# The Social Brain: Exploring the Brain Mechanisms Behind Social Interactions & Behavior

**Ms. Anna Reebs**

**Course Number: 702.2097**
**Class Time: TBA**
**Class Location:** TBA
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## Course Description:

Human beings are inherently social creatures, so that all aspects of our cognition and behavior are to some extent social. As humans we have the unique ability to understand different social contexts, to emphasize and to reason about our own and other people's intentions, motives, and beliefs. The goal of this course is to explore the brain processes behind such human behaviors and social interactions.

First, we will lay the foundation for understanding the 'Social Brain' by reviewing the basic underlying brain mechanisms and the developmental stages of the brain. In the 2nd part of the course, we will address specific social behaviors such as empathy, theory of mind, social disorders, and their neuronal basis. And third, we will explore "plasticity," the brain's capability to be shaped by cultural and environmental influences, social interactions, and contemplative practice. In this course, both social psychology and neuroscience inform our understanding of social behavior, with each discipline offering a complementing perspective.

## Course Requirements:

**Attendance, preparation and classroom participation** (15%)

Students are expected to actively participate in all classes. It is important to complete the reading assignments prior to the weekly sessions. A list of readings can be found in the syllabus. Students may not miss more than three meetings in order to receive a grade for the course irrespective of the reasons for the absence.

**Class presentation (25%)**

In groups of two, students will prepare a 15-minute presentation of one of the readings from the syllabus (or beyond syllabus, in coordination with the lecturer). The presentation will include a brief overview of the main arguments raised in the text as well as a critical review, in which the students are expected to connect the text to concepts and ideas discussed in the course. Each student has the responsibility to email the lecturer the specific topic she or he wants to present until the 3rd session of the course.

**Response papers (20%)**

Students are responsible for writing 6 response papers during the semester. Each response papers should be between 250 to 400 words. Response papers should reflect the students' opinions, thoughts, feelings and experiences related to the weekly reading. The response papers should not give a summary of the readings, but rather use the readings to explore and reflect on interesting ideas or debates related to the topic. The deadline for handing the papers (via the Moodle system) is midnight before class.

**In-Class Exam (40%)**

The exam will be held on the last class of the semester. The exam will be comprised of questions about content of the class and an essay question, where students will be asked to critically reflect on topics discussed in class.

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| Meeting 1 | Introduction |
| Meeting 2 | Foundations of the Human Neuro System<br>Reading:<br>Bear, M. F., Connors, B. W., & Paradiso, M. A. (Eds.) (2007). Neurons & Glia. In *Neuroscience: Exploring the Brain (Vol. 4)*(pp 23-53). Lippincott Williams & Wilkins. |
| Meeting 3 | Brain Development over Lifespan<br>Reading:<br>Stiles, J., & Jernigan, T. L. (2010). The basics of brain |

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| | development. *Neuropsychology review*, *20*(4), 327-348. |
| Meeting 4 | Formation of Emotions<br><br>Reading:<br><br>Barrett, L. F. (2017). Emotions as Social Reality. In *How emotions are made: The secret life of the brain* (pp 128-174). Houghton Mifflin Harcourt. |
| Meeting 5 | Neuroscience of Emotion<br><br>Reading:<br><br>Bear, M. F., Connors, B. W., & Paradiso, M. A. (Eds.) (2007). Brain Mechanisms of Emotion. In *Neuroscience: Exploring the Brain (Vol. 4)*(pp 23-53). Lippincott Williams & Wilkins. |
| Meeting 6 | Theory of Mind & Social Behavior<br><br>Reading:<br><br>Apperly, I. A. (2012). What is "theory of mind"? Concepts, cognitive processes and individual differences. *The Quarterly Journal of Experimental Psychology*, 65(5), 825-839.<br><br>Hughes, C., & Leekam, S. (2004). What are the links between theory of mind and social relations? Review, reflections and new directions for studies of typical and atypical development. *Social development*, 13(4), 590-619.<br><br>Adolphs, R. (2009). The social brain: neural basis of social knowledge. *Annual review of psychology*, *60*, 693-716. |
| Meeting 7 | Empathy<br><br>Reading:<br><br>Bernhardt, B. C., & Singer, T. (2012). The neural basis of empathy. Annual review of neuroscience, 35, 1-23.<br><br>de Waal, F. B., & Preston, S. D. (2017). Mammalian empathy: behavioural manifestations and neural basis. *Nature Reviews Neuroscience*, *18*(8), 498. |
| Meeting 8 | Mechanisms of Mindfulness<br><br>Reading: |

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| | Dahl CJ, Lutz A, Davidson RJ. Reconstructing and deconstructing the self: Cognitive mechanisms in meditation practice. *Trends Cogn Sci (Regul Ed )*. 2015;19(9):515-523. |
| Meeting 9 | Neuroscience of Mindfulness<br><br>Reading:<br><br>Tang, Y. Y., Hölzel, B. K., & Posner, M. I. (2015). The neuroscience of mindfulness meditation. *Nature Reviews Neuroscience*, *16*(4), 213. |
| Meeting 10 | Loving Kindness & Self-Compassion<br><br>Reading:<br><br>Neff, K. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and identity*, *2*(2), 85-101.<br><br>Klimecki, O. M., Leiberg, S., Lamm, C., & Singer, T. (2012). Functional neural plasticity and associated changes in positive affect after compassion training. *Cerebral cortex*, *23*(7), 1552-1561. |
| Meeting 11 | Environmental Influences on the Brain: Stress<br><br>Reading:<br><br>Rutten, B. P., Hammels, C., Geschwind, N., Menne-Lothmann, C., Pishva, E., Schruers, K., ... & Wichers, M. (2013). Resilience in mental health: linking psychological and neurobiological perspectives. *Acta Psychiatrica Scandinavica*, *128*(1), 3-20.<br><br>McEwen, B. S., Bowles, N. P., Gray, J. D., Hill, M. N., Hunter, R. G., Karatsoreos, I. N., & Nasca, C. (2015). Mechanisms of stress in the brain. *Nature neuroscience*, *18*(10), 1353. |
| Meeting 12 | The Changing Brain: Neuroplasticity & Rehabilitation<br><br>Reading:<br><br>Mahncke, H. W., Bronstone, A., & Merzenich, M. M. (2006). Brain plasticity and functional losses in the aged: scientific bases for a novel intervention. *Progress in brain research*, *157*, 81-109. |
| Meeting 13 | The Changing Brain: Gender Differences |

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| | Reading:<br><br>Hines, M. (2011). Gender development and the human brain. Annual review of neuroscience, 34, 69-88. |
| Meeting 14 | Exam |