**Title of the course:** The Biological Foundations of Psychology

**Course code:** PSYM21-DC-103

**Head of the course: Balázs Judit**

**Academic degree:** PhD

**Position:** Professor

**MAB Status:** A (T)

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| **Az oktatás célja angolul** |

**Aim of the course:**

The course focuses on those fields of biological sciences which are necessary to understand and applies contemporary theories of developmental psychological research. The course has two parts. The first part introduces students to theories and research in the field of behavioural genetics, while the second part aims to provide information on the most important theories and methodological possibilities of neurology and cognitive neuroscience.

**Learning outcome, competences**

knowledge:

* general knowledge of the theories and methods of neurology and behavioural genetics
* understanding the genetic and neurological basis of behaviour and cognition, and the connections between them

attitude:

* understanding the complex connections between biological and psychological processes, avoiding oversimplification

skills:

* basic proficiency in interpreting and comparing theoretical frameworks and research results in the field of genetics and neurology

autonomy, responsibility:

* The acquired knowledge should be applied in accordance with the ethical guidelines of psychology.
* Students are able to apply the acquired knowledge and skills on their own, in the context of recent literature findings.

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| **Az oktatás tartalma angolul** |

**Topics of the course**

* Behavioural genetics
  + Concepts and principles of quantitative genetics
  + Methods in heritability research (animal models and human studies)
  + Heritability in twin and adoption studies
  + Interactions of environmental and genetic factors
  + Constrains of quantitative genetics
  + Molecular genetics of behaviour. Heritability on a molecular level. Function and structure of DNA. Replicating DNA. Genetic code.
  + Human genome: structure and variability. Gene polymorphisms. Molecular genetics of human evolution.
  + Identifying genes. Genome analysis.
  + Factors regulating the gene expression. Epigenetic effects.
  + Molecular genetic background of psychological factors (temperament, intelligence, personality, psychopathology)
* Cognitive Neuroscience
  + Concepts and principles of cognitive neuroscience
  + Development of biological systems
  + Biological background of cognitive functions (sensory processes, attention, memory, language, executive functions, action planning, social interaction)
  + Age related changes in brain processes
  + Plasticity and development
  + Atypical neural development

**Learning activities, learning methods**

* lecture
* group activities in class
* individual literature preparation
* reading and presenting literature
* project work
* presentation of the project work

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| **A számonkérés és értékelés rendszere angolul** |

**Learning requirements, mode of evaluation, criteria of evaluation:**

requirements

* Robust knowledge of the theories and methods presented in the course literature and lectures

Mode of evaluation: a five-point grading scale based on the different course activities

Mode of evaluation: exam mark

* written exam (genetics)
* oral exam and presentation (cognitive neuroscience)

Criteria of evaluation:

* professional knowledge in the written test/exam
* quality of the presentations

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| **Idegen nyelven történő indítás esetén az adott idegen nyelvű irodalom:** |

**Required readings:**

* Plomin R, DeFries JC, Knopik VS, Neiderhiser JM. (2013). Behavioral Genetics. Worth Publishers, New York.
* Rutter M. (2006) Genes and behavior: Nature-nurture interplay explained. Blackwell. ISBN-13: 978-1-4051-1061-7 (paperback).
* McEwen BS et al. (eds) (2011). Social Neuroscience: Gene, Environment, Brain, Body. Annals of the New York Academy of Sciences, Vol. 1231. ISBN-13: 978-1-57331-840-2
* http://www.nature.com/scitable/ebooks/cntNm-3
* http://www.nature.com/scitable/topic/genetics-5
* http://www.nature.com/scitable/ebooks/cntNm-8
* http://www.nature.com/scitable/ebooks/cntNm-16553838
* Charles A. Nelson, Monica Luciana (Eds): Handbook of Developmental Cognitive Neuroscience. 2nd edition. 2008. MIT Press.
* Bryan Kolb, Ian Q. Whishlaw: Fundamentals of Human Neuropsychology. 7th edition. Worth Publishers, 2015. (Fejezetek.)

**Course-specific information (specific to a given lecture or seminar)**

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| **General data** |

**Specific (sub)title of the course (if relevant):**

**Specific (sub)code of the course (if relevant):**

**Date and place of the course:**

**Name of the lecturer:**

**Department of the lecturer:**

**Email of the lecturer:**

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| **Specific syllabus/schedule of the lecture/seminar (if relevant)** |



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| **Further specific information (eg. requirements) (if relevant)** |