Aim of the course:
The main objective of the course is to give an overview on the basic methods, shared disciplinary concepts and current theoretical models of Neuroscience, as a timely and developing multidisciplinary approach in understanding our brain.

Learning outcome, competences
knowledge:
• Psychophysiological, Neuroscience and Neuroanatomy concepts
• Current methods and main objectives in Neuroscience
• Basics in Neuroanatomy

attitude:
• Utilisation of knowledge in scientific communication, presentation

skills:
• Skills of applying main methods
• Skills of identifying related neurological and neuroanatomical structures of psychological functions

Content of the course
Topics of the course
In modular structure, covering the following fields of research

Psychophysiology
Dr. Molnár Márk,
5x3 hours
• Methods in neuroscience 6 hours
• Psychopharmacology 3 hours
• Wakefulness, sleeping and attention regulation 2 hours
• Affetive processes, stress 2 hours
• Learning and memory 2 hours
• 15 hours

The neuroscience of main psychological functions
Dr. Honbolygó Ferenc
3x1,5 hours
• Perception
• Object perception
• Attention

Affective Neuroscience
Dr. Cserjési Renáta
3x 1,5 hours
• Physiological needs and brain regulation
• Psychology and physiology of Pain
• Neuronal basis of social perception and empathy
Introduction to Neurology and Neuroanatomy  
Dr. Jakab György  
3x3 hours or 6x1,5 hours

Idegtudományi módszerek és a tudatosság  
Dr. Nádasdy Zoltán  
2x3 óra
- Neural coding 1x1,5  
- Consciousness 1x1,5  
- Computational methods in neuroscience 1x3

Learning activities, learning methods  
Lectures and interactive discussions

<table>
<thead>
<tr>
<th>Evaluation of outcomes</th>
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<tr>
<td><strong>Learning requirements, mode of evaluation, criteria of evaluation:</strong></td>
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<tr>
<td>requirements</td>
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<tr>
<td>• Reliable basic knowledge in the domain of neuroscience and neuroanatomy</td>
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<td>mode of evaluation: written exam</td>
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<td>criteria of evaluation:</td>
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<td>• Knowledge on basic concepts and the skill of utilizing the models of neuroscience adequately</td>
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<tr>
<th>Reading list</th>
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<tbody>
<tr>
<td><strong>Psychophysiology:</strong></td>
</tr>
<tr>
<td><strong>Mandatory readings:</strong></td>
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</tbody>
</table>
| • Neil R. Carson: Foundations of Physiological Psychology, *Allyn and Bacon, 1999*  
• John T. Cacioppo: Handbook of Psychophysiology, *Cambridge Univ Press, 2007*  
• Kenneth Hughdal: Psychophysiology, *Harvard Univ. Press, 2001* |

| **Consciousness:** |
| **Mandatory Reading list:** |
| **Recommended:** |

| **Neural coding:** |
| **Mandatory Reading list:** |
| • John von Neumann Neumann The Computer and the Brain (The Silliman Memorial Lectures Series) |
| **Recommended:** |
Computational methods in neuroscience

Mandatory Reading list:


Recommended:

- Peter Dayan: Theoretical neuroscience (Computational and Mathematical Modeling of Neural Systems)