non-repeatable

BIO/9/13 Results of taxonomic and ecological research of Enchytraeids (Enchytraeidae, Oligochaeta)

4 credits, theoretical, optional, non-repeatable

BIO/9/14 Molecular taxonomic methods in zoology

4 credits, theoretical, optional, non-repeatable

BIO/9/14P Molecular taxonomic methods in zoology

8 credits, practice, optional, non-repeatable

BIO/9/15 Animal-microbe interactions

4 credits, theoretical, optional, non-repeatable

BIO/9/18 Evolution and ecology of parasites

4 credits, theoretical, optional, non-repeatable

BIO/9/19 Ecological and evolutionary bird research

4 credits, theoretical, optional, non-repeatable

BIO/9/20 Reproduction and nutrition strategies

4 credits, theoretical, optional, non-repeatable

BIO/9/21 General reproduction biology

4 credits, theoretical, optional, non-repeatable

BIO/9/23 Pheromone biology of insects

4 credits, theoretical, optional, non-repeatable

BIO/9/24 Predator-prey interaction and its application in biological control

4 credits, theoretical, optional, non-repeatable

BIO/9/25 Selected chapters in protistology

4 credits, theoretical, optional, non-repeatable

BIO/9/26 Progress reports (recommended semester: 3)

4 credits, theoretical, obligatory, non-repeatable

BIO/9/27 Progress reports (recommended semester: 5)

4 credits, theoretical, obligatory, non-repeatable

BIO/9/28 Modern statistical methods in ecology

4 credits, theoretical, optional, non-repeatable

BIO/9/29 Evolutionary ecology – major principles and methods

4 credits, theoretical, optional, non-repeatable

BIO/RK-KV Partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT supervised research work

1 credit/30 working hours, PhD research, obligatory, repeatable

X. Program Theoretical and Evolutionary Biology

Program leader: Dr. Eörs Szathmáry

Training/academic module (credits required: 32)

BIO/10/1 Basic statistics

4 credits, theoretical, optional, non-repeatable

BIO/10/2 Basic statistics

4 credits, practice, optional, non-repeatable

BIO/10/3 Advanced statistics

4 credits, practice, optional, non-repeatable

BIO/10/4 Biological application of general linear models

4 credits, theoretical, optional, non-repeatable

BIO/10/5 Programming for biologists I.

4 credits, practice, optional, non-repeatable

BIO/10/6 Numerical methods and in silico simulations in ecology

4 credits, practice, optional, non-repeatable

BIO/10/7 Theoretical evolutionary biology

4 credits, theoretical, optional, non-repeatable

BIO/10/8 Theoretical ecology

4 credits, theoretical, optional, non-repeatable

BIO/10/9 Theoretical evolutionary biology and ecology seminar

2 credits, theoretical, optional, repeatable

BIO/10/12 Research plan seminar

2 credits, theoretical, optional, non-repeatable

BIO/10/13 Population biology seminar

4 credits, theoretical, optional, repeatable

BIO/10/14 Ecological and evolutionary spatiotemporal models

4 credits, theoretical, optional, non-repeatable

BIO/10/19 Organization of food networks

4 credits, theoretical, optional, non-repeatable

BIO/10/20 Evolutionary game theory

4 credits, theoretical, optional, non-repeatable

BIO/10/21 Non-linear phenomena in ecology

4 credits, theoretical, optional, non-repeatable

BIO/10/25 Biological networks JC

4 credits, practice, optional, repeatable

BIO/10/26 Actual problems in theoretical biology

4 credits, theoretical, optional, non-repeatable

BIO/10/29 Mathematical methods in the research of HIV infection

4 credits, theoretical, optional, non-repeatable

BIO/10/30 Modelling prebiotic evolution

2 credits, practice, optional

BIO/10/31 Mathematical models in biology

2 credits, theoretical, optional

BIO/10/32 Computer modelling in biology

4 credits, practice, optional

BIO/10/33 Evolutionary background of human cooperation

2 credits, theoretical, optional

BIO/RK-KV Partial training, credit transfer (credits available: 16)

Research module (credits available: 148)

BIO/KUT supervised research work

1 credit/30 working hours, PhD research, obligatory, repeatable

SYSTEM OF CONTROLLING KNOWLEDGE

148 credits can be obtained by supervised research work. Research activity is qualified by the supervisor, using the following three scales: excellent – sufficient – non-sufficient. The fulfilment of credits is verified by the program leader in the student's index upon the advice of the supervisor. Student have to obtain at least 4 lecture/practice credits in each semester during the first two years in order to fulfil the requirements.

Attending a course and passing the related exam will provide 2 credits for the students. Accomplishment of courses is evaluated by the lecturer by using a 5-level scale (1-2-3-4-5) into the index. During the 3 years of training, students have to gain at least 32 lecture/practice credits. Students can also gain credits by attending other doctoral programs or schools. This action should be permitted in advance by the program leader.

Credits can be obtained by attending partial training of other national or international doctoral schools/programs. The program of the partial training is approved by the doctoral committee upon the advice of the supervisor and program leader.

If the student previously participated in a related research program, upon the advice of the supervisor the committee of the doctoral school can admit this action by compensating credits. The maximum level of credits obtained by previous research, partial training or attending other doctoral programmes cannot be higher than 505 of the lecture/practice credits.