**Title of the course:** Compulsory elective co-science master's course (Psycholinguistics, Numerical Cognition, Categorisation)

**Course code:** PSYM21-CD-107

**Head of the course:** Krajcsi Attila

**Academic degree:** PhD

**Position:** Habil. associate professor

**MAB Status:** A (T)

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| **Az oktatás célja angolul** |

**Aim of the course:**

The course reviews current models of numerical cognition, methodological issues of the paradigms, and the applied aspects of these models.

**Learning outcome, competences**

knowledge:

* Understanding the main numerical cognition models, their development, neuroscientific background, and impairment.
* Having a review of the current paradigms that can be used in applied scenarios

attitude:

* Computational and mathematical viewpoint for the current models.
* Empirical data-based tests of the models.

skills:

* Ability to evaluate new models.
* Ability to utilize new models for applied situations.

autonomy, responsibility:

* Implementation of knowledge and skills in accordance with ethical standards.

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| **Az oktatás tartalma angolul** |

**Topic of the course**

* Approximate Number System (ANS)
  + Basic phenomena
  + Alternatives of the ANS
  + Perceptual and connectionist implementations and alternatives of the ANS
  + Measurement problems with the ANS
* Development of numerical cognition
  + Numerical cognition of infants
  + Subset-knowers and cardinality principle-knowers
  + Building blocks of symbolic number knowledge of preschoolers
* Impairments of numerical cognition
  + Developmental dyscalculia
  + Acquired impairments
  + Tests for diagnosis

**Learning activities, learning methods**

* Lectures with interactive seminar blocks

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

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

* Paper reviews or a mini empirical study

Mode of evaluation: exam mark

* Evaluation the submitted work

Criteria of evaluation:

* Appropriateness of the provided new viewpoints

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

**Compulsory reading list**

**Recommended reading list**

* Dietrich, J. F., Huber, S., & Nuerk, H.-C. (2015). Methodological aspects to be considered when measuring the approximate number system (ANS) – a research review. *Frontiers in Psychology*, *6*. <https://doi.org/10.3389/fpsyg.2015.00295>
* Feigenson, L., Dehaene, S., & Spelke, E. S. (2004). Core systems of number. *Trends in Cognitive Sciences*, *8*, 307–314.
* Kucian, K., & von Aster, M. (2015). Developmental dyscalculia. *European Journal of Pediatrics*, *174*(1), 1–13.
* Stoianov, I., & Zorzi, M. (2012). Emergence of a “visual number sense” in hierarchical generative models. *Nature Neuroscience*, *15*(2), 194–196. <https://doi.org/10.1038/nn.2996>
* Szkudlarek, E., & Brannon, E. M. (2017). Does the Approximate Number System Serve as a Foundation for Symbolic Mathematics? *Language Learning and Development*, *13*(2), 171–190. https://doi.org/10.1080/15475441.2016.1263573

**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)** |